



28th Annual Organic Agriculture Conference January 22-25, 2009



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Welcome to the 28th annual

2009 Organic Agriculture Conference

"O" is For Opportunity

On behalf of the organizing committee I would like to thank the many sponsors, benefactors, exhibitors, speakers, and of course you the participant. We hope you enjoy the conference.

This "Proceedings" booklet gives you a synopsis of the various presentations that will be presented at the conference. This will give you a lead on what will be discussed if you plan to attend, and a summary if you have missed it. In most cases there are also some speaker contacts for more information.

Proceedings from 2002-2008 conferences are available on the conference website at:
<http://www.guelphorganicconf.ca/proceedings09.html>

We also advise you that during the conference some photos of the audience may be taken for future conference use.

Enjoy the conference and

find your opportunities!

28th annual 2009 Organic Agriculture Conference

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SEMINAR A

.....
.....**U.C. room PCH S**
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**THE 6th ANNUAL CONFERENCE FOR
SOCIAL RESEARCH IN ORGANIC AGRICULTURE**

Organized by:

Jennifer Sumner, OISE/University of Toronto

Veronika Mogyorody, University of Windsor

Theme: Organic Agriculture and Sustainable Food Systems

**Rural-Urban Linkages for Local Food in the City of Guelph-County of
Wellington Landscape**

**By Karen Landman, Ricardo Ramirez, Charlotte McCallum, Joaquin Navas,
Patrick Carroll, Erin Nelson, University of Guelph**

The organic agriculture movement has long been considered the primary way in which the industrial food system could be challenged and sustainable alternatives could be built. However, although organic agriculture remains important, over the past several years there has been a growing focus on how local food networks can also help contribute to ecological, social and economic sustainability. The research presented here is based on a study of opportunities and barriers to a local food system in Guelph and Wellington County. Findings suggest that key factors for strengthening local food systems include the facilitation of face-to-face contact in order to build relationships within and across stakeholder groups; the presence of a convener or coordinator whose legitimacy is recognized by all stakeholders; and the creation of a supportive policy framework using input from local actors. Barriers currently inhibiting the growth of an effective local food system in the area include deficient communication networks; the tendency for consumers to favour cheap and convenient foods; an insufficient and inconsistent supply of local food; logistical problems in the development of efficient distribution systems; and, perhaps most importantly, a lack of local, provincial, and national policies designed to help foster the social and economic viability of a local food business model. Opportunities to overcome these barriers exist within the network of research participant.

**A Comparative Case Study of Nova Scotia Farmers' Markets:
Exploring Connections Among People, Places and Food**

Kristen Lowitt, Nova Scotia Agricultural College

In recent years there has been a growing recognition of problems associated with the industrial food system. The increasing distance over which food travels means that few consumers have the chance to encounter the people or places associated with food production. In the movement towards more sustainable food systems, farmers' markets may be key institutions. Direct

marketing is central to farmers' markets which enables selling that is based on a one-to-one relationship between producers and consumers.

This comparative case study explores connections among people, places and food and actors' perceptions of 'quality' and 'local' foods at the Halifax, Wolfville and Hubbards Farmers' Markets in Nova Scotia, Canada. Participant observation and interviewing was employed using a qualitative framework. This study was conducted as part of a MES degree program at Dalhousie University (2008) and is among the first comparative case studies of farmers' markets in Nova Scotia.

In exploring connectedness in markets, findings suggest that producer-consumer relations, understood in terms of social embeddedness, form the foundation of the farmers' markets that were studied. The markets were also important gathering spaces for the local community. This study corroborates previous research in finding that 'quality' was a complex concept associated with a range of attributes by different actors (see Sage, 2003 & Morris and Young, 2000). Findings also indicate a range of understandings of 'local' food among market actors, most often understood spatially as the distance over which food travels.

Evolve or Die: Is Organic Certification Due for a Tune-Up?

Jennifer Bundock, University of Waterloo

Organic certification is quickly becoming a measure of quality and conscience within food and non-food sectors. This distinction of organic as "better" comes saturated with it an anticipated promise of quality, purity and environmental stewardship. With expectations this high, can "organic" labeling alone retain a sustainable level of value, or is a continual evolution of the standards necessary to meet ongoing shifts in consumer concern... or stated plainly, can organics continue live to up to the hype?

I believe that "organic" has a lot of room for growth as a well-defined and inclusive label. I intend to examine whether or not the benefits of specific guidelines for animal derived food products are justified by research focusing on ethics and nutrition. Ultimately I intend to examine the complex relationship between organic standards and the perceived expectations of consumers, and how this connection relates to the future of organics. Many people have professed organics to be superior, but without much discussion of what the certification entails, and why certain values have been adopted or not. Additionally, philosophy about health and nutrition, as well as environmental stewardship could be logically adopted by organics. These additions could strengthen the ethical impact of certification, especially with regards to animal derived food products (like eggs, meat, and milk).

If organics are to endure, they need to be reactive to the concerns of consumers. The standard must continue to evolve in order to be sustainable, and nutrition and ethics are the next logical frontiers.

Owning Organics: Bolivia's National Organic Standard

Christina Keys, University of Guelph

There is growing concern in the organic agriculture movement that national standards can threaten the movement's ability to define organic agriculture and its principles. This paper assesses whether, and to what extent, Bolivia's new, mandatory national standard poses such a threat. The standardization of organics within Bolivia creates a bureaucracy that limits the flexibility of what is defined as organic in order to create a sufficiently strict standard that protects the rights of certified organic farmers. Yet private, farmer-based organizations in Bolivia have set standards of their own for years, which have reflected organic farmers' principles and have been created in transparent and open processes. Primary research in Bolivia and secondary sources suggest that the country's organic movement has retained a sense of ownership over the standard, as the Association of Organic Producer Organizations of Bolivia (AOPEB) has taken an active role in drafting the standard and in lobbying, passing, and implementing the associated regulation. Thus AOPEB is playing a fundamental role in the institutionalization of the national standard and is ensuring that the standard reflects the basic ethical values of the Bolivian organic movement.

Is That the Way the Cookie Crumbles?: Consumer Deskilling in Food Systems and the Journey Toward Food Sovereignty

Shannyn Kornelsen, Wilfred Laurier University

Deskilling within food systems has been occurring for as long as food industries have been in business. Many of these attempts have been successful, resulting in a drastic shift towards non-cooking across the world, including Canada. Deskilling occurs in both the world of the labourer and the consumer and this paper will focus initially on examples of deskilling within our food system and then move towards the argument for reskilling in an effort to obtain food sovereignty.

The paper will commence with a history of deskilling, and the gendered dimension of the consumption movement. Attention will be paid to the various forms of deskilling as the term does not necessarily imply that its meaning extends beyond the realm of meal preparation, but rather includes the loss of nutritional and environmental knowledge surrounding food choices. Within the discussion on deskilling, this paper will describe various methods of consumer deskilling such as: professionalized and scientific deskilling, deskilling as 'positive', deskilling of the palette, and forced deskilling.

In a move beyond simply identifying the various aspects of deskilling, the latter part of the paper will focus on reskilling in the resistance against unsustainable, corporate controlled food systems and the movement towards greater food sovereignty and food literacy. One of the strengths surrounding the movement is that it fits within the broader contexts of many global issues including community food security, the organic movement, the fair trade movement, CSA's and kitchen literacy.

Barriers to Change: Is an Alternative Food System Really Possible?

Hélène Lawler, University of Waterloo

Demand for sustainable food has increased dramatically since 2007. Nevertheless, North American food culture is so fortified by capitalist and consumer ideology that deep change anytime soon is questionable. I examine the following interconnected barriers:

The Economy: Knowledge is now the number one global commodity. For the economy to expand corporations must “produce” – and patent – knowledge; coming up with ever-new GMOs may become a requirement for corporate survival.

The Religion of Science: Western ideology finds its roots in the dual Enlightenment myths of “progress through unending technological success” and “salvation through the accumulation of knowledge.” It is this line of thinking that allows us to treat nature as merely a resource for exploitation. Shifting our collective mindset will be a tremendous challenge. Resistance is particularly evident in arguments that the solution to the global food crisis is GMOs.

Efficiency and Consumerism: Our lives are too fast for slow food. Fast, cheap food available 24 hours a day is required to feed the gods of Capitalism. Many attempts at integrating healthy, sustainable food into the mainstream involve speeding up slow food. That leads us right back to: fast food.

Lost knowledge: Ecologically grown and domestically processed food (i.e. canning etc.) requires a tremendous amount of knowledge that takes years to learn. Capitalism’s demand for explicit, codified knowledge for rapid implementation and dissemination has all but extinguished these parent-to-child, master-apprentice systems of learning.

Advancing Sustainability in the Canadian Food and Agriculture System: New Spaces for Policy Advocacy

Rod MacRae, York University

Many environmental, health and economic problems facing the Canadian food and agriculture system have yet to be resolved, despite, in some cases, years of interventions. This persistent failure to resolve problems and create greater sustainability suggests that traditional Canadian government policy goals, institutional arrangements and instruments are inadequate. Earlier eras of state regulation, revolving around a productivist paradigm, worked well when the state had significant capacity, the issue was targeted, but the policy actors were recalcitrant. But in the neo-liberal era of bilateral and multilateral trade arrangements and international institutions, many of the traditional policy and regulatory orientations have been removed, replaced in some cases by new notions of appropriate government intervention. Governments are now searching for new and effective regulatory instruments that might work without unduly straining apparently limited human and financial resources.

Civil society, including some farm organizations, has been pushing for progressive implementation of new approaches to agricultural development, potentially leading to broad paradigmatic changes in the food and agriculture system, ones that reflect a focus on sustainability and health (and even multi-functionality). But are these efforts having an effect in this environment of changing institutional arrangements and policy tools?

It appears that many civil society organizations (CSOs) have been slow to realize that shifts are underway within the state and have not necessarily recognized the opportunities and challenges inherent to government efforts to find “next generation” policy and regulatory instruments. In Canada, the limited response by non-governmental actors, including the organic sector, has been blamed on a weak civil society lacking strong institutional and organizational capacity.

In this presentation, these themes are developed, with examples provided from recent efforts to create more sustainable pest management regimes in Canada. Some preliminary observations are offered on new opportunities for CSOs to influence decision makers, and the skills required to be effective.

SEMINAR B

U.C. room 442

Growing Quality Certified Organic Vegetable Seeds.

By Tom Stearns

Tom Stearns, member of Organic Seed Alliance, runs an organic seed growing enterprise, High Mowing Seeds, in Vermont. Module-discussion seminar to benefit all those needing reliable seed; will cover big picture, economic challenges, technical know-how, grower experiences and Q & A.

SEMINAR C

U.C. room PCH S

ORGANIC RESEARCH SYMPOSIUM - NATURAL SCIENCES SESSION

Organized by Andy Hammermeister (OACC)

Management-induced changes in nitrous oxide emission from organic potato rotations in Eastern Canada

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Nitrous oxide (N₂O) emissions from agricultural soils are highly influenced by management practices such as crop rotation, organic amendments, and mineral N fertilizers. In this study, we measured N₂O emissions from three organic potato (*Solanum tuberosum* L.) rotation trials in

Eastern Canada to test these effects. Nitrous oxide emissions and soil mineral N levels were measured from sites over the course of the growing season. Biomass samples of forage and potato were taken to determine the total plant N uptake. Total and marketable potato yield were measured at harvest. In the non-fertilized clover-potato rotation, N₂O emissions (4.4 kg N₂O-N ha⁻¹) were considerably lower than the synthetically fertilized forage and potato rotations (up to 11.6 kg N₂O-N ha⁻¹). No significant differences between N₂O emissions at low rate of compost and N fertilizer were detected, while high rate of compost increased the emissions only in the year of application. Plant N uptake for unfertilized potatoes with a previous clover crop was only 20% lower than the fertilized potatoes. Less than 16% of variation in potato tuber yield (average 30 Mg ha⁻¹) was attributed to the treatments. Organic practices include organic amendments and crop rotations can result in less environmental impacts overall, while maintaining acceptable yield and enhancing the yield stability.

Key words: forage, greenhouse gas emission, N uptake, organic amendment.

Phosphorus Regulation of Legume Biological Nitrogen Fixation on Organic Dairy Farms in Ontario and Nova Scotia

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A recent survey (Roberts et al., Can. J. Plant Sci. 88: 107-114, 2008) found many organic dairy farms in Ontario had low soil test P. This can constrain forage yields and biological nitrogen fixation (BNF), but critical P limits are not clear. To address this, a 3 year project started in the 2008 field season is evaluating the relationship between soil test P, forage crop productivity, and biological nitrogen fixation (BNF) on organic dairy farms in Ontario (10 farms) and Nova Scotia (4 farms). Soil and forage samples are being taken along multi-point transects on 28 fields, in 2-3 sampling periods prior to farmer harvest. Soil samples are analyzed for soil test P. Forage samples are analyzed for yield, total P, total N and %N obtained from BNF. A ¹⁵N natural abundance method is being employed to evaluate BNF. The field study is complemented by growth cabinet and greenhouse studies evaluating the relationship of P supply to nodule formation and BNF in soybean and alfalfa. In addition P rich organic amendments will be evaluated for their impact on P uptake and BNF in soybean. Preliminary results from the field study will be presented.

Organic agriculture to enhance biodiversity on farms

Caroline Halde, BSc, agr. caroline.halde.1@ulaval.ca

“The recent way of practicing agriculture has lead us to rely on only 15 plant species and 8 animal species to supply 90% of our food” - United Nations Convention on Biological Diversity, 2005.

Is loss of biodiversity a major issue?

There is a lot of talk about biodiversity and ecology these days. But is loss of biodiversity a real problem? According to the Food and Agriculture Organization of the United Nations (FAO), loss of biodiversity is a worldwide issue and one of the most serious environmental problems, with severe losses occurring in agricultural areas. Here, biodiversity is simply defined by the variety

of all live organisms (micro-organisms, plants, animals) and the ecosystems they form. The decrease of fauna and flora biodiversity on agricultural lands has been noted from many years. Indeed, the 2000 IUCN Red List of threatened species of the world highlights agricultural activities as the main cause affecting 70 per cent of all threatened bird species and 49 per cent of all plant species. Therefore, FAO is actively promoting the conservation and sustainable use of biodiversity for food and agriculture around the world.

One single species less... so what?

Why should farmers bother about biodiversity and support conservation of endangered species? Does it really matter if we lose a single species? Yes! It is simple: balanced ecosystems have a capacity for self-regulation and look after their own health. Agriculture depends on healthy ecosystems to provide services that include nutrient and waste recycling, pollination from insects, sediment control, and clean water. Poorly managed agrosystems lead to a decline in water quality, in ecosystem function and in biodiversity. Hence, the real question is: is it worth saving an ecosystem that supports lots of species, including humans? I vote yes.

Organic agriculture: a solution to enhance biodiversity

Now, how to enhance biodiversity? Results show that organic agriculture can help solving this issue. The benefits of organic management on soil biological activity are numerous. A study conducted in Switzerland over more than 20 years shows that:

- The biomass of earthworms in organic systems is 30-40 percent higher than in conventional systems and their density even 50-80 percent higher.
- The total mass of micro-organisms in organic systems is 20-40 percent higher than in the conventional system with manure and 60-85 percent higher than in the conventional system without manure. Micro-organisms in organic soils not only mineralize more actively, but also contribute to the build up of stable soil organic matter. Organic management promotes microbial carbon and thus, soil carbon sequestration potential.
- Organic soil management improves soil structure by increasing soil activity and thus, reduces erosion risk. Organic matter has a positive effect on the development and stability of soil structure.
- Organic crops profit from root symbioses and are better able to exploit the soil. Even when all soils are inoculated with active micorrhizae, colonization is enhanced in organic soil.
- Large organic fields (over 15 ha) feature flora six times more abundant than conventional fields. In organic grassland, the average number of plant species was found to be 25 percent more than in conventional grassland, including some species in decline.

Another study by Rice and Ward showed that Conversion to organic agriculture also reduces pressure on endangered forests. Ampay Forest Sanctuary in Peru had great results on enhancing biodiversity after reintroducing native species through agroforestry. Moreover, in all cases studied by Greenberg in Costa Rica, Brazil and Peru, local communities' income was raised while providing benefits to the environment.

Organic agriculture focuses not only on producing food, but also on enhancing biodiversity. As mentioned by FAO Official Nadia El-Hage Scialabba: "Natural ecological balance, below and above ground, is key to its success. A healthy soil is the base for food production and a diversity of plants and animals on land prevents pest and disease outbreaks." Organic agriculture benefits people, animals and the environment and it has the potential to transform agriculture as the main tool for nature conservation.

Concrete actions on your farm

Farmers need ways of protecting the environment while maintaining economic viability; they need projects about farming for their future. There is a broad range of programmes and activities to enhance sustainable agricultural systems and good management practices. For example:

- adopt integrated pest management and pollination management
- get advice on soil, water and woodlands conservation
- promote mixed agricultural systems such as agroforestry
- plant windbreaks
- include one local indigenous in your plantings this year

Let's join our efforts to make a change!

Title: Pitfall-trap captures of ground beetles (Carabidae) in small mulch plots in a highbush blueberry field

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Conservation of natural enemies, such as ground beetles, (Coleoptera: Carabidae) is important for preventative biological control in organic production systems. Our results show the positive effect of mulches in small plots below highbush blueberries (*Vaccinium corymbosum* L.) on pitfall-trap captures of ground beetles. Plots were in a single row of an organically managed field near Kentville, NS. Mulches including Bowater composted pulpmill biosolids, composted sawdust/horse manure, uncomposted pine needles, and an unmulched control were applied to 20 cm depths in June 2007. Beetles were captured for five, one week periods from mid-July to late-September in 2007 and 2008. Twenty-six species were captured in 2007 and at least 17 in 2008. Total beetle captures were lowest in both years in pine needles. *Pterostichus melanarius* (Illiger), the most frequently captured beetle, was significantly more active in composted sawdust/horse manure compared to other mulches in 2008. *Harpalus pensylvanicus* (DeGeer) was significantly more active in Bowater biosolids compared to unmulched and pine needle plots in 2008. Preliminary comparisons are made between these results and 2008 pitfall-trap captures at a second mulched highbush blueberry site. Increased nightly surface temperature may be the primary reason for higher captures in mulches.

Keywords: ground beetles, highbush blueberries, mulch, compost, pitfall-traps

The use of plant essential oils for filth flies control

Simon Lachance and Mathieu Robert

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Eighteen plant essential oils and some natural products were tested in the laboratory for: a) larval growth effects and mortality, b) emergence of adult flies from pupae, c) adult mortality, d) adult fly repellence and e) egg-laying repellence. The initial trials were aimed at finding the best essential oils for bioactivity against the various life stages of the house flies, for further trials on animals in pasture situations. The essential oils have demonstrated a wide range of efficiency on mortality of the various stages of the house fly, as well as for repellence. The pupal stage was

most affected by cedar, oregano, tea tree, lemon, eucalyptus, pine, balsam fir, thyme and rosemary oils. The adult stage was most affected by eucalyptus, pine, balsam fir, lemon and rosemary. For repellence, a large array of oils were effective at reducing the number of adults on a laying substrate, as well as to reduce the number of eggs laid. The most effective were: lemongrass, pine, balsam fir, mint, basil, rosemary, oregano.

Key words: flies, essential oils, repellence, mortality

Timing of herbage allocation in a strip grazing organic system: Effects on grazing pattern, performance, milk quality and health of lactating dairy cows

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Thirty lactating organic dairy cows (609 ± 126 kg of BW) were used in a completely randomized design to study the effect of pasture management on forage energy, grazing pattern, intake, cow health, milk production and composition in a 14-week experiment. Two treatments: morning (AM) and afternoon (PM) strip grazing pasture allocations were compared. Pasture allowance was measured every day at 0700 and 1600 for the AM and PM group respectively. Total dry matter intake was measured using chromic oxide as a marker. Milk production was recorded daily, while milk samples analyzed for fat and protein concentrations were taken weekly. On weeks 2, 6, 10 and 14, blood, urine and fecal samples were collected twice daily (0600 and 1800 h) over 5 consecutive days. Pasture samples were collected daily at 0700, 1200 and 1800 h and TMR at 0800 h. Milk production (25.92 vs 25.25 l d⁻¹, $P = 0.64$), protein (2.89 vs 2.93 %, $P = 0.51$), fat (3.85 vs 3.93 %, $P = 0.55$) and liveweight variation over the course of the trial was 11.5 kg and 3.4 kg ($P = 0.37$) for AM and PM.

Key words: herbage allocation, strip grazing, milk performance

1The Control of Apple Maggots in Organic Orchards with GF-120 NF Naturalyte* Fruit Fly Bait

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The apple maggot (*Rhagoletis pomonella*) is indigenous to North America and is especially widespread in eastern Canada causing fruit damage and economic loss. It is a quarantine pest and infested apples have little or no market value. For organic orchards, the only registered control

product is Surround®, a kaolin clay powder, serving to deter but not actively killing the maggot flies. GF-120 Naturalyte* fruit fly bait is a relatively new organic insecticide (0.02 % spinosad) which has the potential to control apple maggot. Six field trials using different rates of GF-120 (1.5 L/ha, 2.25 L/ha and 3.0 L/ha) were conducted in the summer of 2007 in organic orchards located in two Canadian provinces, Nova Scotia and Ontario; the efficacy of GF-120 was assessed by comparing its performance to the level of apple maggot control achieved by Surround®. Apple maggot pest pressure varied among the orchards under investigation. In Nova Scotia, the “Block 84” orchard was heavily infested with apple maggot and among the unsprayed apples, 69 % sustained some degree of fruit damage. In Ontario, 44 % of the unsprayed apples in “Home” orchard had apple maggot damage. Unsprayed apples from the rest of the orchards had apple maggot injury ranging from 11-18 %. Results showed that less than 3 % of treated apples sustained apple maggot damage in any of the trials in this study except for those in “Block 84” and “Home”. GF-120 tested at any rate was as effective as Surround® in the control of apple maggot with the exception of the “Home” orchard, where the lowest rate of GF-120 had significantly more infested apples than Surround®. However, in the “Block 84” orchard, GF-120 at the lowest rate was as effective as Surround® and was able to reduce fruit damage from 69 % to 11 %.

Keywords: *Malus ×domestica*, *Rhagoletis pomonella*, spinosad, Surround®, efficacy trials

Comparison of Organic and Conventional Farming System from Climate Change Perspective

Tek B. Sapkota¹, Daniele Antici¹, Paola Beloni², Paolo Barberi¹ and Marco Mazzoncini²

Organic production systems have considerable potential for reducing emission of green house gases such as CO₂, N₂O and CH₄. In a system comparison study in Italy, organic production system consumed less energy and emitted less green house gases than conventional system. Most of the researches comparing organic and conventional production systems are confined in a single crop cycle. But only a holistic research considering whole cycle of crop rotation provides information which can be compared with real farm situation. We compared organic and conventional production systems from production as well as environmental point of view. A five-year stockless rotation of Sugar beat, Common wheat, Sunflower, Pigeon bean and Durum wheat was started since autumn of 2001. The inventory of all energy and resources used were summed up and corresponding greenhouse gas emission was calculated for entire five year rotation using the index developed by IPCC and API.

Organic system yielded less in most of the crops but the yield of pigeon bean was comparable with that of conventional system. The lower yield in organic system was mainly due to insufficient nitrogen availability and poor weed management. However, organic system used 44% less energy than conventional system which reduced the production cost as well as production associated emissions. The global warming potential of conventional farming system was 836 kg CO₂ equivalent while that of organic system was only 529.83 kg CO₂ equivalent. However global warming potential due to tillage and other farm operation was comparable between two systems. Therefore, integration of reduced tillage system in organic farming will make organic farming system even more environment-friendly.

Key words: Green house gases, global warming potential, environment-friendly, organic farming

Effects of strip cropping of wheat, corn and soybean on natural control of soybean aphid and other insect pest species

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In organic management, prevention of pest outbreaks is vital and the setting up of cultivated crops is of major concern for the conservation of natural enemies and to stop pests' infestation. The use of strip cropping is an agricultural practice utilized to increase crop yield by a better photosynthesis at crop edge, a reduction of insect pest incidence and a reduction of disease transfer. The objective of this study was to measure the effect of strip cropping of soybean, corn, and wheat in comparison of single-crop of each of these crops, on biological control of soybean aphid and other insect pests species. Two width of strips, 18 and 36m were compared to 180 m width single-crop of the three crops. Insects were sampled once a week between June and harvest of each crops in 2007 and 2008. Soybean aphid population were significantly lower in strips than in single-crop both years. Natural enemies were more abundant in strip crop of wheat, corn and soybean than in single-crop. While there were few effects on other pest species, strip cropping seems efficient to reduce soybean aphid and increase natural enemies abundance, leading to a better natural control in this farm management.

Keywords: strip cropping, soybean aphid, natural enemies, natural control, field crops

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Graduate Student Newspaper Articles

New research into organic controls for major insect pest of blueberries

Justin Renkema; Dept. of Plant and Animal Science, Nova Scotia Agricultural College, Truro NS. jrenkema@nsac.ca

Every year millions of us look forward to a midsummer treat of sweet, juicy blueberries picked fresh and ready-to-eat from our local farms. But did you know that in eastern North America many blueberry farmers spend much time and energy keeping a serious insect pest from getting to the berries before we humans do? That's right; every year small blueberry fruit flies (slightly smaller than houseflies) are busy searching blueberries fields for perfect, ripening berries in which to lay eggs. Once the egg is inside, it hatches into a maggot and grows quickly by feeding on the blueberry. By the time the maggot is full-grown, the blueberry has become soft, mushy and not sellable. And a blueberry customer with a pint half-full of maggoty berries is not a satisfied customer...

But not too worry; your odds of picking or purchasing even one maggoty blueberry are very low! Besides abating customer dissatisfaction, blueberry farmers who ship produce outside eastern NA must meet a zero-tolerance requirement for maggots in fruit to prevent maggot spread. So most farmers must do something to manage blueberry fruit fly, and, currently, insecticides are recommended for keeping maggots completely out of fruit. Unfortunately, this does not leave organic growers and others who are concerned about risks associated with certain insecticides many other options.

And that is exactly where researchers from Nova Scotia are taking up the challenge: can methods complying with organic standards keep blueberry fruit fly at extremely low numbers? The research project is being conducted in highbush (cultivated) blueberry fields, but certain results may also be applicable to wild blueberries.

An important aspect for managing insect pests in organic agriculture is to prevent pest outbreaks before they occur rather than deal with already exploding pest populations. This is especially true for blueberry fruit fly where one maggot is too many. Many insect pests are kept at low numbers by factors including naturally occurring predators and adverse environmental conditions, ie. cold temperatures. Determining such limiting factors for blueberry fruit fly and developing management practices to encourage such limits will provide organic growers with the management tools they need.

Previous research in Nova Scotia showed the advantages of applying various mulches at 15 cm depths below highbush blueberries. Pine needles greatly reduced weed growth and need for weed control. Composted seafood waste was an excellent source of nitrogen. What is unknown is how these and other mulches may affect naturally occurring, ground-dwelling predators. If maggots are not removed from a field via picked berries, they drop to the soil when full grown and form a pupae or cocoon-like dormant stage a few centimeters below the soil surface. Thus, the pupae are susceptible to being fed on by ground predators.

Early research results suggest that certain mulches have dramatic effects on a group of predators called the ground beetles. Many of these beetles are voracious hunters of all types of insects. Composted biosolids from a Nova Scotia pulpmill increased the abundance of a large, black ground beetle called *Pterostichus melanarius*. Laboratory tests showed this beetle to be a prolific consumer of blueberry fruit fly pupae, but further testing is needed to determine if as many pupae will be eaten in a field setting. Most ground beetles disliked pine needles as fewer captures of beetles were made in it compared to unmulched areas.

A second goal of the research is to investigate effects of mulches on development of pupae themselves. Temperature and moisture in mulches can be quite different than those normally experienced by pupae in soil. Such differences may reduce survival of pupae especially when they develop into adult flies in warming spring months. Laboratory tests showed that at constant temperatures, wetter soil and mulch caused lower numbers of pupae to emerge as flies compared to dryer soil and mulch. Since mulches typically hold more water than soil, they may reduce survival of flies in the field.

Even with a well-planned, preventative management plan for blueberry fruit fly, some measures may need to be taken to control adult flies before they lay eggs in ripening blueberries. One such measure is use of an organically registered, recently discovered, naturally occurring compound called spinosad. Tests in the USA showed spinosad to be very effective against blueberry fruit fly. This research in Nova Scotia will show how fruit flies immigrating into a blueberry field can be adequately controlled with border sprays of spinosad, as opposed to spraying entire fields.

So next time you put a handful of delicious blueberries in you mouth, remember the effort that has gone into keeping them maggot-free!

Organic Market Garden Production**By Hermann Bruns****Wild Flight Farm (WFF) Overview:**

Started in 1993 on 20 acres, no buildings

Presently operate on 25 acres (half in production, half in green manure)

Grow 50+ market vegetable crops as well as raspberries

Use one 20'x96' heated greenhouse (half for transplant production and half for early cucumbers or peppers)

A second 20'x96' house is used as half shade house, half storage

Nine more 20'x96' and one 30'x95' houses (3 of which are moveable) are used as unheated high tunnels for growing:

- 1) a wide assortment early vegetables starting in March
- 2) tomatoes, long English cucumbers, and peppers in summer
- 3) cold tolerant greens through late fall and over winter.

Built a 4800 sq.ft. winterized produce storage and packing facility

Employ 6-8 people full-time from April to October, 4 people part-time from November to March

Attend 2 weekly farmer's markets from May to October, 2 biweekly markets and a winter produce subscription scheme from November to April.

Also supply an urban home delivery service with available produce

Equipment summary:**Tractors:**

Kubota M8540 – 75 hp 4WD with front-end loader - bucket or pallet forks

72" center to center wheel spacing, 15.5" tire tread

- used for primary soil tillage and as a general use farm tractor

Kubota L245H – 30 hp offset engine, used with belly mounted basket weeder

60" center to center wheel spacing, 11" tire tread

Farmall Cub – 10hp offset engine, used with various belly mounted cultivating tools

40" center to center wheel spacing, 7" tire tread

Other field equipment:

10' wide x 8' deep, 3 point hitch vibra-shank heavy cultivator,

– used like a chisel plough for primary soil cultivation in the spring

10' Brillion culti-packer, - used in conjunction with heavy cultivator

- breaks down soil lumps and smoothes field

5' Howard rotavator – for seed bed prep & crop residue/green manure incorporation

6' JD flail chopper used for mowing potato tops, crop residue, green manure

7' 3 point hitch cultivator set up for hilling 2 potato rows at a time

Antique JD 1 row potato digger

10' seed drill for seeding green manure crops

2 Troybilt rear tine rototillers do most of the tillage work in the high tunnels

1 Planet Jr. hand push seeder

1 Earthway seeder used only for seeding beans

Miscellaneous hoes and hand tools

Other equipment:

1989 Chevy cargo van used for transporting vegetables from the fields
2007 Mitsubishi 3-ton delivery truck with 18" refrigerated box & hydraulic tail-gate
Ekko (made in Denmark) barrel-style root washer
2 pallet jacks for moving bins and pallets
1 battery-powered hydraulic bin stacker

Season extension:

Unheated high tunnels (aka. cold frames) form the basis for our season extension. We gain 3 to 4 weeks in the spring by growing a wide variety of early vegetables in our tunnels. There can still be snow on the ground outside when we start planting some of the first cold tolerant varieties inside. Even early carrots benefit significantly from an early March seeding. Some of our high tunnels are moveable enabling us move them off the early crops before they are harvest and replant the houses with peppers, tomatoes and cucumbers. In the fall the cold frames are filled again cold-tolerant crops to take us into late fall and, in the case of claytonia and corn salad, through winter with fresh greens.

That brings up another way of extending the season – selecting crops that are cold tolerant (such as claytonia, spinach, corn salad, leeks, green onions, etc) that can be harvested as needed or building storage for a diversity of root crops. Carrots that taste sweet and juicy are always a real draw to a winter market stand as are novelty items such as watermelon radish (aka. “Red meat radish”), golden beets, etc.

Mechanical Weed Control:

Every market gardener knows that weed control is critical. The goal is limit weed growth as much as possible so that it does not interfere with crop growth and efficient harvest. Finally we also want to limit weeds from going to seed. All of this can cost a lot of time so we use several mechanical weed control techniques to become more efficient. My goal is to limit the need for hand hoeing or weeding as much as possible. Several crops never need to be touched by hand until harvest time.

- Chain harrows for blind cultivation – used most on pre- and post emergent potatoes
- Propane powered tiger torch used mainly on pre-emergent carrots
- Basket weeder belly-mounted on Kubota L245H – used for all crops grown on beds
- Farmall cub – used for hilling crops that can handle it to smother in-row weeds
- Deck mower controls weed growth on field roads, field margins, and farmyard
- Under-seeding annual ryegrass on crops like asparagus, broccoli/cabbage, corn, squash also helps reduce weed growth.

Pest Control:

Each farm has it's own pest issues and has to find ways around them. Here are some of ours and how we deal with them:

- Flea beetles love mustard greens – can use Remay or fine mesh but found that growing them in a high tunnel reduces damage significantly.
- Potato tuber flea beetle – plant short season varieties early to avoid the most damaging late summer populations.
- Root maggot / rust fly – cover with polyethylene insect mesh (works much better than Remay) to keep away the adult egg-laying flies
- Cabbage looper – spray Bt with a backpack sprayer on broccoli/cauli/cabbage when necessary, usually 2-3 times/season
- Black bears like corn – a battery powered radio at full volume overnight seems to work.

Packing shed design:

A large proportion of our time is spent washing and packing vegetables for market. Developing detailed packing lists helps organize the harvest crew before they head out to the field. It is also important to provide training on efficient harvest techniques and ask people to stick to certain crops so that they get proficient at harvesting them. We usually try to harvest most things before noon. Once everything has been harvested, it comes back to the packing shed to be washed and packed for market. This is where packing shed design can really improve the flow and efficiency of the packing process. In general, the flow of produce should be more or less linear from the time it enters the packing shed to the time it leaves. We use light farm built trollies that receive produce bins from the field and move them through the packing process, the cooler, onto the delivery truck to be rolled onto the sidewalk behind the tables at market. That saves a lot of lifting and carrying. Other packing shed elements include wash table design, packing station setup, loading dock, office, lunch room, packing material storage.

Marketing:

Wild Flight Farm started out selling exclusively at farmer's markets, was inspired to try Community Shared Agriculture (CSA) by Dan Wiens, and has recently converted it's CSA back to a farmer's market with good success.

CSA's have some advantages over farmer's markets but also a number of drawbacks. The advantages of a secure market and payment upfront were quite important in the early years of our farm. Now that the farm is well established those features are not as important to us and we've converted the summer CSA we were operating in Salmon Arm to an "All Organic Market". The result was that we were able to attract a more diverse group of customers in much larger numbers, have reduced our management costs (tracking customer preferences, writing newsletters, stressing over share contents), and our sales have doubled. We presently only offer a "Winter Produce subscription" as we call it, and are in the process of gradually phasing that out in favour of winter markets as well.

Our farm also offers weekly surpluses (and grow specific crops in larger quantities) for an urban delivery business in Kelowna. Even though we earn somewhat less, the opportunity to unload surpluses or move larger volumes can make such an association very useful because it often complements our farmer's market sales. The goal is to match production and sales as closely as possible so that we end up selling most of what we grow.

Market Stand Design:

Our first market stand displayed produce on a card table with a few baskets propped up nearby sheltered from sun and rain by a rudimentary orange tarp. Four versions later we now have a modular design that allows us to add custom-built slanted display tables as needed each with an integrated canopy. For most of the year our display is about 30' in length but will sometimes stretch close to 40' in peak season. The table design allows us to display our produce in a double row of green plastic totes – the exact same totes that we pack and transport our vegetables to market in. The slanted table method has several advantages over flat table displays:

- The table looks fuller ("pile it high, watch them").
- Produce displayed on angle looks more appealing.
- Produce totes allow you to load more produce on the table.
- Totes also prevent produce from mixing as customers start in on it.
- The display can easily be altered while setting up or as the market progresses.
- The top edge of the totes is great for attaching the pricing signage.

- The custom canopy design not only stands out in a long row of the ubiquitous “Easy-up” tents, but is also more stable and more practical (because there are far fewer posts). The construction costs are roughly the same as buying a canopy but if anything breaks it is easier to fix. The downside is that our canopy takes longer to erect.

We’ve trained our customers to line up at the far end of our market stand, pick up a shopping basket and file along the length of the tables making their selections in an orderly manner ending up at our cash-out table where at least two of us quickly transfer their produce into shopping bags while mentally (and verbally) tallying up their purchase.

About Hermann Bruns:

Fifteen years ago Hermann Bruns, biology degree in hand, was in the first few years of a career in environmental management when he experienced a life changing event. He met his future wife, Louise. Hermann had grown up on a dairy farm and had just spent the past 10 years trying to get away from farming. But Louise, a city girl, dreamed about growing organic vegetables. So together they quit their jobs to start an organic market garden having no idea of what they were getting themselves into.

With a healthy dose of naïve optimism they purchased a bare 20-acre cornfield, began building a small house (what a way to test a marriage!!), and grew their first vegetables. Fast forward to today and Wild Flight Farm, still on the same 20 acres, now uses 24,000 sq.ft. of poly tunnels, a 4000 sq.ft packing and storage facility, and 7 seasonal employees to produce a year-round supply of organic vegetables for local markets. Hermann is a past president of the North Okanagan Organic Association and has served as a director of the Certified Organic Associations of BC.

Contact info:

If you would like more information about our farming methods, you can reach Hermann or Louise at 250-838-7447 or wildflight@jetstream.net. If you are a student wanting to gain work experience on our farm please email your resume accompanied by a cover letter detailing any relevant education or experience.

The Current State of Genetic Engineering in Canada and the World

by Lucy Sharratt, Julie Daniluk, Kim Delaney, Dag Falck,

Presentation by Lucy Sharratt

What's the reality of GE in the ground and on grocery store shelves? When we cut through corporate public relations and the abundant misinformation about genetic engineering, also called genetic modification, what do we find?

It was 1995 when the Canadian Food Inspection Agency approved the first genetically engineered crop for growing in Canada - herbicide tolerant canola. 13 years later GE dominates canola, corn and soy grown in Canada. However biotechnology corporations have not been able to commercialize much more than this. GE sugar beet was grown in Canada (Ontario) for the first time last year but Bovine Growth Hormone, GE Flax and GE Wheat have all been soundly rejected. Will GE Alfalfa be commercialized soon or will this too be rejected by farmers and consumers in Canada?

In sum total, of the 12 GE crops actually approved by the Canadian Government, only 4 are on the market for Canadian farmers - corn, canola, soy and sugar beet. If you add cotton to this small list, you have virtually named all the GE crops grown across the world. Additionally, the new technology of genetic engineering has only really produced two major traits: herbicide tolerance and insect resistance. These are the only two GE traits incorporated into seeds grown in Canada.

GE CROPS GROWN IN CANADA		
CROP	TRAIT	WHERE ON THE SHELVES
1. Corn	Insect resistant, herbicide tolerant	Corn flakes • Corn chips • Cornstarch • Corn syrup • Corn oil and other corn ingredients in processed foods • Sweeteners like glucose and fructose • Eggs, milk and meat
2. Canola	Herbicide tolerant	Canola oil • Eggs, milk and meat
3. Soy	Herbicide tolerant	Soy oil • Soy protein • Soy lecithin • Tofu • Soy beverages • Soy puddings • Eggs, milk and meat
4. Sugar beet	Herbicide tolerant	Sugar

Check www.cban.ca/gefoods for updates

GE FOODS IMPORTED TO CANADA		
FOOD	GROWN	WHERE ON THE SHELVES
5. Cottonseed oil	U.S.	Cottonseed oil • Vegetable oil in processed foods such as potato chips
6. Papaya	U.S. (Hawaii)	Papaya in fruit juices and other processed foods
7. Squash	U.S.	Some zucchini • Yellow crookneck and straightneck squash
8. Milk products (Bovine Growth Hormone)	U.S.	Milk solids and powder • Frozen desserts with dairy • Imported mixed drinks with milk ingredients

Check www.cban.ca/gefoods for updates

While the reality of GE in Canada is less expansive than we may have been led to believe, the challenge for organic farmers and for consumers that want to avoid GE is significant. This present state of affairs, however challenging, can be met with determined action from the organic industry including consumers. It is now up to the industry and all concerned parties to press for a moratorium on all new GE crop releases, and for us to learn how to address the threats posed by existing GE crops until such time that they are reevaluated by independent science and democratic process

Presentation by Julie Daniluk

In 2001, The Big Carrot Natural Food Market in Toronto, Ontario implemented a non-GMO purchasing policy after a year and a half of research. They simply discontinued those product lines that were not confirmed by the manufacturer to be non-GMO. It was a radical and very successful move for the store. But the absence of an authoritative standard for non-GMO created problems for this effort and led The Big Carrot to look for a more comprehensive and reliable way in which to continue providing its customers with non-GMO foods.

In 2005, The Natural Grocery Company in California and the Big Carrot Natural Food Market teamed up to form the Non-GMO Project, with a common goal of creating a standardized meaning of non-GMO for the North American food industry. In 2007, the Non-GMO Project expanded to include all stakeholder groups in the natural products industry, including consumers, retailers, farmers, and manufacturers.

Working at every level of the supply chain, all the way back to the seeds, the Project's role is to ensure the heritage DNA of organic crops is kept intact. The core requirements are traceability, segregation, and testing at critical control points.

Tracing GMO's and keeping track of heritage DNA is a sound way to preserve organic crops for future generations.

Presentation by Dag Falck

Dag Falck will share 3 steps to effective action that we all can do individually to start creating a world where GMOs will not threaten the integrity of organic food and agriculture.

He will also talk about the cost to manufacturers of keeping the products free of GMO, and labelling requirements.

About Julie Daniluk:

After graduating from the Canadian School of Natural Nutrition, Julie Daniluk became a member of one of Canada's largest health food stores in Toronto, The Big Carrot. Julie is the Organic Committee Representative for the board of directors of the Canadian Health Food Association. As the chief in-store nutritionist she teaches workshops on the potential health effects of Genetically Modified Food and the importance of organic agriculture.

About Lucy Sharratt

Lucy Sharratt works as Coordinator for the Canadian Biotechnology Action Network (CBAN) in Ottawa www.cban.ca. Lucy has worked as a researcher and campaigner with organizations concerned about genetic engineering since 1999. Lucy was the Coordinator of the Safe Food/Sustainable Agriculture Campaign at the Sierra Club of Canada and worked as a researcher for the BioJustice Project of the Polaris Institute in Ottawa. She also worked as Project Manager

for "Voices from the South", a project of the Working Group on Canadian Science and Technology Policy which focused on issues raised by genetic engineering in developing countries, and as Coordinator for the International Ban Terminator Campaign. Author of reports and book chapters on related issues, Lucy obtained a Masters from the Institute of Political Economy at Carleton University where she researched the regulation of genetically engineered foods and crops in Canada.

Lucy Sharratt, Coordinator

Canadian Biotechnology Action Network (CBAN)

Collaborative Campaigning for Food Sovereignty and Environmental Justice

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About Kim Delaney

Kim Delaney is a farmer based in Palmerston ON. Her business, Hawthorn Farm, produces organic vegetable, herb and flower seed focusing on heirlooms and public plant breeding releases. Kim's interest in seed production was sparked as a result of many years of seed collection and production in a tallgrass prairie restoration program based in Chatham ON. On farm vegetable breeding and selection for short season growing continue to fuel her passion for seed.

Kim and her partner live off-grid, in a strawbale house surrounded by acres of meadow and woodland. She is the women's advisor the National Farmers Union of Ontario and sits on the board of the Centre for Applied Renewable energy. Kim is committed to the production of healthy food and clean energy.

About Dag Falck

Dag Falck, the Organic Program Manager for Nature's Path Foods is committed to organic integrity in products and processes, and in organic standards.

He promotes organic as a solution to modern challenges and he is an active participant in private, NGO and government organic initiatives to bring about a healthy environment, clean and healthy food, and great natural taste.

Nature's Path was an early supporter of the Non-GMO Project and Dag is currently a board member of the Non GMO Project.

Member:

CHFA (Canadian Health Food Association) Organic Council

OTA Organic Advisory Council (chair)

Non GMO Project Technical Advisory Board

Dag Falck, Organic Program Manager

Nature's Path Foods Inc.

Nurturing People, Nature & Spirit

www.naturespath.com

SATURDAY January 24th, 2009

2009 Keynote Address -

"Organic Opportunities For Farmers & Consumers"

By Wayne Roberts

Save

CAN ORGANICS FEED THE WORLD?

Organics -- and the same goes for many of the new approaches to food and the environment -- are at a tipping point. Once food sales hit two per cent of the market a few years ago, organics arrived. The media attention became as mainstream as the supermarket profiles. Those responsible for a relatively small share of that two per cent even get labeled by some critics as Big Organic. Now that's arriving!

Though the organic arrival is oftentimes overstated and over-interpreted, all the attention that organic is getting in stores, the media, universities and the general public tells us something. There are so many points of dissatisfaction with the conventional food system that a brash statement about the possibility of alternative ways of growing and distributing food captures attention, even when it only commands two per cent of the market. That's what tells us we're at a tipping point.

O is for Opportunity. O is also for Obligation. Opportunities and obligations are special and specific during tipping points. This year's Guelph conference keynote will try to describe this new landscape, and how branding, framing, public discourse and reasoning, customer appeals, outreach to the general public -- market building and movement building -- all need to be considered in light of Tipping Point Opportunities and Obligations.

It's a law of personal, business and social movement development that new opportunities go hand in hand with new obligations -- which is why we can't afford to get tipsy about tipping points. The kinds of behavior that led to good marks in high school don't work at college, the kinds of behavior that led to good grades at university don't make the grade in the workworld, for example. Likewise, the kinds of survival mechanisms that worked for a home-based business don't help a growing company survive. And the way early adopters and "converts" talked excitedly to one another turn different crowds off. Every success creates more complex challenges -- what one green business authority has called "the learning paradox."

Some say the challenge is to change with growth while remaining true to core beliefs. A more accurate way of describing the challenge is to ask if we're ready to honor our core beliefs by "scaling up" so organics becomes the norm, not the alternative.

During the long years when organics were marginal, the Big Question always was: Can Organics Feed the World. That was a question designed to put organic advocates on the defensive. Your

food may be better for the soil and the environment, but it's too expensive and too hard to grow to ever be more than an elite trend, the agribusiness critics scoffed.

Life itself, and some very powerful scientific and United Nations studies, have now answered the question about whether organics can feed the world. Once that data is understood, the new Big Question changes. Part of the reason why we're now in the Tipping Zone is that the New Question is: Can Organics Save the World (in time).

The keynote presentation reviews branding and positioning opportunities that can advance market development and public appeal. The presentation also identifies public policy proposals that are timely and appropriate in the emerging Tippy-Turvy world of food.

11.00 am -12.00 pm (ADVANCED)

Open Pollinated Corn For Low Input Organic Systems

By Victor Kucyk

Initially, finding information on Open Pollinated corn and OP corn populations that are reasonably adapted to our area was difficult. Information about maturity and other agronomic traits was not necessarily accurate. The discrepancy may be due to some or all of the following: genotype by environmental interaction, not actively selecting for maturity (early OP corn tends to adapt to the location where it is grown), possible contamination from neighboring sources or the selected sample size was too small.

Open Pollinated Corn is a live system that is dynamic and will adapt to current growing conditions and environment. It is only as good as the selections made by the last person that grew it. Anyone interested in producing their own seed requires some level of understanding of general plant breeding and the commitment to put in enough time, effort and resources to do this properly. Not everyone is willing to do this.

We have spent the past ten years trying to understand the underlying problem(s) in breeding improved OP corn populations that have economic value to the farmer, particularly for those with livestock. Open pollinated corn with its' high nutrient value has the potential to fit into a low input organic/non-organic system, given the current input costs as well as the high cost of feed. Generally, if a heterogeneous population is grown with reduced stress (ideal growing conditions and cultural practices) the difference between plants within a population is small. Stressing the population by nature or by design tends to make these differences more visible. In our breeding program we use no seed treatment, increased plant population and reduced fertility. As a result, populations of corn are being created that can better utilize nutrients from the environment, minimizing cost of production. Generally, we are selecting plants that are extremely hardy and more similar (without losing the open pollinated nature of the corn) capable of growing in an environment with minimal inputs.

Open pollinated corn is a multi-plant (heterogeneous) population. Because of its' variability, one can select for almost any trait that they feel is important. A high selection pressure (around ½ % to 1% level) requires a very large population. Selected plants are marked for repeated and unbiased observations. To select for multiple traits requires a proportionately larger sample size. At least 200 selections are needed to maintain genetic variation and prevent inbreeding depression. Adapted populations can be crossed to build new populations, combine traits or to

insert a specific trait not found in the original population. The goal is to change the frequency of desirable plants (phenotypes) from low to high without changing the open pollinated nature of the corn.

Once OP corn population(s) have been grown and generally adapted to your growing conditions, population improvement can be intra or inter within or between populations, depending how much improvement you can make within a population – maturity, for example. Earliness can be introduced by crossing a late by early population to widen the gene base for maturity selection in the next season. Inter population improvement can be made if the populations used are not closely related. It takes on average about five (5) years to stabilize a population for whatever trait or traits you are looking for (Quantitative traits – kernel colour, stalk strength, and disease resistance and Qualitative traits – yield, protein and mineral potentials). On-going selections are still required because of the dynamic nature of the corn and its interaction with the changing environment.

Corn should be planted at least 2 inches deep (or deeper if necessary to place it into soil moisture), as early in the spring as it is reasonable to work the field. Border rows are used to isolate the OP corn from adjacent corn fields. The border rows are removed and not used for seed production. Larger numbers of border rows are used if potential contamination from hybrid corn exists. Selections should be made near the centre of the seed field to minimize contamination. If isolation is not possible, then delayed planting can minimize contamination by separation the pollination source by time provided the growing season is long enough. Processing OP corn seed needs to be done in a timely manner as to not harm the germination. The cobs are picked and dried with low heat, and then shelled. If germination is less than 75%, it cannot be sold as seed in Canada.

Several examples of individual farm operations which are conventional, transitional and organic that grow open pollinated corn, will be highlighted.

Comparison of Hybrid Corn Maturity

Classification Systems

Days to Relative Maturity *	FAO (Europe)	U.S. Heat Units (GDD)	Canadian Corn Heat Units (CHU)
70	100	1650	2100
75		1750	2300
80	200	1850	2500
85		1950	2600
90	300	2050	2700
95		2150	2800
100	400	2250	2900
105		2350	3200
110	500	2450	3400
115		2550	3500
120	600	2650	3700
125		2750	3900
130	700	2850	4100
135		2950	4300
140	800	3050	4500

* Days to 50% Tassel

About Victor Kucyk

Victor has been a full time cash crop farmer near Mitchell, Ontario since 1989 and farms 200 acres. He owns a small seed company, A & V Kucyk Limited with his wife Anna and has been breeding open-pollinated corn for the past 10 years. They maintain a private seed bank of about 100 populations of open pollinated corn. He raised Alfalfa Leafcutter bees and produced alfalfa seed for 10 years. Prior to that he worked in research for 8 years for several commercial seed companies, in alfalfa breeding and evaluating corn inbreds and hybrids.

Graduated from University of Guelph (Crop Science) 1977 and Waterloo Lutheran University (Chemistry) 1973.

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11.00 am -12.00 pm (INTRODUCTION)

Bio-security in poultry flocks: organics and outdoor access issues

By Ruth Knight

The Canadian organic industry will soon be under a mandatory certification system that is recognized nationally and internationally by a diversity of certification bodies. The National Organic Standards (Canadian Organic Production Systems Standards: General Principles and Management Standards and Permitted Substances Lists) will come into effect in June 2009. In the interim, the existing voluntary standards for organic production and processing are very similar to the national standards. A summary of the basic principles are as follows:

- Animals shall have access to open-air runs with the exception when weather and land conditions don't permit it.
- The living conditions shall accommodate the health and natural behaviour of all animals including access to outdoors, fresh air and natural daylight.
- Specific to poultry - the poultry shall not be kept in cages and shall be reared in open-range conditions and have free access to pasture subject to weather conditions. Open-air runs shall be covered with vegetation.

On-farm bio-security involves maintaining good hygiene practices and limiting exposure to external sources of contaminants. A disease outbreak can result in significant loss of income, industry confidence and genetic loss to the farms contracting the disease as well as all other participants in the industry. The principle of on-farm bio-security is to reduce the risk of a disease outbreak to your operation as well as provide some security to your operation should a disease outbreak occur on other operations in your region.

The demand for organic poultry is strong and growing within Ontario and it is imperative that Ontario organic producers can fulfill that demand. Raising organic poultry has been a viable enterprise for many farm families. The organic poultry producers have to be profitable as well as confident that bio-security measures can protect them and provide documentation of acceptable protocol to regulatory and marketing agencies as well as the consuming public.

Access to the outdoors in open-air runs covered with vegetation is central to the organic standards. Government agents and various supply managed poultry agencies favour indoor confinement as the best measure to reduce risk. One marketing agency, the Turkey Farmers of Ontario has placed regulations on their quota holders that produce turkeys outdoors. There is considerable debate about the feasibility of these regulations for certified organic turkey producers, and if the regulations are justified or will achieve the desired result.

The workshop will include: a presentation on the organic poultry standards and some examples of how poultry are currently managed in outdoor confinement; a review of a Small Flock Bio-security Resource Kit that has been prepared for the non-regulated poultry industry; provide some useful tips on how to enhance bio-security and manage disease risk on your farm; and discuss why it is important to your operation.

A significant portion of this workshop will involve a facilitated discussion of various questions related to the topic of bio-security and other issues pertinent to organic poultry production. Al Dam is the Provincial Poultry Specialist with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). Along with other provincial livestock specialists from the major livestock groups they have recently formed an OMAFRA organic livestock team that is addressing organic livestock production issues. Ruth Knight consults with a number of organic producers throughout Ontario and has heard a number of concerns related to organic livestock production. The questions posed for discussion in this presentation are: What protocols for outdoor confinement producers will be acceptable to the Canadian Food Inspection Agency in the event of a disease outbreak? Are the measures involved in the bio-security protocols financially feasible and workable? Can other production gains be realized by implementing new practices? What is needed to assist the co-existence of organic and non-organic livestock and poultry production? What needs to happen in Ontario so that quota holders can invest in and thrive in a certified organic poultry business? Will non-quota holders' be limited in their ability to produce certified organic poultry?

About Ruth Knight

Ruth Knight is an independent consultant providing advisory services to farmers who are following a biological or certified organic program. Ruth and her husband have 3 children aged 13, 11 and 9. They operate a farm in the Wingham area where they raise sheep, beef and pasture poultry. Ruth received a Bachelor of Science in Agriculture and Masters of Science from the University of Guelph. Ruth was an executive member of the student group, Agricultural Alternatives, which organized the early Organic Conferences at Guelph. Contact Ruth Knight Consulting at 519-392-7036 or rknight@wightman.ca



About Al Dam

Al Dam is Provincial Poultry Specialist with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) specializing in small flock bio security issues, poultry production efficiencies, humane handling and transportation, and emergency preparedness. Guelph ON al.dam@ontario.ca 519-824-4120 x54326

1.30 pm - 3.00 pm (ADVANCED)

Managing Perennial Weeds in Organic Field Crops **By Mike Cowbrough,**

Mike's session will deal with understanding the biology and identification of many common perennial weed species that impact crop production. Mike will provide a step by step framework aimed at improving your chances of successful identification and then finding the information that allows you determine whether you have a good or bad plant.

About Mike Cowbrough

Mike Cowbrough is the Weed Management Program Lead for field crops with OMAFRA. Mike's main focus is to provide people with the tools to identify weedy plants and to judge for themselves whether the plant is worth managing or actually has some positive attributes. He has been the project lead of www.weedinfo.ca, a website devoted to this vision.

Mike has been involved in weed management research for 14 years, 7 of which have been with the Ontario Ministry of Agriculture, Food and Rural Affairs. He resides with his wife and daughter on the family farm just North West of Guelph, ON.

11.00 am -12.00 pm (ADVANCED)

Management Strategies for Insect Pests of Vegetable Crops **By Cathy McGregor-Smith and Hannah Fraser**

The steps to successful organic production of vegetable crops includes maintaining soil organic matter, using clean seed and healthy transplants, minimizing environmental and nutritional stress, encouraging natural enemies, environmental stewardship and the use of integrated pest management tactics that include monitoring as well as cultural (site selection, crop rotation, sanitation, planting date, tillage, trap crops), mechanical / physical (mulches, traps, barriers, row covers) and / or chemical control strategies to manage pests.

Insect pests are best managed preventatively in organic systems. As a first step, producers need to possess an understanding of what species may be present in a cropping system and an ability to correctly identify both pest and beneficial insects. Growers and scouts must also know the biology and life cycles in order to predict when they are most likely to occur and to plan crop production accordingly. Early detection using various traps or sampling in alternative hosts may allow growers to apply mechanical controls such as row covers before the pest establishes itself in the crop. Monitoring allows growers to implement control measures before populations reach damaging levels. Keeping good records can be useful in developing information on population trends and hot spots.

Healthy plants are better able to resist or tolerate pests. Assuming aspects of crop health have been addressed, cultural controls that minimize opportunities for pest insects should be the number one strategy for growers to implement on the farm. Sanitation involves removal of crop residues following harvest as well as weed control to minimize overwintering sites or alternative hosts. It also includes starting with clean plant material and clean equipment. Crop rotation and site selection are particularly important for soil pests and may slow down the migration of overwintering pests into the crop. Keep in mind that some pests are quite mobile and are capable

of moving several hundreds of metres in search of host plants. Manipulation of the planting date is a tactic that can help growers avoid exposing crops to pests at a vulnerable stage of development. Planting resistant or less preferred varieties should be considered where available. Various other planting techniques including intercropping or trap cropping and growing a diversity of crops may help to reduce damage and spread the risks associated with production of large monocultures. Scale of production may render some of these tactics impractical.

Mechanical and physical controls against are important tools for organic growers. Equipment including traps, vacuums, flaming, mulches, barriers, row covers can be used to reduce insect damage with various levels of success. Knowledge of pest activity and careful monitoring are required.

Intervention with insecticides may be required to prevent unacceptable crop damage, even where other tactics have been implemented. There are a limited number of organically approved pesticides registered for use on vegetable crops in Canada. These include microbial and botanical insecticides, insecticidal soaps, horticultural oils and inorganic products such as sulphur, diatomaceous earth, ferric phosphate (Sluggo) and Surround (kaolin clay based). While others may eventually be available, keep in mind insecticides are meant to complement the pest management toolkit.

Some insect pests can be kept below unacceptable levels by biological controls that include predators, parasitoids and pathogens. To promote natural enemies of pests in the landscape, use care in selecting pesticides (natural enemies are also susceptible to broad-spectrum products) and establish habitats that encourage their numbers and create stability (nesting and overwintering sites, nectar sources, clean water sources, alternative prey, other).

For more information on management strategies for insect pests in organically grown vegetable crops attend the Guelph Organic Conference on Saturday January 24th, 2009. A special workshop will focus on management of several important insect pests of vegetable crops including swede midge, cucumber beetles, Colorado potato beetle, flea beetles and the recently introduced leek moth. The results of new Ontario research relevant to organic production will be presented. Through these examples, participants will develop a better understanding of the lifecycles and biology of pests, critical pest management times, cultural solutions, organically acceptable management tools and the importance of natural enemies in the agricultural landscape.

For those interested in learning more about promoting natural enemies on the farm, visit the organic session of the Ontario Fruit and Vegetable Convention, February 18th and 19th, 2009. OFVC website: <http://www.ofvc.ca/>

About Cathy McGregor-Smith

Cathy McGregor-Smith along with her husband Gary Smith have operated a certified organic farm near St Thomas since 1984. She also worked for Canada Agriculture (Entomology) for 13 years in the 1980's. The focus of that research was Biological control of insects. Trained IOIA inspector (organic inspector) since 2005.

About Hannah Fraser

Hannah Fraser, Entomology Program Lead – Horticultural Crops, Ontario Ministry of Agriculture, Food & Rural Affairs, Vineland, ON

Hannah Fraser is a graduate of the University of Guelph (B.Sc. - Agriculture; M.Sc. - Entomology). Prior to accepting her position with OMAFRA, Hannah worked for several years

with Agriculture and Agri-Food Canada (Vineland, ON) on projects related to the optimization of mating disruption technology in tree fruit and grape. As the provincial entomologist for hort crops, she works with crop specialists and collaborates with industry to identify pest management solutions required for sustainable crop production. Hannah is responsible for monitoring provincial insect issues and the transfer of management information and technology to the Ontario agriculture industry. Her present activities include the development of strategies for the management and/or eradication of several new and emerging pests affecting Ontario agriculture, the coordination of multi-disciplinary research projects, and the evaluation of mating disruption products in tree fruit. Hannah is the co-editor for OMAFRA's HortMatters, an electronic publication delivering timely information to agri-business and growers in Ontario. Currently, Hannah Fraser can be reached in at the OMAFRA office in Vineland, ON at 1(905) 562-1674 or hannah.fraser@ontario.ca

11.00 am -12.00 pm (INTRODUCTION)

Building with Materials from the Earth – straw, hemp, clay, lime, wood, etc.

By Chris Dancey and Tina Therrien

Three Layers of Skin

Our body's skin breathes and requires maintenance and protection. We moisturize it, but it can't be kept in liquid for very long. We know our skin is affected by what we put into our body, as well as what we wear. Many of us prefer natural, organic clothing that can be thought of as the second skin. A broad brim hat and footwear provide protection.

We know that if we wrap our body in plastic or seal our pores, our skin can't breathe. We would be uncomfortable in a very short time and eventually our health would suffer. For our health and comfort, we choose our clothing carefully. We want to regulate our body's temperature and allow transpiration of moisture through our skin and clothing.

Think of your home as a third skin. What materials will make you most comfortable and contribute to your good health?

Earth inspired homes are made of earth and the products of the earth. They transpire moisture from inside and out just as our body's skin does. They are built with natural materials, similar to the way that other living creatures harvest the earth's bounty for their building materials. Our third skin also requires a broad brim hat (roof) and excellent footwear (foundation) for protection.

Earth inspired homes are not wrapped in plastic and they do not rely on mechanical systems to ensure good air quality. They have building official approval and they are currently being built throughout the world. Getting approval will require that you are knowledgeable and convincing. Don't think of the building official as an enemy and the rules as obstacles to be overcome. Understand the rules and prove that you will be building a well-constructed, healthy home.

Materials and Building Methods

Both Chris Dancey and Tina Therrien are advocates for using materials that have undergone as little processing as possible.

How do you choose your materials and method of construction?

First, determine what materials are available locally.

Second, choose the method that best suits your climate and location. There are hundreds of books and articles on dozens of natural building methods. Join the Natural Building Network www.naturalbuildingnetwork.org and use the internet to help with your research. Be realistic and well-informed. Talk to professional natural builders, and to other owner/builders. Take a workshop, or visit as many natural homes as possible before finalizing your design.

Third, know your exact location and suit your design to the unique features of the property. Build what you need – not what you think you want. This takes real discipline and is essential when creating a structure that will truly be your third skin.

Fourth, acquire the skills you will need or hire a professional natural builder.

Fifth, be realistic about the cost of building your home. Natural building won't cost less if you don't contribute your time, which is called 'sweat equity'. Seems that "time is money". However, there are often long term savings in the heating & cooling of an environmentally built home

Another truism is that it does take longer than you think it will and it will probably cost more than you hoped it would.

Best of all you can enjoy working with the local materials from the earth. Like organic farming, you will be able to do a minimum of harm, while creating a healthy, sustainable home with a reduced ecological footprint.

Insulation – Two Approaches

There are many factors that contribute to the effectiveness of a natural insulation method. This presentation will focus on two approaches that work.

Chris Dancy will discuss a system that uses formwork to create the walls. The cavity is filled with natural fiber, such as chipped hemp stalks, wood chips or straw. Clay or lime is used to bind the fiber together.

Tina Therrien will discuss the use of baled straw. There are straw homes all over the world. In Ontario, there are two main styles of building: load bearing, where the plastered bale wall provides both the structure and the insulation of the home, and infill, where a frame is erected first, and bales are inserted as insulation.

Both systems use natural plasters on both the interior and exterior to ensure the walls remain hygroscopic (handle the vapors generated within the house or from the weather) for maximum comfort and good health.

Well designed homes that are built with natural materials reduce heating & cooling costs tremendously. It is possible to have an R-factor of 40, or close to double that of a standard home.

Building your third skin can bring people together for healthy activity. Often buildings are built by communities of family, friends and professionals, somewhat reminiscent of the old barn raising. Inspiration and creativity abound as your healthy home takes shape.



Wil checks the spacer screws to be sure they will keep the plywood sheet straight when it is moved up. The forms are removed immediately after the layers of lime coated HempChips™ are tamped into place. Lime or clay plaster will be applied after the walls are completely dry.

About Tina Therrien

Tina Therrien is a former elementary school teacher, Tina began building with straw bales 10 years ago when she became a partner in Camel's Back Construction, Ontario's first straw bale construction company. She is currently sole proprietor of the company, and continues to build, plaster, teach workshops, and do presentations across the province. Last year Tina was invited to go to France to teach some workshops as well.

A board member of the Ontario Straw Bale Building Coalition for several years now, Tina does many public presentations each year at events, including the annual Building Inspector's Conference. Co-author of 'More Straw Bale Building', one of the key organizers of the International Straw Bale Building Conference in 2006, and a presenter at last year's Timber Framers' Conference in Montebello, she remains actively involved in the straw bale movement. Tina Therrien, Owner/builder of Camel's Back Construction

Web: www.strawhomes.ca; email: strawbus@auracom.com

About Chris Dancey

Chris Dancy and her husband Wil are owner/builders. They began researching the use of hemp as a building material a dozen years ago and have experimented with both clay and lime as binders. Hemp, wood shavings or straw provided the mass. The walls of their timber frame home in SW Ontario were formed with HempChips™ and lime binder. Test plots of industrial hemp have been grown on their certified organic farm.

For professional information on the natural building techniques in Chris' presentation visit: www.cabanabis.com ; www.naturalbuild.ca ; www.econest.com For general info visit: www.naturalbuildingnetwork.org

Raising Organic Venture Capital by Tom Manley, Homestead Organics

Most businesses fail in the first 2 years because of insufficient capital for start up & growth. Let us examine the capital requirements and financing of small businesses. A business needs plenty of capital, or cash injection at the beginning of the business for fixed assets, working capital for operations, business start-up costs, and initial debt servicing costs.

Fixed assets include buildings, land, vehicles, and equipment. These acquisitions present plenty of options such as buying used versus new equipment, obtaining purchase financing versus leasing, time sharing someone else's processing facility, sub-contracting to custom growers/processors, equipment sharing and joint ownership, as well as unforeseen construction costs and fees.

Working capital is often underestimated and will limit the capacity to grow. It is defined as the cash tied in one cycle including accounts receivable and payable, inventory and supplies (by the way, it is important to keep your suppliers happy), rent, mortgage, utilities, wages for the cycle, reserves for opportunistic bulk purchases, and reserve for repairs and maintenance. It is wise to make all possible efforts to reduce your need for working capital by negotiating longer terms with your suppliers and shorter terms with customers. You can also lower your working capital by reducing your inventory, buying inventory for just-in-time delivery, making mortgage payments at the end of the month instead of the first of the month, contracting annual maintenance fees instead of reacting to sudden breakages, and negotiating wage hold backs with interest with your staff.

You can manage your customers by requiring payment in advance, payment on delivery, or providing early payment discounts. You must be very vigilant in collecting from your customers such as applying late payment penalties in order ensure good cash in-flow to sustain your business. Contrary to popular belief, customers could be your enemy! As this is business, do not treat customers like your friends because your accounts receivable will drain your cash flow and your sanity. You must build the high cost of AR into your price with credit verifications, interest costs on late income, and internal collection efforts and external agencies. Bad receivables can easily represent 1% of your sales volume so have a tight policy and be persistent. There is help with AR from Export Development Canada who provides accounts receivable insurance which can cost up to 1% of sales, but it provides peace of mind. They can provide it selectively for sales in Canada, the USA, overseas, or specific customers. You will need thorough credit checks on customers and they cover 90% of uncollected AR. But it can avoid the cost of a collection agency that typically charges 30-40%.

You will need lots of capital to start your business such as incorporation and other legal fees, initial marketing, logo, website, stationary, labels, packaging, staffing costs for the first few months, consultants, training, recruitment, operational procedures, product design and testing, first months of operating expenses, deposits on leases, supplies, equipment, contractors. You also need start-up capital for debt servicing until the business becomes cash flow positive.

In managing your capital, you will learn to observe financial ratios. The return on investment is like interest rates; it is the annual compounded return on your capital investment. The debt to equity ratio matches mortgages and long term debt against your equity; the maximum is 2:1. This is important because the bank does not want to own your business. The current ratio matches

current liabilities versus current assets to ensure that you have enough liquid assets to cover your obligations for a year; the target is 1:1 or better.

In finding sources of capital, consider your personal savings, commercial banks, SBLA, Agricultural Adaptation Council, regional economic development corporations, and private investors. In order to build up your personal capital, you should get a good education, a good job for 15 years, lots of skills and experience, and save all your money. Consider walking into your small business with \$100,000 of personal savings. Keep your house & RRSPs out of the business. Don't put all your eggs in one basket.

When you visit the commercial banks, all they want is security, liquid security, and full security with personal loan guarantees or co-signers. They do not want to finance more than 50% of the business. Most businesses fail and they know it? Therefore, your business plan only gets you in for a chat! The good news is that they offer the best interest rates if you qualify. The government lenders are no different from banks, but they take more risk. FCC is now available to agri-business, on farm processing, and food processors. BDC usually only takes on a business after 2 years of existence. They are more flexible with risk but cost a little more.

The Small Business Loans Act, now called the Canada Small Business Financing Program provides federal govt protection for small businesses loans, but farms are not eligible. They finance 90% of capital assets up to \$250,000 and guarantee 85% of your loan. They may require 25% personal guarantee and they cost 2% registration fee and interest of prime +3%. You can apply through your bank, but many banks don't want to use it because it is laborious & risky. Banks will use it on a mortgage against fixed assets.

Junk Mail is a good source of operating lines of credit. Every bank and credit card will solicit you by offering promotions for small businesses with low interest rates, credit cards with checks, and a small line of credit. Application is by mail so there is no business plan. They are actually designed as a personal credit card for your business. But manage your credit wisely by watching your current ratio. And they make your credit file look risky.

Leasing is a viable solution as manufacturers are more willing to lend than the bank because they can re-possess the equipment and sell it again. Also look for capital leasing companies. But leasing usually requires a couple of years of experience to apply. The amount may not cover the full cost of installation. The lease is usually short term such as 3-5 years which makes the monthly payments very high. The lease is not a debt; therefore, it protects your debt-equity ratio. The lease payment is fully tax deductible and not depreciated. Some leases have flexible terms, such as front or rear loading.

There are economic development corporations established in every region or county. They are the bank of last resort and they take more risk. You must spend the time getting turned down by the banks before you approach them. They act as a lender or an equity partner. Their interest rates are higher and they want job creation projects, which often makes a very small business unattractive. But they often have small grants available for business plans and feasibility studies.

There are grant programs out there, but they rarely provide enough money to start a business. Grants are usually provided for marketing, research, and business development but rarely for fixed assets and general start-up. Contact the Agricultural Adaptation Council for rural development programs in Ontario. The Industry Research Assistance Program (IRAP) provides up to \$15,000 for applied & commercial research. The federal government provides significant scientific research and experimental development (SR&ED) tax credits even if you do not pay tax. It is a great source of money for small businesses that are performing legitimate product

development and experimentation. You need help from an accountant or an SR&ED consulting firm (which costs money).

Your best sources of easy private capital are your family, friends, customers, suppliers, and supporters. Let's face it: everyone invests their savings somewhere; you have to compete with the securities market. Don't be shy. Be professional, prepare a prospectus, and make a sales pitch as an investment, not a call for help, nor a personal charity. Keep it small and it is best to wait till you have experience and have shown results. Private loans are easy to manage with a simple promissory note, a fixed rate of interest and payment term, and no guarantee. Losses can be tax deductible by the lender. Stagger your payout schedule to ease cash flow. Interest paid is tax deductible by you, taxable for them and you have to issue a T5. Select an interest rate between bank deposits and bank loans so that you both win. Give them no access to the company's affairs.

The second option for private capital involves other shareholders but you must be incorporated. Shares make the debt-equity ratio look better and allow you to leverage private capital for bank debt: 1 for 1. Common shareholders are the real owners and assume full risk. You need a shareholders agreement and they can join your board of directors. Common shares have variable market value, which makes buyouts very complicated. Preferred Shareholders are the fake owners with lower risk; they are actually lenders in disguise and have priority over real owners in case of liquidation. They are not involved in voting, management, or the board of directors. Their shares are of fixed value and they can be paid out at any time. They are usually promised a fixed annual dividend rate. Dividends are paid to all shareholders according to the resolutions of the board. They are taxable at the company, but earn a dividend tax credit for the investor. There are also lots of other equity issues that are beyond the scope of this workshop such as convertible debt to equity, angel investors (silent or active), accredited investors, security rules, ethical investment funds.

In building your company, a common question is to incorporate or not. Incorporation allows you to separate your business and personal assets and liabilities. Most lenders, lessors and grantors want incorporation but they may still need to sign personal guarantees. Incorporation protects you from general creditors, but not banks with personal guarantees. You file separate income tax reports with separate due dates. The small business income tax rate is lower than the personal rate. A corporation owner has flexible income options: dividends versus wages where dividends earn a dividend tax credit.

About Tom Manley

Tom Manley grew up on the family dairy farm in Eastern Ontario. Eager to see the world, he left for school and obtained a BSC in Computer Science at the Collège Militaire Royal in St-Jean, Québec. He served as the telecommunications officer at the Canadian Forces Base Montreal. Tom moved on to become the network engineer for the lottery system at Loto-Québec. He then joined Bell Canada and served as a network sales engineer for several years. In 1995, he moved to marketing and was the project leader for the development and launch of the Bell Sympatico Internet Service.

Around 1985, Tom's parents, Murray and Carrie Manley converted the family's conventional dairy farm to organic field crops and founded Homestead Organics. Over time, they serviced other organic farmers with grain processing and livestock feed. In 1997, Tom took over the grain and feed processing at Homestead Organics and moved it to the feed mill in Berwick. **Homestead Organics** is eastern Canada's leading organic farm service and supply company. Their mission is to serve and develop organic agriculture. They provide organic field crop farmers with whole grain marketing including storage, cleaning, and packaging and the supply of organic feed, seed, and farm inputs.

1.30 pm - 3.00 pm (ADVANCED)

Opportunities in raising sustainable cattle-grasses, carbon, feed quality, profits.

By Bryan Gilvesy

Concern for the environment may be opening up new opportunities for Ontario farmers. This session will look at the Y U Ranch, operated by Bryan Gilvesy and his family, which is an 350 acre grass based cattle operation in Norfolk County, Ontario. Texas Longhorn cattle are calved and raised, with meat being sold directly to consumers. The ranch operates with sustainability as its' hallmark. This talk will focus on how sustainable farming practices and production of environmental benefits can satisfy emerging consumer trends and provide for long term farming success.

It is useful to first define sustainability and for this discussion we will use a definition, contained within the 1990 farm bill by the United States Congress, that says that “sustainable agriculture means an integrated system of plant and animal production practices having a site specific application that will, over the long term:

- satisfy human food and fibre needs
- enhance environmental quality and the natural resource base upon which the agricultural economy depends
- make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls.
- sustain the economic viability of farm operations; and
- enhance the quality of life for farmers and society as a whole.

Many environmental enhancements have been done on the farm, but we will explore the use of native tall grass prairie, not only as drought season pasture, but as habitat for grassland birds and native bees. Future adaptation of this system may allow farmers to become active in carbon sequestration activities in the future.

The marketing objective of the farm is to link with consumers and bring the full retail dollar to the farm gate. Development of customers loyal to the brand is essential for long-term success. Environmental initiatives are a key component in defining the value proposition for Y U Ranch beef and building consumer trust in the brand.

Measures of productivity are not traditional, with emphasis on self reliant cattle, minimum cash inputs, maximizing contributions from nature and focus on creating products that meet demands of leading edge consumers. (Product not productivity)

Finally, the discussion will zero in on emerging trends and opportunities, not only for local sustainable food, but maximizing on farm carbon offsets under developing cap and trade schemes.

About Bryan Gilvesy

HBA, Richard Ivey School of Business, University of Western Ontario

Proprietor – Y U Ranch

Chairman - Norfolk County ALUS Pilot Project

Y U Ranch, an award winning farm operation, located in Norfolk County, Ontario, has become a leader in sustainable agriculture and environmental responsibility. A great deal of the ranch's environmental accomplishments have been due to the Alternative Land Use Services or "ALUS" program, which fosters innovation and working with nature in a positive new way. As proprietor of the ranch, Bryan has become an advocate for food system reform and the positive impact this reform can have on the environment and community health. The Y U Ranch produces Local Food Plus certified beef, dealing directly with consumers in southern Ontario. Recipient of the 2008 Candian Agri-food award of excellence for environmental stewardship.

1.30 pm - 3.00 pm (ADVANCED)

Integrated Fertility Program For Organic Fruit Production

By Pat Johnston

I.F.P. for Organic Fruit Production includes:

- Pome fruit- apple and pear
- Stone fruit- cherry, peach, nectarine and plums
- Grapes- wine and table
- Strawberry and raspberry.

A) SOIL ANALYSIS

- cation exchange capacity
- soil and buffer pH
- phosphorous and saturation P %
- % base saturation
- sulfur
- micronutrients
- organic matter

B) SITE SELECTION

- traditional fruit, vine or berry area and cultivars
- soil type and fertility
- frost drainage and antifreeze
- south slope aspect for fruit and vines
- soil drainage and water holding capacity
- buffer zones from conventional production
- irrigation

C) ORGANIC TRANSITION

- most productive vs least productive planting
- most fertile vs least fertile planting
- most vigorous or established vs stunted or damaged planting
- disease or pest resistance
- disease or pest pressure
- mineral uptake vs rootstock and cultivar selections

D) FLOWER POWER

- perennial production
- fruit bud initiation
- biennial bearing
- tree, vine or plant establishment and precocity
- crop load management
- orchard floor management

E) NITROGEN MANAGEMENT

- commitment to an integrated program of nitrogen and crop load management
- soil organic matter and green manure preplant programs
- plant establishment(Kelpak) and competition(mulch or mechanical)
- annual compost to establish plantings
- legumes for floor management

F) FARM ORGANISM

- fruit set and fruit bud initiation and nitrogen availability
- Organomex 6-2-4 for fruit set and fruit bud initiation
- pome fruits vs stone fruits
- vines and canopy vigor
- berry crops

G) SOIL INPUTS

- pH and calcium and magnesium maintenance from calcitic lime, dolomitic lime and gypsum
- phosphorous from Calphos
- cations from SOP and/or KMag
- boron from Spraybor Natural
- zinc and manganese from sulfates
- compost and compost teas
- soil mineralization and soil fungi, algae and bacteria
- low C.E.C. soils and humic acids and fulvic acids

H) SOIL PRACTICES

- preplant plow downs in perennial systems vs crop rotation
- nitrogen fixing legumes or legume mulches
- mulching mowers and soil aerators
- what about replant sites?

I) FOLIAR INPUTS

- fertility efficiency and management
- Organomex 6-2-4 prebloom and post bloom and based on crop load
- Organic formulated boron from Spraybor Natural
- Organic formulated zinc from Zincmax Natural
- Organic formulated calcium from Calcimax Natural
- raw sulfates- Epsom salts and manganese sulfate
- Kelpak for transplants and foliar gibberellins and cytokinens
- compost teas for disease suppression and soil mineralization

J) INPUTS AND SOLUTIONS

- on farm trials
- good product inputs with efficacy
- ecological solutions

K) TISSUE ANALYSIS

- pome and stone fruit
- vines
- berries

L) CLIMATIC EFFECTS

- winter damage- K and Zn
- spring and early summer effect mineral uptake
- warm and moist
- cool and dry
- cool and wet
- summer drought

M) KEY NUTRIENTS AND PHYSIOLOGY

- pome fruit- Zn, B, Mn, Mg, N, P, Ca and later K.
- stone fruit- Zn, B, Mn, Mg, N, P, Ca and later K but timings different
- vines- Zn, B, Mn, Mg, P, Ca and later K:Mg
- strawberry- N, Zn, B, Mn, P, Ca and Mg on deficient soils
- raspberry- Zn, B, Mn, P, Ca and later K.

N) MINERALS AND DISEASE CONTROL

- pome fruit- K and S powdery mildew, Zn, Mn, Si and scab
- vines- K downy mildew, S powdery mildew, Ca botrytis, Mg GSN

O) MARKET

About Patrick Johnson

BSc Agr OAC 1975. Thirty years experience with mixed farm production of tree fruits, vegetables, sheep and grains by organic transitional or organic methods. Twenty years experience as a horticultural nutrition and integrated pest management consultant. Associate of A & L Canada Labs East. Twelve years on contract with N. M Bartlett Inc. of Beamsville Ontario as their nutrition consultant for Specialty Crops across Canada. Operates Georgian Bay Orchard Services now specifically consulting to organic fertility and pest management program development. In conjunction with Appletop Farm field trials; Georgian Bay Orchard Services distributes Virosoft a biopesticide for tree fruits and Organomex 6-2-4 an organic foliar fertilizer for organic fruits, vegetables, vines and greenhouse crops. In the winter months he works as a fertility technical representative on tropical crops in central America.

1.30 pm - 3.00 pm (ADVANCED)

Green Claims – The Good, The Bad & The Ugly

Chair: Dr. Harriet Friedmann

Panelists: H el ene St. Jacques, Lauren Baker and Rob Grand

The corporate food sector has been quick to reflect trends such as "green" and "local" into their marketing strategies. The idea of food citizenship helps us navigate the supermarket and our daily lives. Explore ways to shop, cook and eat that reflect ecological sustainability and build our food culture.

“Green” marketing in the new era of shrinking expenditure and consumer confusion. Insights into how to sort through the myriad of new marketing strategies and to consume wisely and sustainably.

As consumers, I am totally sympathetic. We are being bombarded with advertising every waking minute by companies that have ad budgets larger than the GDP of most small countries. We are constantly multi-tasking, we are busy at work, we don’t have time to investigate every product, every claim, every company. So what can we do to be more conscious mindful consumers?

About Dr. Harriet Friedmann

Dr. Harriet Friedmann - Member of Toronto Food Policy Council, Professor of Sociology and International Studies, University of Toronto. Teaches sociology and international politics of food; research on food and agriculture from many aspects, historical and present, including farming systems, consumption patterns, power and accumulation at local, national and global levels.

About Lauren Baker

Lauren Baker is the director of Sustain Ontario - the Alliance for Healthy Food and Farming. She is a food researcher and activist with over ten years of experience building local food economies, implementing sustainable agriculture projects and addressing food policy. Lauren has a PhD from York University and is a lecturer at the University of Toronto.

About H el ene St. Jacques

H el ene St. Jacques, president INFORMA Market Research is a senior social marketing research and communication expert with over 25 years of experience designing and conducting projects in solid waste management issues, new “green” products, local and organic food, water conservation and the creation of sustainable communities.

About Rob Grand

Rob Grand, owner of Grassroots Environmental Products, Canada’s largest green lifestyle retailer. With 2 Toronto stores and an online store providing earth-friendly products since 1994. Rob is a leading environmental advocate, spokesman and educator.

Overview of Holistic Management Financial Planning

By Fran & Tony McQuail

Holistic Management is a management system growing out of the work of Allan Savory, who as a wildlife biologist and wildlife preserve manager realized that management systems that do not include the whole team of players and quality of life goals are doomed to be inadequate. Holistic Management Financial Planning is used to help move toward a Holistic Goal which has brought together social, environmental and economic considerations into a Quality of Life statement. Profit is planned first and then creativity and brainstorming is used to explore ways to improve income and reduce expenses to develop a plan which can achieve that profit.

In doing financial planning expenses are sorted according to whether they are inescapable, wealth generating or maintenance. The “chain of production” in each enterprise is evaluated to determine where there is a “weak link”. In planning expenditures the focus is on those which address the weak links in different enterprises. Money spent on weak links is considered wealth generating because it will make the biggest improvement to income. There is no point in spending more money to grow grass if the weak link in the retail beef operation is lack of customers. The Weak Link analysis helps focus thinking and guide decisions.

Other Holistic Management testing questions which are helpful during the financial planning are Gross Profit Analysis, Marginal Reaction and Money and Energy-Source and Use? These can help determine which enterprises contribute most toward meeting the overhead expenses of the farm, which show the best return for time or money invested and whether the sources of money and energy are internal or debt, sustainable or depleting.

Profit can be taken in a number of ways. It can be in increased assets, decreased liabilities or taken out as cash. Net worth is calculated at the start of the plan and then again at the end of the plan to help determine if the planned profit is reached. Once a plan has been developed that achieves the desired profit it can be put into action. One of the key insights of Holistic Management is to recognize that the plan will likely not work perfectly. So the plan is monitored monthly and if it starts to go awry either controlling for the problem or replanning may be necessary. The holistic goal and the planned profit are the target and the plan is adjusted to fit the circumstances to keep moving toward them.

The key steps in Holistic Management Financial Planning are

- 1 – Calculate your starting Net Worth.
- 2 – Plan income
- 3 – Set Profit
- 4 – Plan and Sort Expenses
- 5 – Prioritize weak link
- 6 – Do Cash Flow
- 7 – Estimate Ending Net Worth
- 8 – Monitor, Control, Replan

Prior to this year’s planning it is important to evaluate existing enterprises to assess if they produce a gross profit. We identify the weak link in each enterprise. In holistic management we think of each enterprise having a “chain of production” that is made up of “resource conversion”, “product conversion” and “market conversion”. In other terms we might think of it as growing,

harvesting and selling or for a non farmer, sourcing materials, processing them into a product and selling the product. At any one time one of these “links” in our chain of production will be the weakest. We need to focus our attention on that link. There is no point in spending money to grow more grass if we don’t have enough cattle to eat what we are growing now. If we can’t sell what we are producing there isn’t much point producing more until we strengthen the marketing link. During this pre-planning evaluation period we can also brainstorm new income enterprises and assess them. Once we have decided what enterprises we want to include in the coming years annual plan we can get started.

We calculate our Net Worth at the start of the year because this is the bench mark by which we can determine whether we have achieved our “profit” goal. The net worth is a statement that shows our assets and our liabilities.

Next we plan the income from the various enterprises. Based on this planned income we set aside the amount of “profit” we want to achieve in the coming year. Profit is our return to investment and management not our farm draw which is our return to our labour.

We then plan our expenses and sort them according to whether they are wealth generating, maintenance or inescapable. Wealth generating expenses are ones that will help solve a weak link in an enterprise which will allow it to improve income. Maintenance are expenses that are done to keep our existing enterprises and overall operation functioning. Inescapable expenses are things like taxes and loan repayments that are fixed in value and which we are legally or morally obligated to pay this year.

We give priority to wealth generating expenses that will help address a weak link and improve income. We seek to use our creativity to minimize or eliminate maintenance expenses as we develop our expense plans for the year.

We then look at how the plan will cash flow with income and expenses month by month to ensure that we will have either enough income or enough credit to prevent shortfalls that could derail the plan. If necessary we may look at shifting income or expenditures to get the cash flow to work.

Once we are comfortable with these steps we estimate what our ending net worth will be with this plan. This will tell us whether we have achieved the profit that we planned in step 3. Profit isn’t just cash in hand at the end of the year. We may have increased our livestock inventory. We may have paid down debt. We may have taken out money for a family holiday. Or we may be ending the year with an increase in the bank account. All of these count as “profit” and some will contribute to an increase in our net worth. If we have not ended the year with the profit we planned in step 3 then it is time to go back over the plan and use our creativity to further reduce expenses or take a hard look at whether our profit figure needs to be revised. But we first apply our ingenuity to alternative ways to make the plan work that reduce expenses.

Once we are satisfied that our plan cash flows and generates the income we plan we can put it into operation. Now begins the important monthly process of monitoring the plan. We have our monthly income and expenses planned for the year. At the end of each month we calculate our actual income and expenses and enter them on our planning chart. We will quickly see if we are getting off our plan and we can immediately look at how to control for this change or if necessary replan. By monitoring frequently we can respond quickly and adjust in ways that keep taking us toward our holistic goal. We start the year making the best plan we can. And by monitoring and replanning how that plan works in the real world we can end the year with the best actual plan for the circumstances.

About Fran & Tony McQuail

Fran & Tony McQuail have farmed in SW Ontario for 35 years. They developed a mixed livestock and vegetable/apple operation that sells direct to the consumer. Their introduction to Holistic Management (HM) was in 1995. They credit HM with giving them the tools to plan a month long summer vacation the next year and to improving their profitability. They are active in the Ecological Farmers Association of Ontario. They are becoming Holistic Management Certified Educators and have courses in HM scheduled all across Ontario this year. They can be contacted at mcqufarm@hurontel.on.ca. or <www.meeetingplaceorganicfarm.ca>

3.30 pm - 5.00 pm (ADVANCED)

“Is this grain crop really organic?” – a forum to answer all your questions about organic inspection



Moderator: David DeCou, OMRI

IOIA panel: Monique Scholz, Garry Lean, Margaret Scoles



Annual inspection by a qualified inspector (verification officer) is an integral part of the organic certification process. Inspectors are the critical link between the producer and the consumer who counts on the certified label to ensure organic integrity. The inspector is often the only representative of the certification agency actually on-site at your farm. That inspector is the ‘eyes, ears, and nose’ of the certification agency. The inspector’s report of what they see is crucial to your certification. This informal panel will include brief presentations by three experienced inspectors from Canada and the US, with ample time for producers to ask their questions.

Topics will include:

- What is unique about inspecting organic—a process based certification system, rather than a product based system?
- Who ensures that inspectors are knowledgeable, competent, and trained to inspect your farm?
- What should you expect at inspection from a professional inspector?
- How do inspectors detect fraud? What do they look for?
- How are sampling and residue testing used in organic certification process?
- Inadvertent use of prohibited materials is a common reason for decertification. How can producers verify that products are approved for organic use?
- Tips to prepare for inspection and how to avoid common problems that inspectors see during inspection.

About the Presenters

Monique Scholz of Quebec describes herself as “an agricultural technician who is passionate about organic farming and re-designing the food system”. She has been inspecting almost fulltime since 1990, with the exception of a two year break in which she managed a regional certifier. She serves as an IOIA Trainer and an IOIA Board member.

Margaret Scoles serves as the Executive Director of the International Organic Inspectors Association (IOIA), in Montana, USA. She has been an organic inspector for over 20 years. IOIA is a membership based organization dedicated to ensuring that organic really is organic. IOIA has provided organic inspector training world-wide for 15 years.

Contact info: www.ioia.net; ioia@ioia.net; ph:(406)436-2031

Garry Lean P.Ag.was raised on a mixed farm near Lindsay, Ontario. His farm experience has ranged from the current small-scale cattle and organic vegetable production to a 500-acre dairy farm. He first became involved in organic vegetable production in 1973 in South Australia. Garry completed a Soil Science degree at Guelph and has a Master's degree in Education from Central Michigan University. He taught for 25 years at the local community college. His courses included agriculture and ecosystem management.

Currently Garry acts as a facilitator for the Introduction to Ecological Agriculture course and the Transition to Organic Farming Course with the Ecological Farmers Association of Ontario (EFAO) and Canadian Organic Growers. He and his wife Margaret operate EcoSystems etc – providing a wide range of training and educational services for organic producers and processors. EcoSystems etc is developing Canadian Organic Standards workshop materials for IOIA, GOG and OTA.

Garry is a member of the International Organic Inspectors Association (IOIA) and is the immediate Past Chair of their Board of Directors. He has inspected all farm types and processing operations, and conducted over 2000 organic inspections during the last 20 years. He is an active trainer with IOIA for Crop, Livestock and Process Courses. “Extra time” is spent in providing organic farm consulting – with a focus on whole farm systems.

About the Moderator

David DeCou is the Executive Director of the Organic Materials Review Institute (OMRI) in Oregon, USA. He raised certified organic vegetables for 20 years. OMRI's mission is to provide professional, independent, and transparent review of materials and processes to determine their suitability for organic operations.

Contact info: www.omri.org; info@omri.org ; ph:(541)343-7600

3.30 pm - 5.00 pm (ADVANCED)

Overview of Holistic Management Planned Grazing –

By Tony & Fran McQuail

Holistic Management Planned Grazing is a system for handling our land and forage to improve the soil, increase productivity and develop healthy plant and animal communities. There are some terms we need to understand as we explore planned grazing. Severe Grazing occurs when a grazing animal bites off the growing parts of the plant (eats most of the leaves of the plant) down close to the ground. After a severe grazing the plant has to draw energy from its' root system to send up new leaves and regrow. Taking energy from the roots cause a die back of the below surface root system in something of a mirror image of the amount taken off the top. The Recovery Period is the length of time it takes for the plant to regrow its top and replace its root system. The Grazing Period is the length of time the animals stay in a paddock. If a plant is grazed again before it can fully recover then it is being Overgrazed. In a situation where animals are continuously in a pasture they tend to overgraze the most palatable plants and allow plants

they do not like to become over mature. Over grazed plants become smaller and weaker as their root reserves are exhausted and not replenished because of the over grazing. In systems where livestock move between multiple paddocks plants can still get overgrazed. If animals stay in a paddock too long they can overgraze the regrowth that is starting. If they return too soon they may graze regrowth before the plant has fully recovered.

Holistic Management Planned Grazing differs from other grazing systems in several key ways. First, planning is based on estimated recovery periods to ensure that plants are able to maintain and improve their root health and strength. Second, planning is done on a Grazing Chart which allows one to keep many different management considerations in mind and see all the paddocks on one sheet of paper over the whole grazing season. Third, special time constraints like calving, breeding, wild bird nesting, dangerous weeds or family holidays can be noted on the chart so that they are easy to remember and plan for. Fourth, planning is done backward from the various constraints using the planned recovery period to ensure that the livestock end up “at the right place, at the right time, for the right reasons”.

When we were first exposed to Holistic Management Planned Grazing it seemed pretty complex but as we’ve become comfortable with it we have learned how to plan for long family summer vacations and feel more confident that we can ensure that we can meet our animals forage needs even if we find ourselves in a drought or some other challenge during the grazing season.

How does it work? First we record our decisions about how many animals we plan to graze, will they be one or several herds and set up our Grazing Chart with the paddocks available to graze. We mark on the chart any management concerns – either ones that effect all paddocks like the timing of a holiday and breeding or things that just effect single paddocks like a poisonous plant. We record paddock availability – maybe a paddock is flooded in the early spring but is available later in the summer. Maybe it is being cropped but the stubble can be grazed in the fall. We determine the productivity of the various paddocks.

To figure out paddock productivity we need to figure out how much forage we have been taking off our land in a grazing season. Take the number of animals you have been grazing, convert them to standard animal units SAU’s (there are charts to help you do this so you convert 5 ewes into a SAU or a 1000 lb steer into 1 SAU) multiply this time the number of days of grazing. This will give you the total SAU days of grazing you have taken during the past year. This is often written as the total Animal Days or AD’s of forage. When the total Animal Days of forage are divided by the total number of acres being grazed we obtain the figure for the average Animal Days per Acre, ADA’s. If our paddocks are fairly uniform we can use this figure when figuring out the prospective forage available in each paddock. If there is high variability then we can use this figure to develop individual ratings for each paddock. Rate average paddocks with the average ADA and poorer paddocks with a lower value and better paddocks with a higher value. We then use each paddocks ADA rating multiplied by it’s size to calculate the total animal days of forage available in each paddock.

Next we determine our recovery period. This is the length of time we think it will take severely grazed plant to regrow its roots and leaves. Don Campbell recommends letting plants recover to the point where they are ready to flower. In our area using a 35 day recovery for fast growth periods and 70 day for slow growth is probably a good starting point. As you gain experience with your own land you may vary this – it may also vary from year to year. Once we have our recovery period we can figure out our grazing period. We divide the recovery period by the number of paddocks we have less one paddock. If we are planning for a 35 day recovery period and have 6 paddocks then the calculation would be $35 \text{ days} / (6-1) \text{ paddocks}$ or $35 \text{ days} / 5 \text{ paddocks}$

or an average of 7 days of grazing per paddock. If we want a shorter grazing period to keep plants from being overgrazed before the animals move out we will need to have more paddocks. We can subdivide our paddocks with temporary fencing to create more so that the animals spend a shorter time in each paddock while letting the grass have the desired recovery time in all the paddocks.

Most plants will not start to regrow for at least 3 days so if we have a Grazing Period in a paddock of 3 days or less during periods of rapid growth plants should not be overgrazed before the animals leave the paddock. When growth is slow because of lack of moisture or cool weather we need a longer recovery period. Because the plants are regrowing more slowly a longer grazing period of 6 days would still prevent overgrazing. Let us use a 35 day recovery and 3 day grazing period during fast growth and a 5 day grazing period and 70 day recovery for slow growth periods. The formula for figuring out the number of paddocks needed to achieve an adequate recovery period is Recovery Period divided by grazing period plus 1. Paddocks for fast growth would be $(35/3) + 1 = 12 + 1 = 13$. During slow growth $(70/5) + 1 = 14 + 1 = 15$.

Once we have determined the number of paddocks we are working with, the availability of forage in each paddock and the desired grazing and recovery periods we can start our planning. We start by planning backwards from the constraints we identified earlier. I'm going to be away for a weeks holiday. I want the animals in paddocks D & E which are close to the barn and be easily accessed by gates off the barn yard so the person doing chores while I'm away should have no trouble with the pasture move. I want to move them into D the day before I start my holiday. I mark my start date on the grazing chart in the D row and mark off the grazing period. I ask the question – "What paddock do I want to move them from to get them into D?" Once I've answered that question then I mark off the grazing period and the dates for that paddock and ask what paddock I want to move FROM to get to it. In this way I plan my moves back from special timing constraints during the pasture season until I get to the expected beginning of the grazing season. We can check our chart and make sure we aren't returning to paddocks until they have their 35 day recovery period. We can also check that the various paddocks should have the required forage to feed the number of animals by looking at their animal days of forage rating. When growth starts to slow down we can move to our longer recovery period by increasing the grazing period in each paddock.

When the grazing season starts we begin marking the actual grazing periods in the different paddocks with permanent fine tip markers. Now we can see how the actual season is working out and adjust our plan if necessary. Maybe the grass didn't green up as quickly as our plan. When we are ready to start grazing we can start later on the chart in the paddock that will still get me where I want to be the day before my holiday. We can also monitor how the plan is working by checking the regrowth in the already grazed paddocks. If the first paddock is fully recovered by day 30 and the forage in the last two paddocks is getting over mature they can be bypassed and taken for Hay and we can return to the first paddock.

Using the grazing chart and monitoring the recovery in the paddocks is a good way to keep track of the pastures performance and to make appropriate decisions about when and where to move animals in response to the variable growth that we see each season. Over time it helps us build organic matter and biological activity in our soils. It helps us know where animals have been and know when it is ok to return to a paddock. It lets us monitor how the season is going, maximize amounts of high quality forage and feel confident of how much feed we have ahead of us. Holistic Management Planned Grazing has been a useful tool for our farm and family.

For a more in depth exploration see Part II Holistic Management Grazing Planning in the “Holistic Management Handbook, Healthy Land, Healthy Profits” by Jody Butterfield, Sam Bingham and Allan Savory. PP 55 – 113.

About Fran & Tony McQuail

Fran & Tony McQuail have farmed in SW Ontario for 35 years. They developed a mixed livestock and vegetable/apple operation that sells direct to the consumer. Their introduction to HM was in 1995. They credit HM with giving them the tools to plan a month long summer vacation the next year and to improving their profitability. They are active in the Ecological Farmers Association of Ontario. They have been experimenting with grazing for 35 years on their farm trying a variety of fencing materials and portable fencing systems as well as the Holistic Management Planned Grazing Chart.

3.30 pm - 5.00 pm (ADVANCED)

Production Opportunities: Organic Medicinal Herbs - Conservation, Saving Popular Species-at-Risk -

By Kerry Hackett

As the popularity of Herbal Medicine increases, so too does the gathering of medicinal plants from their natural habitat. The commercialization of herbal products together with the ever-increasing destruction of wild areas has put some of our most beloved herbs on the endangered list. The focus of this talk will be two-fold: one, to look at a number of those herbs-at-risk which could be cultivated by organic farmers and gardeners and two, to provide information to help the consumer protect these plants for future generations.

For farmers and gardeners: we will look at the requirements and cultivation methods of a number of herbs at-risk as well as the challenges involved in growing these plants commercially or in the garden.

For consumers: we will look at viable substitutions for herbs at-risk should cultivated sources not be available.

About Kerry Hackett

Kerry achieved the UK equivalent to a BSc. in Herbal Medicine after five years of full-time study in both Alberta and British Columbia. She also holds a diploma in Veterinary Homeopathy and has worked with both domestic and wild animals. In addition, Kerry is a member of the National Institute of Medical Herbalists (UK), the Ontario Herbalists Association (Past President) and the Veterinary Botanical Medicine Association. She is also a certified Master Gardener and runs a full-time practice in Stratford, Ontario. Kerry may be reached at: khackett@cyg.net

3.30 pm - 5.00pm (INTRODUCTION)

Farming and Climate Change: Building Resiliency into your farming system

By Phil Beard & 1Lucie Vincent, Ken and Martha Laing, Murray and Wilma Scott

Objectives of the workshop:

1. To outline the climate trends that are being observed in Ontario
2. To outline what farmers are doing to develop a more resilient farming system

The workshop will profile 3 speakers.

A climate trends specialist from Environment Canada: **Lucie Vincent** has more than 20 years of experience with Environment Canada. She has a degree in mathematics from Sherbrooke University in Québec, and a master degree in statistics from York University in Toronto. She is presently working as a research climatologist for Environment Canada. Her main duty involves research in climate data homogenization and in climate trends and variability. She has published several articles in scientific journals such as *Atmosphere-Ocean* and *Journal of Climate*. She has organized workshops and chaired a number of sessions at meetings and conferences held by the Canadian Meteorological and Oceanographic Society and American Meteorological Society.

Temperature and precipitation trends in Ontario, 1950-2007

The National Climate Data Archive of Environment Canada contains the official weather records and climate observations for the country. Surface temperature and precipitation observations are available from the archive for studying climate change in Canada. Recent studies have indicated that the annual mean temperature have increased by about 1.3°C during 1950-2007. An increase of about 7% was observed in annual total precipitation during the same period. However, the temperature warming and precipitation increase are not necessary consistent in neither time or space, and considerable variability is observed from year to year. The objective of the presentation is to provide an overview of the climate trends in Canada for 1950-2007, and for several locations in Ontario. Trends in a number of climate indices related to agriculture such as the growing season and the maximum number of dry days will be presented. Future trends predicted by the climate models will also be discussed briefly.

Ken and Martha Laing, Orchard Hill Farm: Ken and Martha own an 80 acre horse powered organic farm near St. Thomas, Ontario. The farm produces 5 acres of vegetables, small fruit, flowers and herbs for a 160 family Community Shared Agriculture Venture.

Many organic farming techniques allow us to adapt and to mitigate climate change but in other situations it was with a conscious decisions to take action or in some cases to not act that actually was most effective.

The Laing's have designed their farming system to help build resiliency into their operation.

- irrigation system in place for vegetable crops
- strip cropping, longer rotation, pasture incorporated into rotation, composted manure, very little land left uncovered over winter 0-2.5%
- woodlot thinning to reduce stress on trees
- 10 acre wetland
- natural fence rows

Mitigation:

- farm with horses instead of fossil fuels
- car operates on carbon neutral fuels
- farm organically
- moving farm off grid
- ice powered cooling for vegetables

Murray and Wilma Scott: own and operate a 200 acre cash crop farm located near Wingham , Ontario. This farm has been in the family since 1856. The Scott's also have a 50 acre woodlot on their property.

Over the last few years the Scott's have undertaken a number of conservation measures to reduce the potential for soil erosion and to reduce sediment buildup in the cold water municipal drain that flows through their farm. They have also installed a stormwater management system on their farm to help manage the runoff from intense rainfall events and rapid snowmelt events. They have retired land along the watercourse that is not suitable for agriculture and that will help buffer the watercourse to protect aquatic health. The municipal drain has been restored as a natural cold waterstream.

A number of wetlands have been restored to help slow the runoff and allow it to percolate into the groundwater and help maintain baseflow in the watercourse.

Windbreaks and shelterbelts have been planted to reduce the potential for wind erosion. The Scott's have managed their woodlot for ecological integrity and optimum economic returns for over 40 years.

The Scott's have opened their farm to other farmers to come and see what they have done. Farm tours are organized throughout the year. Over the last 3 years over 200 people have toured their farm.

3.30 pm - 5.00pm (INTRODUCTION)

Land Trusts and Your Farm's Future: New opportunities to save the farm and help the new farmers access land

Pat Learmonth, Farmlands Program Manager, Kawartha Heritage Conservancy

Melissa Watkins, Farm Succession Program Manager, FarmStart

Bruce Mackenzie, Acting Executive Director, Ontario Farmland Trust

Peter Coughler, Farm Succession Planning Lead , OMAFRA

As it becomes less frequent that family farms are handed down through the generations, we must start to think about farm succession planning in a new way. We need new options that can keep family farms in operation and at the same time help new farmers overcome one of the biggest challenges in entering farming in Ontario today: access to land. The Ontario Farmland Trust, Kawartha Heritage Conservancy and FarmStart have been working together to find better ways to protect farmland through new approaches to transferring the farm.

In this 1.5-hour workshop, you will learn: What type of farming enterprise might fit a land trust organization's checklist? How does organic agriculture fit with land trusts? Can a farmer

permanently protect the farm and not lose his/her shirt? Are there benefits to conservation easements for a new generation of farmers trying to access land? The interactive workshop will allow you to explore whether a land trust can help in your farm succession planning.

Whether you're a new farmer looking for land or an experienced farmer approaching the end of your farming career, it's always the right time to be thinking about farm succession.

About Pat Learmonth

Pat Learmonth is the Farmlands Program Coordinator at the Kawartha Heritage Conservancy. Pat has a degree in Environmental Studies from Trent University and a law degree from the University of Western Ontario. Her environmental interests focus on working to ensure the economic, environmental and social sustainability of Ontario farms for the future. Pat is the Manager of the Farmlands Program at Kawartha Heritage Conservancy and is also the Environmental Farm Plan Representative and Workshop Leader for Peterborough County. She serves on the Peterborough Stewardship Council, the Kawartha Choice/Farm Fresh committee and the Greater Peterborough Area Agricultural Action committee. She and her husband run an organic farm on 100 acres near Peterborough.

About Melissa Watkins

Melissa Watkins is FarmStart's Farm Succession Program Manager. Raised on a small farm in Nova Scotia, Melissa's interest in food production began early when she came to realize that her barnyard friends eventually made their way to the dinner table. She studied for one year at the Nova Scotia Agricultural College before moving to Ontario to complete degrees in Natural Resource Management (B.Sc.) and Land Resource Science (M.Sc.) at the Ontario Agricultural College at the University of Guelph. Melissa has over ten years experience working with land trusts in Ontario, including seven years on the board of the Ontario Land Trust Alliance. Melissa was part of the group that formed the Ontario Farmland Trust in 2004 and was its Executive Director for three and a half years.

About Bruce Mackenzie

Bruce Mackenzie is the Acting Executive Director of the Ontario Farmland Trust. Bruce has extensive experience in the non-profit sector in the areas of project management and fundraising. Bruce worked for ten years in the conservation sector with several organizations including the Wildlands League, the Save the Oak Ridges Moraine Coalition and Ontario Nature and has also served as Chair of the Coalition on the Niagara Escarpment. He has a B.A. from York University and a Masters of Environmental Studies degree from the University of Waterloo, with a focus on land stewardship and farmland protection.

About Peter Coughler

Peter Coughler is the Succession Planning and Business Agreements Program Lead with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) based in Brighton. Peter obtained a Diploma in Agriculture (Dip. Agr.) from Kemptville College, a Bachelor of Science in Agriculture (B.Sc.(Agr.) majoring in agricultural economics from Macdonald Campus-McGill University and a Master of Science (M.Sc.) in agricultural economics & business from the University of Guelph. He also has his Professional Agrologist (P.Ag.) designation. Peter has had a variety of work experiences, including teaching farm management courses at Macdonald Campus—McGill University, manager within government and operating a dairy farm. He is involved with the Canadian Farm Business Management Council's Beginning Farmers Team and the International Farm Transition Network (IFTN).

SUNDAY, January 25th, 2009

9:30 to 11:30 am (ADVANCED)

Faith in organic agriculture: What Values Do We Bring to the Land?

By Stephen Scharper

In this session, we will explore various Western approaches to land--land as economic resource, as farmland, as recreational tool--and contrast these with some salient alternative understandings, e.g., Aldo Leopold's "biotic community," Thomas Berry's "communion of subjects," Hindu understandings of divine nature, and certain aboriginal perspectives. The group will be then invited to share their own values, spiritual and otherwise, that they bring to the land, and how this relates to their understanding of organic agriculture.

About Stephen Bede Scharper

Stephen Bede Scharper holds a Ph.D. in religion from McGill University and is Associate Professor at the Centre for Environment and Centre for the Study of Religion at the University of Toronto. He is cross-appointed with the Department of Anthropology (UTM) and adjunct professor with the Toronto School of Theology.

He is author of *Redeeming the Time: A Political Theology of the Environment* and co-author of *The Green Bible*, and has served as faith and ethics columnist for the *Toronto Star* and spirituality panelist for the CBC. He lives in Toronto with his wife and son, and his research focus is on integrating spirituality, justice, and ecological integrity.

9:30 to 11:30 am (INTRODUCTION)

Protecting Farmland Inside and Outside of the Greenbelt

By Ella Haley & panel: Pat Learmonth, Melissa Watkins, Bruce Mackenzie Peter Coughler, Robert MacDermid

As it becomes less frequent that family farms are handed down through the generations, we must start to think about farm succession planning in a new way. We need new options that can keep family farms in operation and at the same time help new farmers overcome one of the biggest challenges in entering farming in Ontario today: access to land. The Ontario Farmland Trust, Kawartha Heritage Conservancy and FarmStart have been working together to find better ways to protect farmland through new approaches to transferring the farm. In this 1.5-hour workshop, you will learn: What type of farming enterprise might fit a land trust organization's checklist? How does organic agriculture fit with land trusts? Can a farmer permanently protect the farm and not lose his/her shirt? Are there benefits to conservation easements for a new generation of farmers trying to access land? The interactive workshop will allow you to explore whether a land trust can help in your farm succession planning.

Whether you're a new farmer looking for land or an experienced farmer approaching the end of your farming career, it's always the right time to be thinking about farm succession and protecting our best places to grow food.

With the growing awareness of peak oil, climate change and the environment and health problems caused by conventional industrialized farming, strong organic farming and local food movements are emerging. People want to know how their food is grown and even to participate in growing food through community shared agriculture.

Just when we are becoming aware of how important it is to protect local foodsheds, prime farmland outside of the Greenbelt that surrounds the Greater Toronto Area is being gobbled up by “leapfrog development”. This development pressure on farmland makes it tempting for farmers to sell their land, but makes it unaffordable for new farmers.

Growing the Greenbelt in Brant County

By Ella Haley Assistant Professor, Athabasca University/Adjunct Professor, Laurier Brantford
Inquiries: ehaley@gmail.com or 1-866-412-5071

What chance do counties experiencing leapfrog development pressures really have to grow the Greenbelt? Brant County is one of the counties that was left out of Greenbelt, and now faces severe “leapfrog development” pressure. Outside speculators and land banking companies tied to foreign investors have purchased thousands of acres of farmland in Brant County.

The Ontario government is open to growing the Greenbelt, but only if a local municipality initiates the request. This restrictive condition places Brant County at a disadvantage. Municipal politicians who are under the most pressure from developers will be the least apt to grow the greenbelt in their communities. Developers heavily lobby Brant County councilors, and also try to guarantee support for their proposals by funding the election campaigns of some of the councilors.

If Brant County were to grow the Greenbelt, the Ontario government may still thwart any efforts to protect farmland by allowing the construction of a 400 series highway (known as a “developers’ highway” through this “new” Greenbelt. This would have negative impacts on farmland, the farming community, natural areas and wetlands.

Sustainable Brant is a grassroots group in Brant County that is calling on the Ontario Government to not leave the decision to grow the Greenbelt in the hands of local councils. The government should consider requests from citizens and conservation authorities to grow the Greenbelt in Brant and other counties facing development pressure. In addition, Sustainable Brant calls for public transit rather than the expansion of highways in the Greenbelt.

Banning Corporate and Union Donations at the Municipal Level

By Robert MacDermid, Associate Professor of Political Science, York University

What if the Ontario government were to reform the Municipal Election Act to reduce the influence of developers on municipal councils? MacDermid documents how election campaigns in communities just outside of Toronto (e.g. Vaughn and Pickering) are largely funded by corporations, most of them developers. These politicians then support policies that permit sprawl. Ajax and Toronto actively discourage corporate and union donations, and Toronto’s executive committee voted to ban them, though the decision must still go before city council. MacDermid is calling on the Ontario government to reform the Municipal Elections Act and ban corporate and union donations at the municipal level. This means that candidates who oppose sprawl development would no longer be at a disadvantage in financing their campaigns.

<http://www.thestar.com/News/GTA/article/569277>

<http://www.socialjustice.org/index.php?page=funding-city-politics-municipal-campaign-funding-and-property-development-in-the-greater-toronto-area>

About Pat Learmonth

Pat Learmonth is the Farmlands Program Coordinator at the Kawartha Heritage Conservancy. Pat has a degree in Environmental Studies from Trent University and a law degree from the University of Western Ontario. Her environmental interests focus on working to ensure the economic, environmental and social sustainability of Ontario farms for the future. Pat is the Manager of the Farmlands Program at Kawartha Heritage Conservancy and is also the Environmental Farm Plan Representative and Workshop Leader for Peterborough County. She serves on the Peterborough Stewardship Council, the Kawartha Choice/Farm Fresh committee and the Greater Peterborough Area Agricultural Action committee. She and her husband run an organic farm on 100 acres near Peterborough.

About Melissa Watkins

Melissa Watkins is FarmStart's Farm Succession Program Manager. Raised on a small farm in Nova Scotia, Melissa's interest in food production began early when she came to realize that her barnyard friends eventually made their way to the dinner table. She studied for one year at the Nova Scotia Agricultural College before moving to Ontario to complete degrees in Natural Resource Management (B.Sc.) and Land Resource Science (M.Sc.) at the Ontario Agricultural College at the University of Guelph. Melissa has over ten years experience working with land trusts in Ontario, including seven years on the board of the Ontario Land Trust Alliance. Melissa was part of the group that formed the Ontario Farmland Trust in 2004 and was its Executive Director for three and a half years.

Bruce Mackenzie is the Acting Executive Director of the Ontario Farmland Trust. Bruce has extensive experience in the non-profit sector in the areas of project management and fundraising. Bruce worked for ten years in the conservation sector with several organizations including the Wildlands League, the Save the Oak Ridges Moraine Coalition and Ontario Nature and has also served as Chair of the Coalition on the Niagara Escarpment. He has a B.A. from York University and a Masters of Environmental Studies degree from the University of Waterloo, with a focus on land stewardship and farmland protection.

About Peter Coughler

Peter Coughler is the Succession Planning and Business Agreements Program Lead with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) based in Brighton. Peter obtained a Diploma in Agriculture (Dip. Agr.) from Kemptville College, a Bachelor of Science in Agriculture (B.Sc.(Agr.) majoring in agricultural economics from Macdonald Campus-McGill University and a Master of Science (M.Sc.) in agricultural economics & business from the University of Guelph. He also has his Professional Agrologist (P.Ag.) designation. Peter has had a variety of work experiences, including teaching farm management courses at Macdonald Campus—McGill University, manager within government and operating a dairy farm. He is involved with the Canadian Farm Business Management Council's Beginning Farmers Team and the International Farm Transition Network (IFTN).

9:30 to 11:30 am (ADVANCED)

The Next G.E. Crops In The Pipeline - How Farmers Can Deal With What's Coming

Facilitated by Lucy Sharratt

Coordinator, Canadian Biotechnology Action Network.

Lucy will briefly list the GE crops grown in Canada and the new crops and traits expected in the coming years. The workshop will include the expertise of Tom Stearns, President, High Mowing Organic Seeds, Vermont and Ann Slater, organic farmer, Ecological Farmers Association of Ontario regarding contamination risks with GE sugar beet and corn and mitigation strategies. We will invite participants to share questions, concerns, strategies for preventing contamination by GE crops.

There are new contamination risks from GE facing organic farmers in Ontario – How can farmers protect and prepare their crops?

- Genetically engineered sugar beet has now been introduced and is being grown in Ontario with potential contamination risks for growers of organic chard and table beets.
- Genetically engineered herbicide tolerant alfalfa has already been approved for growing in Canada and could be commercially released soon.
- With corn ethanol, GE corn acres are increasing along with contamination risks for organic corn growers.
- Biotechnology corporations are already researching corn with GE traits for ethanol production, traits that will need to be segregated from our food system.

About Lucy Sharratt

Lucy Sharratt works as Coordinator for the Canadian Biotechnology Action Network (CBAN) in Ottawa www.cban.ca. Lucy has worked as a researcher and campaigner with organizations concerned about genetic engineering since 1999. Lucy was the Coordinator of the Safe Food/Sustainable Agriculture Campaign at the Sierra Club of Canada and worked as a researcher for the BioJustice Project of the Polaris Institute in Ottawa. She also worked as Project Manager for "Voices from the South", a project of the Working Group on Canadian Science and Technology Policy which focused on issues raised by genetic engineering in developing countries, and as Coordinator for the International Ban Terminator Campaign. Author of reports and book chapters on related issues, Lucy obtained a Masters from the Institute of Political Economy at Carleton University where she researched the regulation of genetically engineered foods and crops in Canada.

Lucy Sharratt, Coordinator

Canadian Biotechnology Action Network (CBAN)

Collaborative Campaigning for Food Sovereignty and Environmental Justice

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9:30 to 11:30 am (INTRODUCTION)

BIODYNAMICS SEMINAR A

BioDynamic agriculture: where & when is organic farming in need of a next step?

By Ferdinand Vondruska

Brackendale, British Columbia, Canada

For the past one hundred years, the earth, and in particular our food producing soils, have been exposed to unimaginable attacks, resulting in total exhaustion and devastating crop failures. Hand in hand go changes of weather patterns, the rising of sea levels, the melting of polar caps and glaciers and so forth.

We are at a threshold of fundamental changes and, if not counter balanced, entire segments of humankind will undoubtedly perish.

Dr. Rudolf Steiner, Austrian philosopher and scientist (1865-1925), indicated that substantial weather pattern changes are in the making and by about the year 2000 will become extremely destructive. IF, he said, certain precautions are taken, those changes can be balanced. However, he continued, IF humankind continues in its egotistic, self-centered and greedy way, precarious catastrophes will follow of which the outcome may be rather uncertain. Present day science (based on the most spirit denying basis) will not be able to help solve this trend, Steiner warned! For that reason, he gave a course on Bio-dynamic Farming (Koberwitz, 1924) attended by several hundred farmers, gardeners, scientists, industrialists, city as well as village folks. BD has grown steadily ever since and is practiced on thousands of farms, gardens and forests throughout the world.

By 2009 it has become clear that we are on collision course with our ecosystem. We must start the healing process NOW! Farmers have become close to the most pollution contributing 'industrialists'. What once was an all encompassing culture, AGRICULTURE, has become: AGRI-BUSINESS, based on mineral oil (fertilizers, fuel, crop sprays, etc.).

In order to re-integrate the hundreds of death brining chemicals that have been used on farmlands and to re-vitalize the soil, Dr. Steiner has given a number of healing plant remedies that can quickly enliven exhausted or dead soils. It is through living soils that environmental catastrophes can be averted. Let us remember that soils, like our bodily skin, are organs of perception, encounter, observation, transformation for a living earth.

Nature has become far too exhausted. We cannot hope that the so-called 'natural ways of arming and gardening' will get us out of this ever worsening situation. Natural farming is, of course, the first step, but MUST be followed by a soil healing method that takes the spiritual forces living inside it into account. Bio-Dynamic Farming, Gardening & Forestry WILL bring immediate results with top quality crops.

About Ferdinand Vondruska

Ferdinand U. Vondruska, started his Bio-dynamic life at the Zurich Waldorf School in Grade 4 when he was taught seeding wheat all the way to the making of bread. During the ten years at the Waldorf School, he attended gardening and farming classes every Wednesday afternoon for four

hours. His study at Emerson College, Forest Row England under Professor Dr. Herbert Koepf, a world renowned Bio-Dynamic capacity, where he got his Diploma.

For 17 years, Ferdinand was also a Waldorf teacher before he settled with his wife Marcela in Paradise Valley, BC, Canada, surrounded by the beauty of forests, mountains and the serenity of the wild Cheakamus River. Ferdinand has established himself here since 1985 and has actively been involved with studies and practices of Bio-Dynamic Preparation Making and composting for gardens, fields and forests. To date, he still teaches and practices Bio-Dynamic preparation making and composting to heal the soils that surround us. He also teaches BD courses in Mexico, the US, Finland, Canada and many other countries. Through his traveling experiences around the globe and the many countries he has visited and lived in, he has devised a method of Bio-Dynamics that can quickly restore polluted and exhausted soils in almost any geographical area.

1:00 to 3:00 pm (ADVANCED)

BIODYNAMICS SEMINAR B

A fresh look at the Rudolph Steiner Agricultural Lectures & their relevance today

By Steffan & Rachel Schneider

About Rachel and Steffan Schneider

Rachel is a trained Waldorf teacher and taught at the Lexington Waldorf School in Boston. After we met and our kids (2 sons, 25 and 21 yrs old) were a little older she founded and administered our CSA and was part of the vegetable operation. Today she is the director of our educational programs.

Steffan has an Ag. Degree from the Justus von Liebig University in Germany, was part of the team that founded Nokomis Farms, spent from 1983 'til 1989 in Wisconsin. He joined Hawthorne Valley in '89 as the herd manager and now manages the whole enterprise (at least he tries).

1:00 to 3:00 pm (INTRODUCTION)

Ecovillages & Sustainable Communities - Get Involved In 21st Century Food Security

By Shane Snell & panel



In the 21st century, just about everything we do in our culture will be drastically transformed as the 'great transition' emerges to reveal an ecologically-sound, low-energy society. This difficult societal transition will severely affect all sectors, especially agriculture, but the unavoidable reality is that global warming and energy descent are the REAL 'non-negotiables' as we move forward, and so the simple choice before us is to plan for change and alter our course, or just wait for Nature to set the agenda. This presentation

introduces the concept of choosing an exciting proactive option - the design and development of sustainable human-scale communities, including Ecovillages, to ensure food security.

Our food production and distribution systems, as well as our purchasing and consumption habits, exhibit a high level of vulnerability to the converging human-induced crises of energy depletion, destabilized ecosystems, and unsustainable social frameworks. These three crises have already begun to manifest themselves and will increasingly threaten our food security systems in the near future.

Energy Shortages

Fossil fuels and other energy resources are used extensively in the modern seed-to-table food system, in

- soil amendments, pesticides and seed production
- farm machinery, equipment and fuels
- transportation networks and fuels
- electricity, from distribution centres to home preparation

A Destabilized Natural Environment

Food production completely depends on viable relationships within the natural environment and, increasingly, modern industrial societies are compromising these agricultural support systems, by

- Sacrificing prime farmland for development, and degrading topsoil
- Overspending water budgets
- Destabilizing the climate, causing extreme weather events
- Neglecting to design for resilience and diversity within food systems

An Unsustainable Social Environment

Food production and distribution activities do not occur in isolation from the larger social context, and are therefore vitally interdependent on many support systems within the human-built environment, making them vulnerable to several issues plaguing our modern industrial societies, such as

- The catastrophic loss of farmers, food-growing knowledge, and agrarian communities
- Unsustainable levels of development, consumption and population growth
- The liability of inevitable economic meltdown
- An increasing threat to critical community services and institutions, posed by energy shortages, extreme weather events, social inequity, and conflict

The Sustainable Communities and Ecovillage Response

The sustainable communities movement endeavours to address the vulnerabilities connected to energy descent, ecosystems degradation, and threatened social structures, simultaneously, and therefore it demonstrates the most authentic, holistic approach to date, inspiring many people to participate in this transformation of human society and increase food security in their local communities.

Sharing photos from his extensive research tour across the US and Canada, along with stories of the continuing development of Whole Village, Shane will show how



Ecovillages are attempting to model:

- Low-impact design for human settlement
- Local, organic food production
- Earth restoration initiatives
- Holistic education programs
- Local, sustainable economies
- Participatory community-scale governance
- Social inclusion and diversity
- International solidarity projects and peace activism

Come find out how you can get involved!

About Shane Snell

Shane Snell is Property Manager and Sustainable Communities Coordinator at Whole Village (www.wholevillage.org), a sustainable farm community and aspiring Ecovillage located in the Town of Caledon, near Orangeville. Shane develops and implements educational outreach initiatives, including his own research tour of the US and Canada to document the sustainable communities movement. He spent two years on the road in his veggie-oil truck and solar-powered camper, visited over one-hundred sustainability projects, created an internet BLOG (<http://ecotourofnorthamerica.blogspot.com>), and now delivers presentations to share how people across the continent, and the world, are responding to the challenges of energy depletion and climate change. (email- shane@wholevillage.org)



1:00 to 3:00 pm (INTRODUCTION)

Make your career in organics - opportunity, cash-flow, challenges

By Ann Clark and Martha Gay Scroggins

About Martha Gay Scroggins

Martha Gay Scroggins has been developing a new producer cooperative called Local Organic Food Team (LOFT) in the Waterloo area. She is currently developing plans for the Guelph Center for Urban Organic Farming and is on the board of Farmstart. She has been an organic farmer for over 30 years, here and in developing countries.

About Simon Jacques

Simon Jacques began his farming career as an apprentice at Greenfields Organic Farm in Campbellville, Ontario. He continued at Greenfields for 5 years, eventually becoming the field manager. For the last 4 years, Simon has leased 200 acres of organic farmland from the Ignatius Jesuit Centre in Guelph, where he grows organic beans and grains. Simon currently works for Ecocert Canada, and Organic Certification Agency.

About Ali English

Ali is currently working for FarmStart to develop training programs and resources for new

farmers. After completing a master's degree in Agroecology, Ali spent three years running a market garden CSA with two friends. She has since worked with FarmStart and Everdale's Farmers Growing Farmers program to develop business planning courses for new farmers. Email: ali@farmstart.ca Web: www.farmstart.ca

About Caitlin Hall

Caitlin Hall is a young farmer growing certified organic vegetables, fruit, herbs and flowers on borrowed land north of Guelph. After a handful of apprenticeships on farms in Southern Ontario, Caitlin started reroot organic CSA in 2007 which now provides fresh produce to 50+ shareholders as well as the weekly Elora farmers market. She is also the Ontario Youth Advisor for the National Farmers Union and is active and interested in a variety of food and farming issues.

Email: reroot.organic@gmail.com Web: www.reroot.ca

About Ann Clark

E. Ann Clark is an Associate Professor in Plant Agriculture, at the University of Guelph, with teaching and research responsibilities in the management of organic and grazing production systems (eaclark@uoguelph.ca). She co-coordinates the B.Sc.(Agr) Organic Major program and a planned Urban Agriculture market garden at the University of Guelph.

Noon to 3.00 pm (INTRODUCTION)

VIDEO & DISCUSSION ROOM - focus is on the latest GMO-related advocacy videos & issues

Led by GENEAction

Welcome & Introduction by GENEAction followed by the film.
Terminator Tomatoes (5 minutes)

A 5 minute film about the dangers of biotechnology, altered seeds and produce. Using stop-motion animation, puppets and miniature sets, the film tell the story of a small-time farmer who gets too involved with a chemical corporations idea of a tomato. The film humorously address the issues and effects of genetically modified foods and questions where this potentially dangerous technology is headed.

FILM SCREENING & DISCUSSION – “The World According to Monsanto” with GMO updates and Q&A Led by GENEAction and the Canadian Biotechnology Action Network" (1hr 49min)

Based on a painstaking investigation, "The World According to Monsanto" puts together the pieces of the companys history, calling on hitherto unpublished documents and numerous first-hand accounts. The new documentary, directed by independent filmmaker Marie-Monique Robin, includes remarkable footage from the fight in Canada against Bovine Growth Hormone and reveals some of the most pressing and relevant tragedies behind genetically engineered crops.

Monsanto

- is the largest seed company in the world (accounted for 20% of the world's commercial seed market in 2006).
- Owns the seed planted on approximately 90% of the GE crop acres planted in the world • sells the top selling global herbicide Roundup (glyphosate).

- Owns the patent and research on Terminator technology (Monsanto bought Delta & Pine Land in 2006) - Terminator seeds are genetically engineered to be sterile after first harvest to stop farmers from saving and reusing seed.

- Monsanto now accounts for over 57% of the US cotton seed market.

(ETC Group)

More information on Monsanto can be found at www.cban.ca/Monsanto

Lucy Sharratt comments on some film content - 2min.

Break - 10 minutes

Part 2: 45 minutes.

Q&A, GENEaction and Lucy Sharratt - 40 minutes

Wrap up - 5 minutes

Presented by GENEaction and Canadian Biotechnology Action Network.