

1990 REAP conference on sustainable vegetable production

by Ray Watson President REAP-Macdonald

On January 25th, the 1990 REAP conference on Sustainable Vegetable Production was held at Macdonald College. The event was jointly organized by REAP MACDONALD and REAP-CANADA. The conference was attended by over 140 people and was a great success. To date, little emphasis has been placed on sustainable systems for vegetable production so this conference offered participants an excellent opportunity to be acquainted with this field. Information was exchanged on a wide range of sustainable farming techniques throughout the day at the displays, in the workshops and between sessions.

The conference got underway with Denis LaFrance, the director of the Centre de Developpement d'Agrobiologie du Quebec (CDAQ), who talked about soil and organic master management. Mr. LaFrance has 15 years experience teaching biological agriculture and currently runs an experimental organic farm in Sainte-Elizabeth-de-Warwick. In his talk, Mr. LaFrance noted that the basic fertilizer used in biological agriculture is some form of organic matter.

The two main goals of incorporating organic matter in the soil are as follows: (1) to directly furnish the nutrients the plants need to grow in both mineral and organic forms, and (2) to condition the soil in order to increase its fertility, or in other words, to increase its ability to grow crops. The organic matter is broken down in two ways: mineralization (easily broken down material such as young plants and manures); and humification (hard to break down material like straw, dead leaves and wood chips).

Under the proper conditions (pH, aeration, etc.) good quality humus will be formed and will impact positively on the soil structure (increasing the retention of water and minerals, increasing aeration, etc.) this reserve of humus in the soil may make the difference between high fertility (good yields) and poor to mediocre results. Some techniques which allow for a good balance between mineralization and humification include crop rotation, green manures, composting, manure management and the incorporation of mineral and organic fertilizers coupled with good tillage practices.

Mechanical Control

Leon Guertin, an agronomist with the Ordre des Agronomes du Quebec and a professor at the Institute de Technologie en Agriculture(ITA) at St. Hyacinthe, gave an excellent

presentation on mechanical control of weeds. He discussed a wide range of weeding implements which can be used for vegetable production systems and went over the pros and cons of their use. Some of the advantages of mechanical weeding were: breaking of the soil crust (especially in soils prone to crusting or in dry periods) to encourage aeration while removing the weeds; increasing the penetration of water during rains or irrigation; and especially killing weeds which are not controlled by other means.

Interseeding

Chantal Foulds, who is working on her M.Sc conducting on-farm research in vegetable interseeding systems, and Roger Samson, REAP-Canada President, gave an interesting talk on interseeding systems. Roger discussed interseeding systems that have been developed for use with cereals and corn and their potential adaptation for use in vegetables crops. Chantal discussed the various growth habits of vegetables and how interseeding systems must be designed to work with these differences in mind. The vegetable crops can have differences in plant canopy, the length of time in the field, the row spacing and the number of times the crop will be harvested. The species to be interseeded is usually sown 4-5 weeks after the main crop has been planted. Some examples of interseedings include vetch with snapbeans, oats with tomatoes, soybean with sweet corn and white clover with root crops. Chantal also presented the results of the 1989 REAP On-Farm Research Trials on broccoli and cauliflower interseedings which found hairy vetch to be a promising interseeding species.

Rotation

A presentation on crop rotation was presented by Pierre Sauriol, who is the regional advisor for vegetable production and organic agriculture for the Chateauguay region. Why include crop rotations in your management regime? Rotations allow for a continuously changing environment thus reducing the risks of building up large populations of pests. In monoculture an environment is created which is favorable for certain pests (insects, nematodes, weeds and disease) and unfavorable for many beneficial and neutral pests. Continuous monoculture does not allow the soil to regenerate and subsequently its fertility decreases steadily. Rotations using cereals, green manures and legumes allow us to preserve and supplement the organic matter content of the soil thus maintaining or improving its fertility.

Panels

Other workshops were presented by Luc Brodeur (insect control), Denis LaFrance (green manures) and Dr. Stuart Hill (organic gardening). We also heard about the experiences of two organic farmers, Norbert Kungl (Walton, N.S.) and John Moore (Baltimore, Ont.), who talked about their farms and the techniques which they use.

The day concluded with a panel discussion concerning on-farm research. The panel was chaired by Dr. Katrine Stewart (horticultural professor at Macdonald College) and consisted of Norbert Kungl (organic vegetable farmer), Chantal Foulds (REAP-Canada,

on-farm researcher) and Luc Brodeur (Director of the Reseau de Depistage). Many aspects of on-farm research were discussed, from the perfect cooperator to the perfect researcher and everything in between.

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The 90 page bilingual proceedings of the conference is available for \$7.50 (postage and handling included). Write to: 1990 REAP-Conference, Box 125, Ste. Anne de Bellevue, Que., H9X 1CO

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