

## Organic Production - Some Thoughts and Considerations

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Across the state, organic production of specialty crops is on the increase, particularly on small farms and direct market operations. Over the past year I have had opportunity to interact with a number of organic growers here in the state. This year we are developing a number of very targeted organic vegetable projects here at Virginia Tech, and in collaboration with growers. Organic growers are a group with a lot of optimism and hope for their industry, which is indeed enjoying steady market growth. Currently, Virginia has two very active growers associations the "Virginia Association for Biological Farming" (<http://www.vabf.org/>) and the "Appalachian Development Association" (Abington VA (276)-623-1121), both with strong memberships. Additional links for sustainable agriculture as related to Virginia, and other related groups, can be found at the government SARE web site: <http://www.sare-va.vt.edu/links.php>.

For some growers the decision to "go organic" is a very philosophical and idealistic one, for others it is strictly about marketing. For most organic growers I've met, it's a little of both. Regardless of motives, the challenges are there to produce crops without chemical fertilizer and pesticide inputs. In my mind several important field production issues face organic growers. One is provision of adequate plant nutrients, with nitrogen application of primary concern. Weed competition enhances this problem. Second and third are insect and disease control. Weed control is a critical issue for many growers, but there are mechanical and other techniques to keep weeds in check provided time and labor is there. Insects and diseases are more problematic. Also keep in mind, variety selection is a key inter-related factor in these problem situations.

Currently, many new hopeful organic products exist on the market to help address some, but not all production problems. Little is known with regards to controlled studies of the efficacy of many of these materials, and further, their future as accepted materials in the National Organics Program. No doubt some materials will have great utility, others may border on being snake oil, or perhaps they have varying degrees of effectiveness, but are not economically viable. What we do know is that these materials are often more expensive than standard chemical approaches. However, the hope of all organic producers from a marketing standpoint is that the price of organic products will makeup for the extra cost of organic control methods.

Addressing production problems for an organic system is complex at best. For example, nitrogen availability to plants depends not only on what, when and how much has been applied by the grower, but includes many unseen interactions between soil organisms, their respective species populations and their environment. This involves a host of factors, to name a few: soil type, organic matter, previous crops grown, soil moisture and drainage, and temperature. Crop management by timing of planting and harvest to avoid pests, and avoiding nighttime irrigations are examples of cultural methods to reduce problems. Good pest management not only includes knowing what to spray that is organic, but involves good timing as well, and an understanding pest life cycles to preempt damage and forecast threshold levels for control.

Virginia Tech Department of Horticulture is taking a strong lead in research and teaching in sustainable production of horticulture crops, particularly vegetables. For years Dr. Ron Morse has been conducting cutting edge research in cover crop and no-till systems for vegetable crops in Virginia. Outcomes of his work include a modified no-till planter that can penetrate and plant through the thickest of cover crops, and successful system development for both pumpkin and

potato crops. Current research conducted by Dr. Morse this year includes no-till, fully organic potatoes and tomatoes. Treatments include use of cover crops, organic nitrogen sources and organic pest control products. In addition, we are collaborating on other studies: broccoli, cauliflower and colored pepper organic production systems. Of special note, in spring 2003, our Department is planning a new course entitled "Organic Horticulture". It will be team-taught, with an emphasis on biological farming. With time it will be developed into a web-based course, and other courses should follow.

The future looks bright for growers interested in organic vegetable production. Hopefully as new products and cultural systems are developed through industry and university research, acreage potential for growers and volume of quality produce will increase, resulting in even greater market opportunities.

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