

Breaking New Ground

An Exploration of the Feasibility of Implementing
Sustainable Agricultural Practices on Conventional
Vegetable Farms in Rhode Island

Blake Andrews

Abstract

The purpose of this thesis is to assess the possibilities for improving the environmental sustainability of Rhode Island's conventional vegetable farms.

The thesis focuses on four problems which cause Rhode Island conventional vegetable farming to be unsustainable: 1. Soil erosion in excess of soil rejuvenation. 2. Continuing reliance on noncycling sources for nutrients. 3. Increasing ineffectiveness of pesticides, especially insecticides. 4. Increasing pollution from agricultural pesticides and fertilizers. For each of these, the current farming practices which contribute to the problem are discussed, and sustainable alternatives which can be substituted for current practices are analyzed. Twenty specific sustainable alternatives are discussed, many of which are taken from Rhode Island's organic farming movement.

Finally, the thesis discusses the practical feasibility and likelihood of adoption of each alternative. Of the techniques examined, cover cropping, contour cropping, weed suppression techniques, and Integrated Pest Management have the best chance of increasing in Rhode Island. Increased use of no tillage, alternative nutrient sources, farm waste composting, manual removal of pests and decoy crops is unlikely to happen under current conditions.