



## Individual/Program POW Logic Model Template

**Name of Program:** Pest Management for Fruit and Vegetables  
**CSREES Goal:** An Agricultural System that is Highly Competitive in the Global Economy  
**Staff Member(s):** George Hamilton, Amy Ouellette, Steve Turaj, Nada Haddad, Alan Eaton, Cheryl Smith  
Occasional participation at present time by Geoffrey Njue, Dot Perkins, Seth Wilner, Tom Buob, Sadie Puglisi, Tina Savage, Carl Majewski, Rachel Maccini (PAT Coordinator)      Logic Model written and submitted by George Hamilton and Amy Ouellette

### Situation Statement:

Agricultural Resources Specialists and Educators teach New Hampshire farmers to handle pest problems while:  
1. reducing use of chemical pesticides      2. minimizing crop production costs      3. maintaining crop quality and yield

Integrated Pest Management is an approach to pest control that relies on common sense practices rather than depending exclusively on pesticides. IPM uses information about pests' life cycles for control, with fewer hazards to people and to the environment. The primary goal of IPM is finding the cause of pest problems. **Insects, pathogens, weeds and vertebrate pests are a constant threat to the profitability of NH farms.**

For many crops, the marketplace tolerates very little or no pest injury. Since 1945, chemical pesticides have offered easy solutions to pest problems, and growers have over-used them, with resultant higher costs and potential environmental harm or health risks. Reducing this over-use of pesticides can improve farm profitability and also improve long term sustainability of farming in NH.

### External Factors:

- Chemical sales people are selling pest control materials, sometimes in conflict with UNHCE recommendations or cost containment considerations to the grower.
- Effective pest control measures and materials are not available for some minor crops (determined by the EPA).
- Pest outbreaks are not consistent from year to year.

### Assumptions:

- IPM research is accurate.
- IPM will pay off economically and environmentally.
- Private pesticide applicators in NH need to obtain 15 re-certification credits within a 5 year time period.
- Maintain current UNHCE staff - both educators and specialists, along with hiring the Sustainable Horticulture Specialist

### Barriers:

- People respond differently to each educational approach – diverse learning styles
- Weather and farmer's busy schedules may prevent travel to educational events.
- It costs money to go to educational meetings and publishing mailing and written materials.
- Some program participants may not change behavior despite having participated in an educational event

Inputs	Outputs		Objectives (SMART)	Outcomes ~ Impact		
	Participants	Activities		Learning Outcomes	Action Outcomes	Impact
UNHCE Educators and Specialists Ag Specialists from other states Grants New England and NH Vegetable & Berry Growers Association New Hampshire Fruit Growers Association NOFA-NH and MOFGA NHDAMF Farm Bureau USDA – NRCS and FSA Industry contributions County mileage Cooperating farms	Commercial and hobby vegetable and fruit growers – full-time and part-time operations Supportive industries Other agricultural associations and organizations (like Farm Service Agency, NH Dept. of Ag., etc.)	Twilight meetings New England Vegetable & Berry Growers Association conferences and workshops New Hampshire Vegetable & Berry Growers Association conferences and workshops NH Fruit Growers Association Annual Meeting North Country Fruit and Vegetable Meeting Farmer discussion groups Farm visits Seminars Participate in the development and editing of the small fruit, apple and vegetable pest management guides.	100 people will learn the principals and values of Integrated Pest Management within the next 2 years. 100 private and commercial pesticide applicators receive approved pesticide applicator training re-certification credits each year. 25 growers who did not previously scout (in the past 3 years) for pests will begin an active scouting program over the next 2 years. 25 farmers will realize an increase in farm profitability over the next 2 years. 25 growers will use cultural and biological methods and materials as their first defense over the next 2 years.	Growers will learn to identify the most common insect, disease, vertebrate and weeds that afflict vegetable and fruit crops. Growers gain skills in scouting for insects, disease and weeds and learn to use action and economic thresholds in pest management. Growers will learn about life cycles of the most prevalent insect, disease and weed pests. Growers will learn biological, cultural and chemical means of pest management for developing an Integrated Pest Management Program for their production system. Growers will gain knowledge of food safety as it relates to fruit and vegetable production. Growers will improve or acquire knowledge and skills on the proper choice, timing and application of pesticides. Growers will be exposed to new and improved agricultural technologies for pest management such as cultivators, mulches, row covers, pesticides, etc.	Growers will use their knowledge of pest life cycles to properly time intervention. Growers will choose biological and cultural control methods and materials as their first defense against crop pests. Chemical control will be used if biological and cultural methods were not successful. Growers will clean and sanitize production equipment on a regular basis. Growers will apply pesticides according to the Worker Protection Standards, NH rules and regs and the pesticide label. Fruit and vegetable growers throughout New England value and utilize the high quality pest management guides for vegetables, berries and apple.	Commercial fruit and vegetable operations will raise their profit margins and produce quality while using pest management practices that preserve land and water resources and protect biodiversity. Land and water quality and pesticide applicator health will be protected by proper pesticide application and handling. Growers will utilize pest management guides to guide their inputs and diagnose, saving time and reducing stress

## Evaluation Plan

**Learning outcomes** from will be evaluated by questionnaires distributed at educational activities. **Action outcomes** will be evaluated by follow-up telephone and in-person discussions, timed 6 months to 1 year after each event.

100 people will learn about Integrated Pest Management within the next 2 years.

- Questionnaire will ask individuals what specific information was learned through their participation at an educational event

Over 100 private and commercial pesticide applicators receive approved pesticide applicator training re-certification credits each year.

- Sign-in sheets at re-certification meetings will provide data on the number of private and commercial pesticide applicators receiving approved PAT credits.

25 growers who did not previously scout (in the past 3 years) for pests will begin an active scouting program over the next 2 years.

- On-Farm and telephone consultations will be conducted for the purpose of collecting data on IPM scouting activity.
- New England Vegetable & Berry Growers Association Conference Steering Committee Survey for the 2005 Conference will collect data pertaining to this SMART objective.

25 growers will use cultural and biological methods and materials as their first defense over the next 2 years.

- On-Farm and telephone consultations will be conducted for the purpose of collecting data on cultural and biological IPM methods & materials.
- New England Vegetable & Berry Growers Association Conference Steering Committee Survey for the 2005 Conference will collect data pertaining to this SMART objective.

25 farmers will realize an increase in farm profitability over the next 2 years.

- On-Farm and telephone consultations will be conducted for the purpose of collecting data on farm profitability as a result of newly implemented IPM activity.
- New England Vegetable & Berry Growers Association Conference Steering Committee Survey for the 2005 Conference will collect data pertaining to this SMART objective.

## Action Plan

Events tentatively planned:

An IPM Approach of Understanding and Controlling Mummy Berry for Blueberries Seminar, Goffstown - Nov 8, 2004

An IPM Approach of Understanding and Controlling Fire Blight for Apples and Pears Seminar, Goffstown - Nov 15, 2004

New England Vegetable & Berry Growers Educational Meeting, Westport, MA – November 6, 2004

New England Fruit & Vegetable Meeting, Manchester, NH – December 15 & 16, 2004

New Hampshire Vegetable & Berry Growers Annual Meeting, Boscawen, NH – March, 2005 and 2006

New Hampshire Fruit Growers Annual Meeting, Boscawen, NH – March, 2005 and 2006

New Hampshire Vegetable & Berry Growers Farm Twilight Meetings, locations in NH and MA and dates in 2005 and 2006 to be determined

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New England Vegetable and Berry Conference, December 2005

Vegetable and Fruit Team Members work with their county advisory councils and key fruit and vegetable growers to determine programming needs.

Extension Educators and Specialists determine programming needs by direct observation at fruit and vegetable operations and communication with growers.

George Hamilton and Amy Ouellette are members of the New England and NH Vegetable & Berry Growers Associations and New Hampshire Fruit Growers Association's Educational Steering Committees. These Steering Committees are comprised of Extension Educators and Specialists from New England and New York, plus growers and industry representatives. Productive program planning meetings are conducted for the purpose of discussing needs of northeastern fruit and vegetable growers.

Many details are considered when planning programs for fruit and vegetable growers including but not limited to:

- Convenience of location and date
- Cost to participants and Extension
- Regional expertise
- Emerging pest issues
- Emerging pesticide issues
- Industry trends