

## The Maine Garlic Project: A Participatory Research and Education Program

### Abstract

Participatory research is a useful technique for collecting basic data over a large geographic area. Garlic production was chosen as a participatory research study focus in Maine. Project participants (285) received bulbs to plant, monitored their crop, and reported data online. Participants received a monthly educational newsletter to improve their garlic production and maintain interest in the project. The project introduced many new gardeners to growing garlic for the first time. Participants overwhelmingly reported they shared the information they learned and that they plan to continue to grow garlic. The successful project benefited Maine growers and Extension staff.

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### Introduction

Enlisting the help of citizen scientists to expand scientific knowledge has long proven to be a practical tool for professionals. The Audubon Society has worked with birders to conduct Christmas bird counts for the last 112 years (Audubon Society, 2012). The Cornell Lab of Ornithology also has a long partnership with bird watchers to conduct their field research (Bhattacharjee, 2005).

In other similarly designed participatory research projects in Maine, the Maine Department of Inland Fisheries and Wildlife, through citizen participants, gathered data on the insect order Odonata, gaining more information in 5 years than had been gathered in the previous 150 years (Brunelle & deMaynadier, 2005). These authors also conducted participatory research with butterflies in Maine (deMaynadier & Webster, 2005).

Master Gardener volunteers were effectively engaged in the collection of data for a rain gauge network (DeMouche, Bathke, & Doesken, 2007), and a street tree resource evaluation (Prochaska & Hoffman, 2010). We decided to build on the success of these two Extension programs by including farmers and all gardeners, emphasizing a significant distance educational component while including an entire state in our program.

Participatory research is an especially useful technique for collecting basic data over a large geographic area that, owing to limitations of professional staff, time, and resources, make such

studies difficult. Engaging a community of volunteers and learners as partners in participatory research and education was an essential ingredient to the success of the Maine Garlic Project.

## **The Maine Garlic Project**

Garlic was chosen as the study focus owing to the intense interest and passion of garlic growers and the dearth of Maine-generated information for producing successful garlic crops. The Maine Garlic Project was designed as a participatory research and education project with Maine farmers and gardeners in planting and data collection of garlic cultivation over a 320 mile, three plant-hardiness-zone-areas. Master Gardeners were early contacts for recruitment in the project. Subsequent participants volunteered through local contacts; online venues; and newspapers and television media outlets.

Maine Garlic Project participants received two garlic bulbs to plant and a discount on a soil test. The soil test discount encouraged good horticultural practice and negated the cost of program enrollment. The cost-recovery approach encouraged committed participation.

Most of the 285 Maine Garlic Project participants entered their data into an online spreadsheet. Collected data included soil test information, garlic planting emergence and harvest date, as well as the garlic variety planted. This resulted in over 5,000 data points in over 350 data lines.

Educational outreach was delivered through a monthly newsletter keeping participants abreast of garlic biology, cultivation, cooking, and other relevant information. The newsletter helped improve the participants' understanding of garlic in general and subsequently their garlic crop. At the end of the growing season, participants completed an online survey documenting their progress in the project and received a certificate of participation. The submitted data became the basis for determining the project's effectiveness. The participant database has also been valuable in distributing information on recent garlic pests such as the Garlic Bloat nematode.

## **Project Goals**

The goals of the Maine Garlic Project were:

- Encourage growers to adopt garlic as a new crop
- Improve garlic production

The gathering of basic data such as garlic planting and emergence dates in Maine over a large geographic area would have been difficult were it not for a large group of participants.

## **Project Objectives**

The objectives of the Maine Garlic Project were:

- Introduce participatory research to a wide audience in the state
- Determine garlic emergence dates

- Develop optimal planting times for different hardiness zones of the state
- Develop optimal harvest times for different hardiness zones of the state
- Introduce a new food crop to many home gardens
- Develop a database of interested and committed gardeners within and outside of the Master Gardener Program
- Expand Maine gardeners' knowledge of garlic cultivation for better garlic crops
- Educate participants through a series of 13 online newsletters on garlic cultivation for better garlic crops

## **Project Findings**

In addition to introducing participatory research to a wide audience in Maine, many home gardens and some farms had a new food crop added. Previous garlic growers improved their crops because of their project involvement. Specific information developed from the collected data includes:

- Optimal garlic planting times for different areas of Maine
- Optimal garlic emergence times for different areas of Maine
- Optimal garlic harvest times for different areas of Maine

A post-project survey had a return rate of 38% (89/285). Survey data showed:

- 43% grew garlic for the first time
- 94% planned to continue to grow garlic
- 29% had garlic crops improved over previous years' crops
- 83% shared garlic information with a total of 373 other individuals
- 98% found the periodic educational newsletters helpful
- 42% took a soil test for the first time
- 88% plan to continue to take a soil test
- 95% had increased knowledge and understanding of growing garlic
- 98% rated the Maine Garlic Project as an overall positive experience.

## Conclusions

The Maine Garlic Project demonstrates that this participatory research and education model is an effective and efficient tool to gather data and teach over a large geographic area with benefits to Extension staff and their clients. Garlic growers in the Maine Garlic Project proved to be an enthusiastic and passionate group, asking many questions of the authors throughout the project. The Maine Garlic Project identified information gaps and needs that are being addressed through Extension publications and programs. Growers learned how to produce better garlic and shared that information with others. This example of participatory research and education may serve as a model for Extension in other states where gathering simple data and reaching learners over a large area proves to be a challenge.

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