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Soil Quality Interest Survey of Iowa Small Fruit Growers

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Soil Quality Interest Survey of Iowa Small Fruit Growers

Abstract

The profitability of strawberry production is dependent on the condition, or quality, of the soil. Soils with poor physical structure, chemical properties, or biological activity require more cultivation, fertilizers, and other inputs to maintain economic viability. In general, cultivation of the soil for crop production degrades the soil. It is therefore essential for growers to monitor the productive capacity of their soil. Because the concept of 'soil quality' is a relatively recent development, a survey of Iowa berry growers was conducted to coincide with soil quality field research and outreach projects. A short questionnaire was mailed to participants to gauge their awareness of soil quality before the study began and after it was completed.

Keywords

Horticulture

Disciplines

Agricultural Science | Agriculture | Horticulture

Soil Quality Interest Survey of Iowa Small Fruit Growers

Craig A. Dilley, graduate assistant
Gail Nonnecke, professor
Department of Horticulture

Introduction

The profitability of strawberry production is dependent on the condition, or quality, of the soil. Soils with poor physical structure, chemical properties, or biological activity require more cultivation, fertilizers, and other inputs to maintain economic viability. In general, cultivation of the soil for crop production degrades the soil. It is therefore essential for growers to monitor the productive capacity of their soil. Because the concept of 'soil quality' is a relatively recent development, a survey of Iowa berry growers was conducted to coincide with soil quality field research and outreach projects. A short questionnaire was mailed to participants to gauge their awareness of soil quality before the study began and after it was completed.

Materials and Methods

In order to measure initial grower interest in the soil quality concept, a questionnaire was mailed in March 2005 to all members of the Iowa Fruit and Vegetable Grower's Association who indicated they grew berry crops. Of the 113 surveys that were mailed, 29 were completed and returned for a 26% return rate. The postcard-sized survey contained 12 short questions designed to assess the current level of awareness and interest in soil quality and the soil quality test kit among Iowa berry growers. The survey also included questions about soil management practices.

Results and Discussion

The results of the initial survey (2005) revealed that 69% of these Iowa small fruit growers had heard the term "soil quality," 66% had not heard of the soil quality test kit, and 86% had not heard of the USDA Soil Quality Institute (entire

survey with responses follow below). Most of the growers believed that they have healthy soils and considered the health of their soil when making crop management decisions. About one half added compost, manure, or other organic materials to their fields. Most were aware of the importance of soil microorganisms to crop yield (88%), and also were open to the idea of monitoring the quality of their soil with a soil quality test kit.

The initial survey of 2005 showed that these Iowa berry growers were somewhat aware of the impact of production practices on soil quality, but were not aware that they could monitor soil quality with a test kit. These growers also showed interest in learning how the soil quality test kit could help improve their crop yields.

A second, final survey was mailed to growers in April 2006 to assess changes in grower awareness of soil quality and the soil quality test kit. The second survey was identical to the initial survey used in 2005. Thirty percent of the questionnaires were returned in 2006, an increase of 15% from the 2005 survey. In order to assess changes in grower awareness of soil quality over time it was necessary to compare responses only from growers who returned questionnaires in both 2005 and 2006. Forty-five percent of growers who returned questionnaires in 2005 returned questionnaires in 2006. This equates to a response rate of 12% from all 113 growers who received questionnaires in 2005 and 2006. The following percentages relate to the 13 growers who returned questionnaires in both years.

The results of the survey show that awareness of the soil quality test kit increased during the project for growers who participated in the questionnaire. The results show an increase in those growers not knowing about the role of

microorganisms in crop productivity and soil management. The results also show that berry growers believe their fields are not producing at optimum levels (question 10) and could be managed in ways that could improve crop yield (question 11), possibly with the use of a soil quality test kit (question 12).

Acknowledgments

Partial funding for this project was provided by a USDA Sustainable Agriculture Research and Education Graduate Student Grant.

Growers were instructed to circle Yes, No, or Don't Know (DK) on right-hand side of postcard containing the following questions. Responses to each question are shown for both 2005 and 2006 followed by the percentage change between years. A negative sign in front of a number indicates a decrease in response percentage from 2005 to 2006.

<p>1. Have you heard the term "Soil Quality"?</p> <table border="1"> <thead> <tr> <th></th> <th><u>2005</u></th> <th><u>2006</u></th> <th><u>Percent change</u></th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>92.3</td> <td>100.0</td> <td>8.3</td> </tr> <tr> <td>No</td> <td>7.7</td> <td>0.0</td> <td>-100.0</td> </tr> <tr> <td>Don't Know</td> <td>0.0</td> <td>0.0</td> <td></td> </tr> <tr> <td>No Response</td> <td>0.0</td> <td>0.0</td> <td></td> </tr> </tbody> </table>		<u>2005</u>	<u>2006</u>	<u>Percent change</u>	Yes	92.3	100.0	8.3	No	7.7	0.0	-100.0	Don't Know	0.0	0.0		No Response	0.0	0.0		<p>7. Do you consider the health of your soil when making berry crop management decisions, e.g., tillage practices, type of fertilizer used?</p> <table border="1"> <thead> <tr> <th></th> <th><u>2005</u></th> <th><u>2006</u></th> <th><u>Percent change</u></th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>92.3</td> <td>76.9</td> <td>-16.7</td> </tr> <tr> <td>No</td> <td>7.7</td> <td>23.1</td> <td>200.0</td> </tr> <tr> <td>Don't Know</td> <td>0.0</td> <td>0.0</td> <td></td> </tr> <tr> <td>No Response</td> <td>0.0</td> <td>0.0</td> <td></td> </tr> </tbody> </table>		<u>2005</u>	<u>2006</u>	<u>Percent change</u>	Yes	92.3	76.9	-16.7	No	7.7	23.1	200.0	Don't Know	0.0	0.0		No Response	0.0	0.0	
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