

# Activity 4.1

## Plant pH and Soil Amendments

Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

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***Student Materials***

Pen or pencil  
Appendix A “Ideal Soil pH Ranges”

***Directions***

Read the following scenarios and write a brief explanation of what the producer should do to ensure that the plant has the appropriate pH.

- 1. A landscaper is planting geraniums on the grounds of a large company. The soil was tested and the pH was approximately 5.5. What should the landscaper do to ensure optimum growth and health for the geraniums?

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- 2. A producer has started growing cranberries and noticed last year that the crop was smaller than anticipated. The soil was tested and had a pH of 7.0. What should the producer do to improve the chances of a good crop?

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- 3. A high school student has decided to grow tomatoes and squash to sell at the local farmer’s market during the summer. The soil was tested and had a pH of 6.5. What should the student do to the soil so that both the tomatoes and squash will grow well?

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4. A producer just acquired a field and wants to plant either alfalfa or Bermuda on it. The soil was tested and had a pH of 5.5. The producer does not really want to bother with adding soil amendments and worrying about pH levels. What crop should the producer plant?

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5. A landscaper has a customer that has always loved magnolias and wants to plant several in her yard. The soil was tested and had a pH level of 6.0. What should the landscaper tell the customer?

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# Activity 4.2

## Improving Garden Soil Fertility

Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

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***Student Materials***

Pencil  
OSU Extension Fact Sheet HLA-6007

***Directions***

Answer the questions using the extension fact sheet on garden soil fertility.

1. What can be used to add organic matter to garden soil?

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2. Is organic matter a balanced fertilizer?

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3. What two types of fertilizers given together allow most soils to produce best?

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4. What do plants need for good growth?

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5. What mineral elements are most frequently deficient in garden soils?

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6. What are some ways that soils lose available nutrients?

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7. What benefits does humus provide to soil?

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8. What are two benefits of adding organic matter to the soil?

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9. Does the addition of organic matter diminish plant diseases and protect crops from insect attack?

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10. What three main nutrients do commercial fertilizers provide?

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11. What is a fertilizer that contains all three main nutrients?

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12. Why is nitrogen needed for plant growth?

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13. Why is phosphorus needed for plant growth?

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14. Why is potassium needed for plant growth?

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15. What is used to determine the soil pH of a soil?

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16. What can be used on soils that are too acidic?

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17. What can be used on soils that are too alkaline?

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18. How can you make your own starter solutions?

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19. What benefits does nitrogen provide when used as a side dressing?

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20. When should you get a sample of your garden soil tested to determine the pH and nutrient content?

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# Activity 4.4

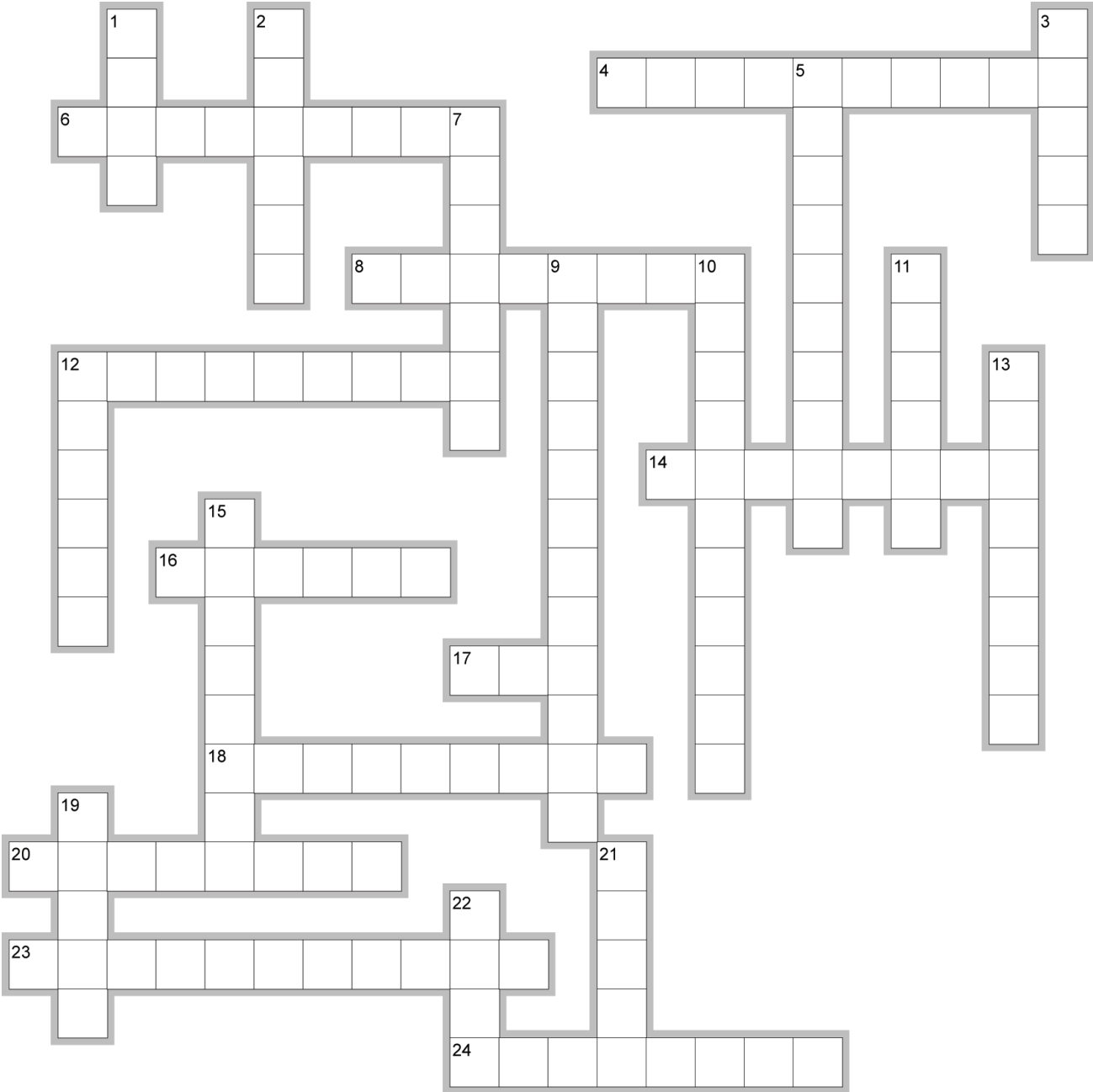
## Non-Chemical Methods for Controlling Diseases

Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

**Student Materials**

Pencil

OSU Extension Fact Sheet EPP-7652



EclipseCrossword.com

***Across***

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4. A plant's tolerance or immunity to a disease
6. To avoid bringing disease into the garden, seeds or transplants that are \_\_\_\_\_ and disease free should be used.
8. A \_\_\_\_\_ cooker can be used to sterilize small amounts of soil.
12. Transplants with galls or \_\_\_\_\_ on their roots should not be purchased.
14. Plants that are \_\_\_\_\_ will have fewer disease problems.
16. Woody material that is diseased should be \_\_\_\_\_.
17. Avoid working in the garden when plants and soils are \_\_\_\_\_.
18. Preventing the entrance and establishment of disease causing organisms
20. Crop \_\_\_\_\_ is effective against many soil-borne organisms.
23. Tools and machinery should always be \_\_\_\_\_.
24. Avoid planting in areas with poor \_\_\_\_\_.

***Down***

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1. A non-chemical means of disinfecting small amounts of soil is \_\_\_\_\_ sterilization.
2. Tomato varieties labeled with an "N" are resistant to early \_\_\_\_\_.
3. Over-watering can enhance seed \_\_\_\_\_.
5. Two important components of non-chemical disease control are cultural and \_\_\_\_\_ practices.
7. Without the use of chemicals there will be some \_\_\_\_\_ loss.
9. A non-chemical means of disinfecting large amounts of soil is called \_\_\_\_\_.
10. The elimination of the disease-causing organism after it has become established is \_\_\_\_\_.
11. Plant debris should be removed after each growing \_\_\_\_\_.
12. Properly \_\_\_\_\_ plants are less susceptible to pathogens.
13. Tomato varieties labeled with an "F" are resistant to \_\_\_\_\_ wilt.
15. A \_\_\_\_\_ deficiency can predispose a plant to disease.
19. A simple bioassay can determine if heated soil is \_\_\_\_\_.
21. Pathogenic organism that can cause plant disease
22. Air movement can be increased by \_\_\_\_\_ removal.



## Activity 4.5

### Plant Pests and Treatment Oral Report

Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

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#### ***Student Materials***

Pencil and paper or computer/printer

Note cards

Resources to research plant pests and treatments

Examples:

Online sites

Books

Magazines

Personal interviews

Materials for visual component to report

Examples:

Slide presentation

Photographs

Poster

#### ***Directions***

Choose at least one type of plant pest and treatment for that pest and present an oral report over the plant pest and treatment. The report should be 3-5 minutes in length. You may use note cards but do not read your presentation. Your presentation should include at least one visual component.

Answer questions about the plant pest and treatment in your oral presentation such as:

- What is the plant pest?
- What type of damage does the pest cause?
- What types of plants are most affected by the pest?
- Does the pest cause significant agricultural crop damage and possible monetary loss?
- Are there any environmental conditions that make plants more susceptible to the pest?
- What treatment can be used to rid plants of the pest?
- How does the treatment get rid of the plant pest?
- What costs are involved in the treatment?
- If you were a producer, would you want to use this specific type of treatment? Why or why not?