



Phase I

Lawn Care Technician Training Program

Lesson 9

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Lesson #9

Insect Control

Instructions: Please read over this information twice to fully understand it. Then, proceed to the quiz. When finished, give the quiz to your branch manager or other designated person for correction. You must get at least 80 percent right to go on to the next lesson.

It is important that we are able to identify the insect and know its life cycle and how it feeds. Only then can we determine which control material to use and when to apply it.

Most turf insects can be easily controlled. The proper materials applied at the proper time can control all kinds of damaging turf insects.

Just because you or the homeowner finds a few insects does not warrant immediate use of insect controls (called insecticides). A thorough inspection will determine the population of insects present and what corrective action may be required.

We do not have to eradicate all insects since no chemical insecticide can be 100 percent effective. A healthy, active lawn can support some damaging insects without showing signs of damage. If we apply more insecticide than needed, we not only will be wasting money, but we also may be controlling beneficial insects while applying more insecticide into the environment than is necessary.

I. Preventing Insect Damage

Not all measures to control insects involve the use of chemical insecticides. Proper cultural practices are essential in minimizing the damage from insects. Proper watering, fertilizing, and mowing will help to ensure healthy turf. If that turf is damaged by insects, it can bounce back faster and can withstand more damage than poorly managed turf.

Proper cultural practices also include the management of the thatch layer. Thatch is a layer of living and dead organic matter that collects on the soil's surface. It is a natural occurrence for turf to develop a thatch layer. Insects will live in the thatch layer. This thatch layer will prevent insecticide movement into the soil, and it restricts air, water, and nutrients from reaching the root zone. This will tend to weaken the plant and make the plant more susceptible to damage from insects.

Another way to prevent insect damage is by planting grass types that the insects do not like. Certain grasses are less susceptible to turf-damaging insects. Some examples are tall fescue and ryegrass. These grasses contain chemical repellants called endophytes that protect the plant from damage. The insect either stays away or stops feeding quickly and moves on. You can suggest this approach to your customers.

II. Preventative versus Curative

When an insect population gets out of control and damage is occurring, or is anticipated to occur, insecticides will be used.

1. Preventative Controls

Many turf managers have switched to applying preventative control products as a means to reduce and manage potentially damaging insect populations. Oftentimes, this works better and results in less insecticide application as well as less damage to the turf.

Grub prevention has also been utilized to offset damage. Grub prevention materials are applied prior to egg laying. The timing and application of the proper insecticide should be done according to label directions to ensure the product will be available when the eggs hatch. The small, thread-like larvae of the grubs are easily controlled at this stage.

2. Curative Controls

It often becomes necessary to control insect problems as they are causing damage to the turf. This may occur if a new customer starts on the program after the usual spring insecticide treatment or if the customer refuses the grub prevention treatment and then grubs do extensive damage. It is a matter of identifying the insect and choosing the right labeled product and rate to do the job.

When treating for insects, especially subsurface feeding grubs and billbugs, it is imperative to instruct the customer, orally or in writing, to water in the insecticide. The controls need to get through the thatch and into the root zone for adequate control. Watering in also reduces potential pesticide exposure to your customers.

III. Other

1. Beneficial Insects

Not all insects are bad for turf and other plants. Many insects help turf managers by burrowing holes in the soil which allows for added air circulation and increased water penetration. Other insects break down thatch and organic matter releasing valuable nutrients back into the soil. Insects, such as big-eye bugs,

ladybugs, and praying mantises feed on destructive insects. Unfortunately, these insects are not immune to chemical controls applied to control damaging insects. Therefore, insecticides should be used judiciously.

2. Earthworms

Earthworms are not insects, but are the subject of many homeowner questions.

Earthworms are the sign of a healthy soil. They do no damage to turf, but actually help the soil breath with their burrowing and help with the breakdown of thatch because they eat and decompose it. If mounds of castings produced by earthworms are a problem, tell your customers to simply rake the lawn periodically to break up those mounds.

3. Insecticide Safety

Follow the label directions for the required Personal Protective Equipment (PPE) necessary to be used when handling or applying materials. Be sure to wear the proper PPE when dealing with the concentrated insecticides. These may include long sleeve shirts, pants, boots, gloves, apron, goggles, and a face shield and hardhat. When performing applications, you should always wear long sleeve shirts, pants, boots, and gloves. You should also wash your hands with soap and water between all applications and before smoking, eating, and using the bathroom.

Always follow label recommendations, including leaving proper watering in instructions with your customers. Advise your customers about these instructions.

Further information about the life cycles, feeding habits, and controls of specific insects will be discussed in future lesson plans.

Lesson #9 Quiz Insect Control

You must get at least 80 percent right to go on to the next lesson.

Name _____ Date _____ Score _____

1. Select the three things we need to know about an insect before we should attempt control.
 - a. How the insect feeds
 - b. The size of the insect
 - c. What is the insect's life cycle
 - d. How to identify the insect
 - e. Has it damaged the lawn before
2. A healthy vigorous lawn can support some insect activity as long as the population of insects does not get too high. True or False?
3. How does a thatch layer increase the likelihood of damage from insects?
 - a. Insects can live in the thatch
 - b. Thatch stops insecticides from going to the soil
 - c. Thatch restricts air, water and nutrients from getting to the soil, thus weakening the turf
 - d. All of the above
4. Grub prevention is applied prior to egg laying by beetles to kill the young insects as they hatch out of their eggs. True or False?
5. Why must customers water in subsurface insect controls?
 - a. So the lawn gets watered anyway
 - b. To get the insect control to the insects
 - c. To drown the insects
 - d. To reduce pesticide exposure to our customers and wildlife
 - e. Both a and b
6. How are some insects beneficial to lawns?
 - a. They burrow holes in the soil
 - b. They eat damaging insects
 - c. They help to break down the thatch
 - d. All the above
7. Always follow the label directions for the required Personal Protective Equipment (PPE) necessary to be used when handling or applying materials. True or False?

Answer Key Lesson 9

1. A, C, D
2. True
3. D
4. True
5. B
6. D
7. True

Insert Company logo here
See instructions to change.



Insect Control

Lesson 9

Insect Control

- It is important that we are able to identify the insect and know its life cycle and how it feeds. Only then can we determine which control material to use and when to apply it.
- Most turf insects can be easily controlled. The proper materials applied at the proper time can control all kinds of damaging turf insects.
- A thorough inspection will determine the population of insects present and what corrective action may be required.
- A healthy, active lawn can support some damaging insects without showing signs of damage.

Preventing Insect Damage

- Proper cultural practices also include the management of the thatch layer.
- Insects thrive and hide in the thatch layer.
- **Insert Regional Recommendation**

Insert Company logo here
See instructions to change.

Preventative Versus Curative

Preventative Controls

Insert Regional recommendation

Curative Controls

Insert Regional recommendation

Insert Company logo here
See instructions to change.

Other

- **Beneficial Insects**

- Not all insects are bad for turf and other plants.

- **Insert Regional Recommendations**



Phot Credit: MS State University Extension Service
Lady Beetle

- **Earthworms**

- Earthworms are signs of healthy soil



Earthworm

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See instructions to change.

Other

- **Insecticide Safety**

- When handling or filling with concentrated pesticides, certain safety gear (PPE Personal Protective Equipment) must be worn

- **Proper Gear and Procedure**

- Apron
- Rubber Boots and Gloves
- Hard Hat
- Face Shield or goggles
- Fresh Daily Uniform
- Keep Your Fill Gear Clean



Always follow label recommendations, including leaving proper watering in instructions with your customers

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See instructions to change.

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