

GI-BMP Training Program Review Worksheets

2/7/2013

Version 1

ANSWER KEY

Instructions: Use the worksheets as a guide to review key learning points and information provided during the training program. Depending on the training format, answers may be discussed within the training session, posted in a designated area or available for download from the web to view.

Introduction Review

1. The intention of this training is to enhance the professional knowledge and judgment of the green industry professional for the protection of Florida's water and natural resources.
2. Many of Florida's water resources are particularly susceptible to pollution because of the state's unique geology and climate.
3. The acronym GI-BMP is a shortened term which refers to the Green Industries Best Management Practices.
4. This training addresses four main goals to reduce nonpoint source pollution and promote plant health.
5. The GI-BMP goals include reducing offsite runoff, using appropriate site design and plant selection, using appropriate rates and methods of applying fertilizer and irrigation, and using integrated pest management (IPM) practices.
6. "Protection of water resources by the Green Industries" means that you play a leading role in educating your clients and implementing these practices.
7. This training program provides specific information and guidance on turfgrass and landscape management practices.
8. Water is the primary mechanism for the transport of dissolved chemicals through the soil.
9. Let only rain down the storm drain.
10. It is recommended that you revisit this training program every two to four years for new and updated information.

Need a Hint?

Appropriate
Climate
Educating
Enhance
Fertilizer
Four
Geology
GI-BMP
IPM
Irrigation
Judgment
Landscape
Leading
Mechanism
Promote
Rain
Soil
Turfgrass
Two
Water

Overview Review

1. The Clean Water Act authorized the U.S. Environmental Protection Agency (EPA) to implement pollution control programs to protect water quality.
2. Water quality standards are either numeric or narrative standards for a water body that will permit that water body to maintain its designated use.
3. Excessive nutrient loading to Florida's surface and ground waters is one of the biggest water quality issues facing our state.
4. Counties and cities may adopt more stringent standards than state laws mandate to address local nonpoint source pollution issues.
5. All urban commercial fertilizer applicators must have a Limited Commercial Fertilizer Applicator Certificate (LCFAC) by 2014 to operate legally in Florida.
6. Nonpoint Source Pollution (NPS) is water pollution that cannot be traced to its specific origin or starting point.
7. An urban watershed is comprised of storm sewers that transfer stormwater from impervious surfaces to lakes and rivers.
8. Impervious surfaces such as sidewalks, driveways, streets, rooftops or compacted soils often produce stormwater runoff, excess water that flows along the ground.
9. Leaching often refers to the loss of water-soluble plant nutrients and other landscape chemicals from the soil, due to excessive rain and irrigation.
10. The acronym FFL refers to Florida-Friendly Landscaping™, a quality landscape that is designed, installed and maintained according to nine science-based principles that conserve and protect Florida's water and natural resources.

Need a Hint?

Clean
EPA
FFL
Impervious
Leaching
Must
Nine
NPS
Numeric
Nutrient
Protect
Runoff
Starting
Stringent
Watershed

Lawn and Landscape Review

1. The dense root and shoot system of healthy turfgrass provides a natural “water filter” that removes contaminants and reduces effects of urban nonpoint source pollution.
2. St. Augustinegrass has good tolerance to salts in coastal and reclaimed water irrigation areas and tolerates a wide range of pH soils, making it the most adaptable and widely used turfgrass in Florida.
3. There are several disadvantages to St. Augustinegrass. It will not stay green without supplemental water during times of drought, it has poor wear tolerance and it accumulates thatch, particularly with excess nitrogen and water applications.
4. Compared to St. Augustinegrass, Zoysiagrass has smaller, finer leaf blades, which provide a denser growth habit.
5. Zoysiagrass needs about the same amount of water as St. Augustinegrass.
6. Bahiagrass can be described as having low maintenance inputs; it requires relatively low inputs of water, fertilizer and pesticides. It also a good choice for non-irrigated grounds or large areas.
7. Inappropriate landscape cultural practices, such as leaving clippings on sidewalks, driveways and streets, results in direct environmental consequences such as harming aquatic life in nearby water bodies.
8. Over time, inappropriate cultural practices cause indirect environmental consequences, such as erosion and sediment buildup in nearby water bodies due to loss of vegetative cover.
9. There are two ways to manage environmental turfgrass stress: use stress-tolerant species or cultivars; use proper cultural and management practices to alleviate the effects.
10. Improper mulching can cause tree decline due to lack of oxygen and trunk rot.
11. Pruning should be a part of routine maintenance; however, close attention should be paid to proper timing and needs of various landscape plants.
12. Mangroves are usually associated with coastal wetlands and play a critical role in reducing flood damage by storing stormwater and releasing it slowly over time, and filtering pollutants, silt and sediment.

Need a Hint?

Clippings
Coastal
Cultural
Dense
Denser
Direct
Disadvantages
Finer
Inappropriate
Indirect
Loss
Low
Mulching
Non-irrigated
Pruning
Sediment
St. Augustinegrass
Thatch
Water

Irrigation Review

1. Water is among Florida's most valued resources.
2. In Florida, salt water intrusion and aquifer depletion are serious problems that occur in areas of high water demand.
3. Responsible irrigation management reduces need for fertilizers and/or chemical treatments to landscape plants.
4. Rain sensor switches or other shut-off devices are required by law to be maintained and operational, regardless of the age of the irrigation system.
5. Proper design and installation of irrigation components optimizes their use and decreases any off-site environmental impacts.
6. Water from wastewater treatment plants is known as reclaimed wastewater.
7. Nutrients in reclaimed irrigation water may be variable, so confirm nutrient levels periodically and avoid over-irrigation and irrigation of non-target areas.
8. Backflow devices must be installed to prevent contamination of potable water with nutrients and pesticides .
9. Drip emitters are ideal when precision is desirable or for narrow strip plantings, such as along hedge rows.
10. Regular inspection of micro-irrigation devices and filters is necessary to ensure overall system function.
11. Irrigation scheduling is based on the water needs of particular plants in the landscape and will differ based on the plant's ability to extract soil moisture in relation to root zone depth, and ability to tolerate reduced moisture.
12. Effective rainfall is the total rainfall, minus runoff, evaporation, and deep percolation.
13. No more than ½ to ¾ inch of water should be applied for a single irrigation event.
14. Established drought-tolerant plants may require little or no irrigation.
15. Overwatering can lead to increased plant disease, higher populations of plant pests, and leaching or runoff of nitrogen and phosphorus.

Need a Hint?

Aquifer
Decreases
Design
Effective
Established
Fertilizers
Non-target
Nutrients
Overwatering
Pesticides
Precision
Prevent
Reclaimed
Regular
Responsible
Root
Scheduling
Sensor
Single
Water

Fertilizer Review

1. A fertilizer may contain one or more recognized plant nutrients; promote plant growth; control soil pH; or provide enrichment or other corrective measures to the soil.
2. Urban soils are highly variable in nutrients and availability, so supplemental nutrients may be needed to correct or prevent nutrient deficiencies.
3. Plants that have chronic deficiencies may not be suitable for the site conditions. Select plants that are better adapted.
4. Do not fertilize your lawn during the winter months if you are in a location where the lawn does not actively grow in the winter.
5. Fertilizer should be applied to grass when roots and shoots are actively growing to reduce potential nutrient leaching.
6. Newly planted sod and sprigs should not be fertilized sooner than 30-60 days after planting.
7. Established woody plants in an area where turf is routinely fertilized may not require supplemental nutrients unless they show deficiency symptoms.
8. A soil analysis is a snapshot of what is present at the time of sampling. Tissue analysis can indicate levels of certain nutrients and plant health condition.
9. Nitrogen applied in excess can alter or degrade the environment.
10. Nitrogen sources consist of two forms : organic and inorganic.
11. Quick- and slow-release sources of nitrogen are applied at two different rates.
12. Iron is a micronutrient required for healthy turfgrass growth and maintenance; however, it cannot be substituted for other required nutrients such as nitrogen.
13. Determining the area of application before fertilizing saves time and money, and prevents adverse impacts on the environment.
14. Calibration includes the inspection of application equipment to ensure it is safe, in good condition and working correctly.
15. The rate of nutrient application, particularly nitrogen, depends on a number of factors : turfgrass species, turfgrass maintenance level goals, the location, time of year, and type of fertilizer source.
16. The ring of responsibility ensures that fertilizers and other lawn chemicals do not come into direct contact with water bodies or with any structure bordering water such as a sidewalk, driveway, street, canal, lake, or waterway shorelines.

Need a Hint?

Actively
Area
Chronic
Factors
Fertilizer
Forms
Inspection
Iron
Nitrogen
Nutrient
Planting
Rates
Ring
Snapshot
Substituted
Supplemental
Tissue
Urban
Winter

Pesticide (IPM) Review

1. It is illegal to apply any pesticide commercially, for hire, to a lawn, residential site, or other structural site without a license.
2. A license for pesticide application is required from the Florida Department of Agriculture and Consumer Services (FDACS).
3. Chapter 482 services the commercial pest control operators, commercial landscape maintenance industry, government and private employees or owners applying pesticide products.
4. Chapter 487 services the use, purchase, and supervision of restricted-use pesticides.
5. A pest is anything that competes with humans, domestic animals, or desirable plants for food or water.
6. The main goal of Integrated Pest Management (IPM) is efficient use of pesticides by using a combination of tactics to control pests.
7. Accurate identification is critical to knowing if a pest is harmful and treatment is necessary..
8. The cultural IPM component consists of the proper selection, establishment, and maintenance, such as pruning, fertilization, and irrigation of turf and landscape plants.
9. The physical or mechanical IPM component is related to the removal of dead, diseased or infested materials and debris.
10. The biological IPM component involves the release and/or conservation of natural enemies and other beneficial organisms.
11. IPM chemical control includes a wide assortment of conventional, broad-spectrum pesticides and more selective, newer chemicals.
12. Droplet size and wind speed are the most important factors that influence drift.
13. Pesticide labeling contains information and instructions that users are legally required to follow.
14. To prevent exposure to pesticides, applicators should wear protective clothing and personal protective equipment (PPE).

Need a Hint?

482

487

Accurate

Biological

Chemical

Combination

Cultural

Droplet

Exposure

FDACS

Illegal

IPM

Labeling

Pest

Physical

PPE

Required