Training for Fertilizer Application Certification in Maryland

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Power Point Presentations and Draft Form of Training Manual Will Be Available at
Benefits and Hazards Associated With Fertilizer Application
What Are Turfgrasses?

Turfgrasses: Are........

1) A Perennial Plant Community

2) Are Plants Within the Poaceae Family

3) Tolerate Defoliation (Mowing) and Traffic

4) Have a Fibrous Root System
WHY TURFGRASSES?

WHY TURFGRASSES?
TURFGRASS USES

- FUNCTIONAL BENEFITS And/Or USE
- RECREATIONAL USE
- AESTHETIC USE
FUNCTIONAL BENEFITS

- Erosion Control
- Modify Temperatures
- Water Quality / Purification
July 6, 2010
At 4:00 pm
Temperature
Was 100 F

Parking Lot : 140 F  Synthetic Field : 157 F

Natural fields (Bermudagrass): 94 F

Transpirational cooling lowered temperatures by as much as 63 F
Influence of Plant Cover on Runoff

- Turfgrasses Reduce Run-off After Storm Events
- Filter Various Contaminants (Oil, Nutrients, And Pesticides)
- Reduce Soil Erosion
FUNCTIONAL BENEFITS

- Positive Influence of Plant Photosynthesis
- Carbon Footprint!
- Carbon Dioxide Sink (2-6 Tons/Acre/Yr) Thus Reducing Greenhouse Effect and Can Also Remove Other Air Pollutants Such as Ozone and Hydrogen Fluoride
- Oxygen Production

Sessions

Monday, Feb. 8

Environmental Session: Exploring Golf’s Carbon Footprint
3:30 – 5 pm

Energy use at golf facilities and the basic elements of an overall carbon footprint will be discussed. GCSAA will provide a preview of the energy use data collected from the Golf Course Environmental Profile. Industry experts will discuss carbon trapping/sequestration on the golf course, energy use associated with maintenance practices and related equipment technology.
FUNCTIONAL BENEFITS

Improves Soil Structure By Increasing Organic Matter In Soils

From “Fundamentals of Soil Science” Foth et.al 1985
AESTHETIC VALUE

- Washington Post Article; May 26, 1997
- “There’s No Bond Quite Like The One Between A Man and His Grass”
- “of all the sensuous pleasures I get from grass, none is greater than the look, feel, and scent of it immediately after it’s been cut”
Aesthetic Value In Parkland Settings
RECREATIONAL USES

- Football
- Golf
- Baseball
- Soccer
- Tennis
- Lawn Bowling
- Field Hockey
- Lacrosse
- Horse Racing
RECREATIONAL USES

- **Playability** and **Safety (Hardness/Footing)**
  Are Major Concerns For Recreational Uses

Clegg Impact Hammer
Measures How Hard A Playing Surface Is

A Stimpmeter Measures Ball Speed On A Putting Green at 2011 U.S. Open
Risks of Turf Fertilizing

Eutrophication

You’ve seen ponds like this, stagnant and covered with algae. This pond is “eutrophic.”

- This can happen naturally over a long period of time or it may happen “unnaturally” if a waterbody receives runoff containing excess nitrogen and/or phosphorus.
- Excess nutrients allow some plants to overgrow, throwing off the balance of organisms living in the pond, & leading to low oxygen levels in the water.
- Result: a body of water that can’t support diverse populations of living things.
What Can Happen to Nutrients After Application to Turf?

**GOOD**
- Taken up by plants and other soil organisms
- Stored in the soil on clay particles and organic matter

**BAD**
- Runoff in water or with soil erosion
- Leach into ground water when water carries them past plant roots
- Volatilize – nitrogen can convert to a gas & be lost to the air

Depending on how nutrients are applied to turfgrass, the outcome may be good or bad for business & the environment.