



LAWN CARE

TOPICS TO COVER

- Turfgrass Types
- Seeding
- Fertilizer
- Lawn Care
- Lawn Pests & Problems

TURFGRASS TYPES

- Kentucky Bluegrass
- Ryegrass
- Fine Fescue

Most northern lawns are a combination of Kentucky bluegrass, ryegrass and fescue(s).

Kentucky Bluegrass

- **Width:** 1/8" wide
- **Tip/blade:** V-shaped blade with a canoe pointed tip
- **Color:** darker green than any other grass; same color on both sides
- **Feel:** soft
- **Growth:** aggressively through rhizomes
- **Additional:** mows cleanly and won't "crush" easily; goes dormant during drought

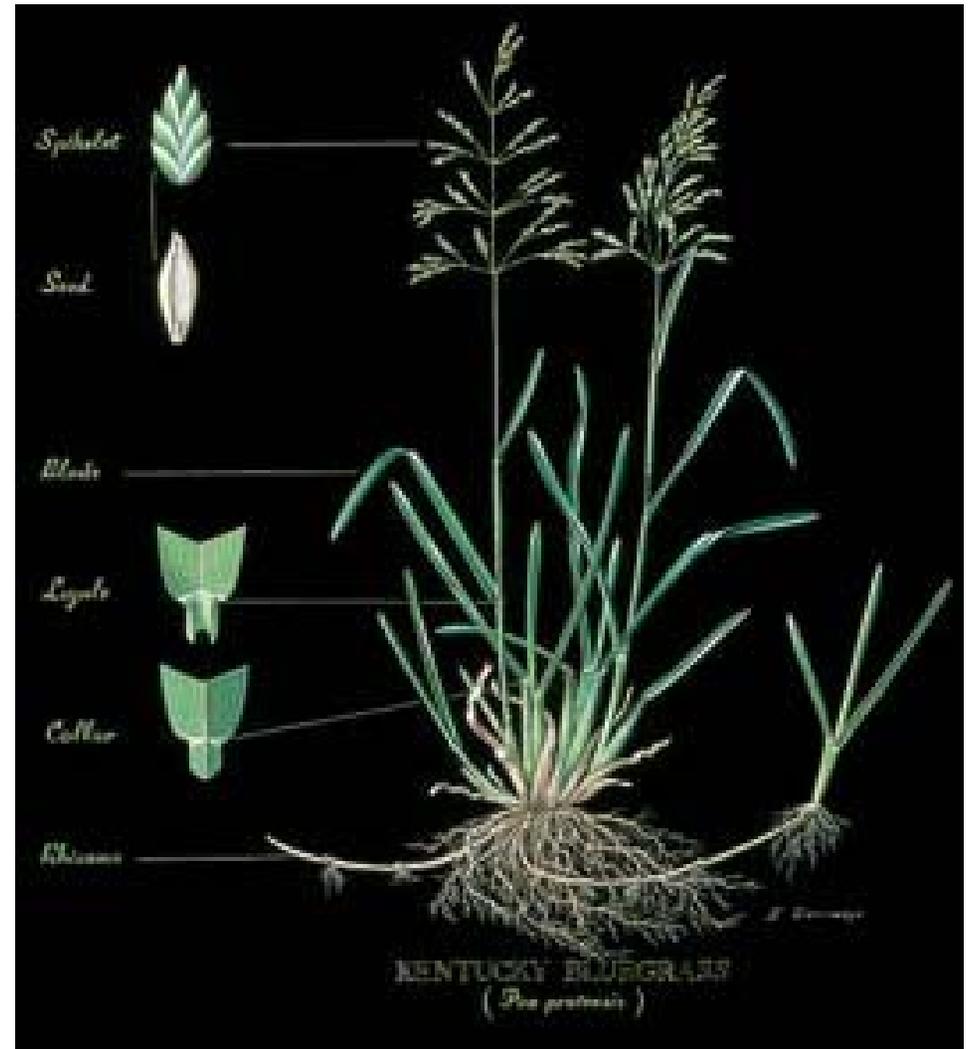


Photo Courtesy of scotts.com

Ryegrass – Annual & Perennial

- **Width:** 1/8" wide
- **Tip/blade:** pointed tip
- **Color:** dark green, but lighter than bluegrass, and shiny on one side of the blade
- **Feel:** soft
- **Growth:** grows quickly from seed; a bunch-type grass that won't fill in naturally like bluegrass
- **Additional:** has visible veins on the blade; shreds when mowed with a dull blade; broad collar; sheaths below ground are reddish in color



Photo Courtesy of scotts.com

Fine Fescue

- **Width:** 1/16" or less
- **Tip/blade:** blade is "hair-like" with a fine tip
- **Color:** dull, or gray-green color
- **Feel:** very soft feel
- **Growth:** grows fast
- **Additional:** red or purplish colored base; crushes easily; does not tolerate drought



Photo Courtesy of scotts.com

Tall Fescue

- **Width:** 3/16" or more; widest blade among cool-season grasses
- **Tip/blade:** pointed tip
- **Color:** dark like Kentucky bluegrass
- **Feel:** coarse, stiff blades
- **Growth:** grows in clumps
- **Additional:** prominent veins visible on the blade; won't survive extreme cold temperatures; jagged edge on the side of the blade

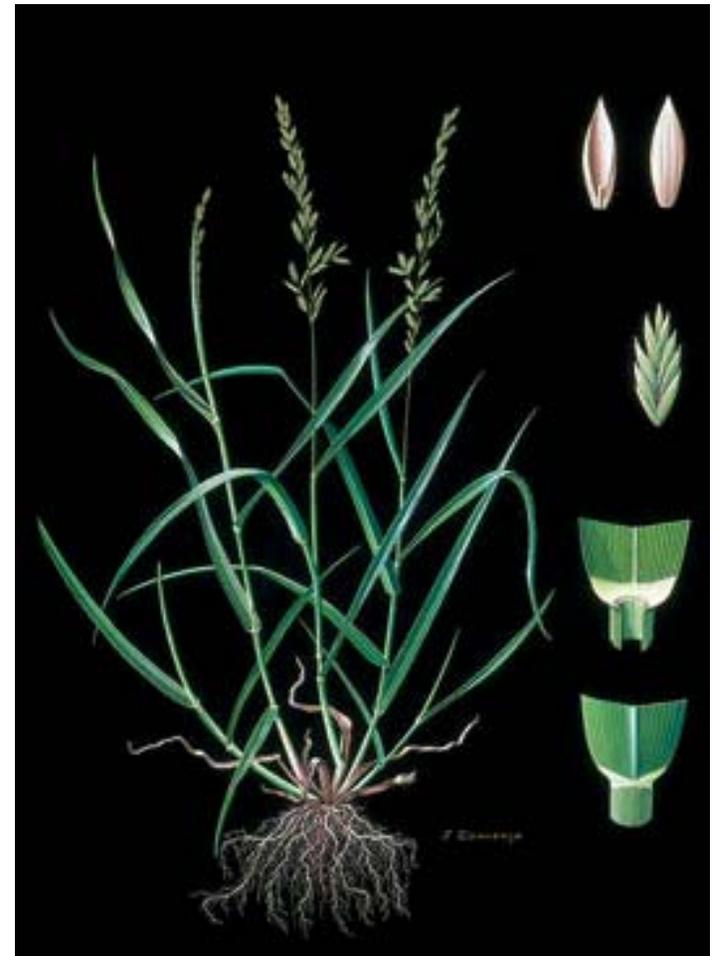
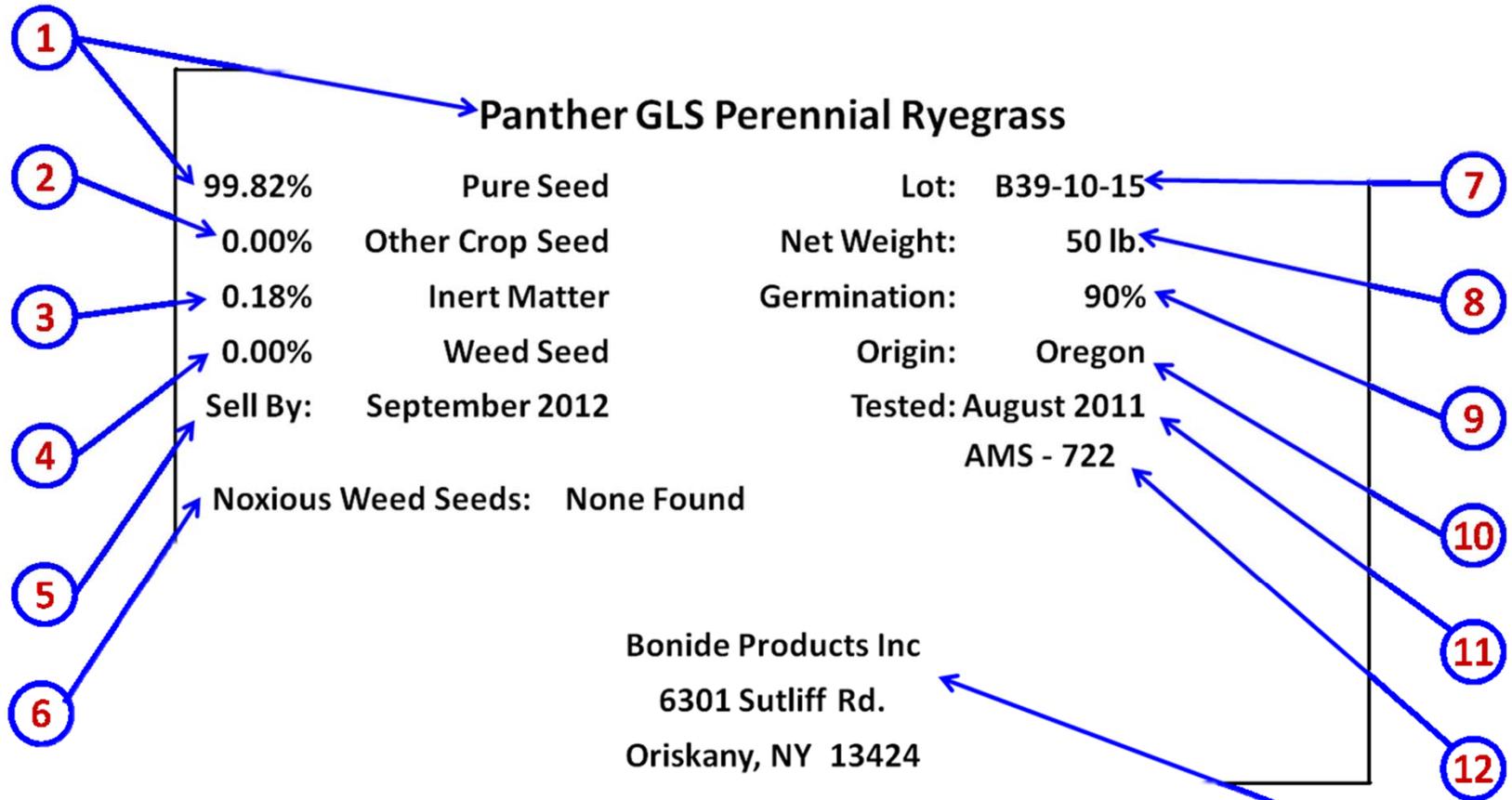


Photo Courtesy of scotts.com

SEEDING

- Labels
- Characteristics
- What grass needs to grow

Seed Labels



- 1. Seed Variety Name & Purity
- 2. Other Crop Seed Present
- 3. Inert Matter
- 4. Weed Seeds Present

- 5. Sell By Month & Year
- 6. Noxious Weed Seed
- 7. Lot Number
- 8. Package Net Weight
- 9. Percent Germination

- 10. State of Origin
- 11. Test Date
- 12. Agricultural Marketing Service Number
- 13. Producer Name & Address

Seed Label Example



LANDSCAPER MIX LAWN SEED

Size: **5lbs/2.27 kg**

Purity %	Name	Germ	Origin
24.84	KENTUCKY BLUEGRASS 98/85	90	MN
19.84	ATLANTIS KENTUCKY BLUEGRASS	85	OR
19.76	CREeping RED FESCUE VNS	88	CAN
14.96	PERENNIAL RYEGRASS VNS	90	MN
9.78	PALMER V PERINNIAL RYEGRASS	90	OR
9.98	ANNUAL RYEGRASS VNS	89	OR



Other: 0.03
Inert: 0.81
Weed: 0.00
Lot: L4AU12
Item #: 002749

NOXIOUS WEED: (USUALLY NONE)

****VARIETY NOT STATED (VNS)**

Prince Corporation

WI 2000080

8351 Cty Rd H Marshfield, WI 54449

Seed Characteristics

Species	Days to Establish	Rhizomes Self-Repairing	Grey Leaf Spot Resistance	Wear Tolerant	Drought Tolerant	Shade Tolerant	Cold Tolerant	Endophyte (Disease/ Insect Resistant)
Perennial Ryegrass	5-10	No	Yes	Very Good	Fair	Fair-Good	Fair	High
Kentucky Bluegrass	21-28	Yes	No	Good	Good	Poor	Very Good	None
Tall Fescue	14-21	Some	No	Very Good	Excellent	Very Good	Good	High
Chewings Fescue	14-21	No	No	Good	Good	Very Good	Good	Low
Creeping Red Fescue	14-21	Yes	No	Fair	Good	Very Good	Good	Medium
Hard Fescue	14-21	No	No	Fair-Poor	Good	Very Good	Good	Low

What Grass Seeds Need to Grow

Soil to Seed Contact

- Well prepared seed bed
- Even distribution of seed
- Right variety for conditions
- Fresh seed – tested and labeled
- Correct timing and soil temperature



Courtesy of bonide.com

Consistent Moisture Levels

- Moist soil – Pre-moisten if dry
- Source of moisture – irrigation
- Avoid over watering or puddles
- Use mulch if necessary
- Know germination days
- Avoid “Wet-Dry-Wet” situations

What Grass Seeds Need to Grow

Consistent Soil & Air Temperatures

- Avoid Extremes
 - Too Hot – Seed will die or dry out
 - Too Cold – Poor germination
- Time Planting for Best Results
 - Spring planting – Plan weed control
 - Fall planting – Temperatures and Water

Nutrient Sources

- Use a starter fertilizer
- Provide long lasting nutrients that last while grass is germinating



FERTILIZER

- 3 Major Plant Nutrients
- Understanding Phosphorus
- Understanding Fertilizer Labels
- How Much Nitrogen is in the Bag?
- Applying the Fertilizer

3 Major Plant Nutrients N-P-K

Nitrogen (N)

- Leaf Growth
- Deep Green Color
- Photosynthesis

Phosphorus (P)

- Root Growth
- Disease Resistance in Roots
- Energy Transfer and Storage

Potassium (K)

- Stimulates Growth
- Water and Nutrient Transfer
- Plant Vigor and Disease Resistance

Secondary Nutrients

Sulfur (S)

Calcium (Ca)

Magnesium (Mg)

Iron (Fe)

Boron (B)

Copper (Cu)

Zinc (Zn)

Manganese (Mn)

Understanding Phosphorous

Zero Phosphorous Fertilizers

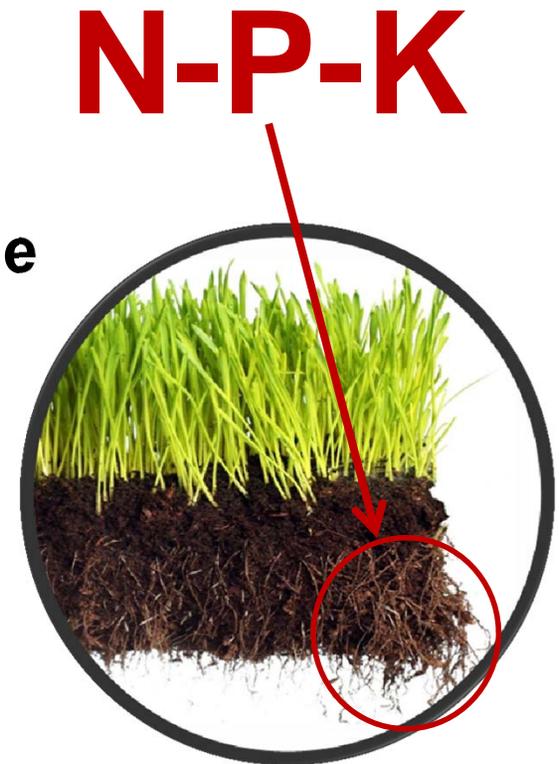
- Mandated in many states
- Runoff concerns into waterways
- Algae growth weed bloom

Expectations to Zero Phosphorous Rule

- Starter Fertilizers
- Non-lawn fertilizers (Superphosphate)
- Organic fertilizers (Milorganite)

Providing Phosphorous

- Include Boron (B) as micronutrient
- Boron (B) unlocks native phosphorus in soil
- Helps replace phosphorous in fertilizer



Understanding Fertilizer Labels

Guaranteed Analysis		26 - 4 - 12
Total Nitrogen	26%	1
3.2% Ammoniacal Nitrogen		
9.7% Water Insoluble Nitrogen*		
3.4% Urea Nitrogen		
9.7% Other Water Soluble Nitrogen*		
Available Phosphate (P ₂ O ₅)	4%	2
Soluble Potash (K ₂ O)	12%	3
Total Sulfur (S)	1.5%	4
1.5% Combined Sulfur (S)		
Nutrient Sources: Ammonium Phosphate, Ammonium Sulfate, Isobutylidene Diurea, Urea, Methylene Urea, Muriate of Potash.		
Chlorine (Cl) not more than	10.0%	5
* 19.4% Slowly Available Nitrogen from Methylene Ureas and IBDU.	F699	
Information regarding the contents and levels of metals in this product is available on the Internet at http://www.regulatory-info-lebsea.com		

The diagram shows a fertilizer label with the following callouts:

- 1: Total Nitrogen (26%)
- 2: Available Phosphate (4%)
- 3: Soluble Potash (12%)
- 4: Total Sulfur (1.5%)
- 5: Chlorine (Cl) not more than (10.0%)
- 6: Total percentage of fast release nitrogen (3.2% Ammoniacal Nitrogen + 3.4% Urea Nitrogen = 6.6%)
- 7: Ammoniacal Nitrogen (3.2%) and Sulfur (1.5%)

1. Total nitrogen (N)%
2. Total phosphate (P)%
3. Total soluble potash (K)%
4. Any micronutrients (if any) will follow the main nutrients
5. The total percentage of the bag that is slow release nitrogen
6. The total percentage of fast release nitrogen
7. Ammonical nitrogen and sulfur nutrients provide fast early green up.

Fertilizer Label Examples

GUARANTEED ANALYSIS

Total Nitrogen (N)	27%
8.0% Ammoniacal Nitrogen	
6.2% Water Insoluble Nitrogen*	
1.8% Urea Nitrogen	
11.0% Other Water Soluble Nitrogen*	
Soluble Potash (K₂O)	5%
Sulfur (S)	11.0%
11.0% Combined Sulfur (S)	
Derived from: Ammonium Sulfate, Urea, Methylene Ureas, Sulfate of Potash	
Chlorine (Cl) not more than.....	2.0%
*17.2% Slowly Available Nitrogen from Methylene Ureas.	F699

Guaranteed Analysis 10-10-10	
Total Nitrogen (N)	10%
3.91% Ammoniacal Nitrogen	
6.09% Urea Nitrogen	
Available Phosphate (P ₂ O ₅)	10%
Soluble Potash (K ₂ O)	10%
Derived From: Diammonium Phosphate, Muriate of Potash, Urea F1290	

16-0-8 GUARANTEED ANALYSIS

Total Nitrogen (N)	16%
0.82% Ammoniacal Nitrogen	
11.18% Urea Nitrogen	
4.00% Water Soluble Nitrogen*	
Soluble Potash (K ₂ O).....	8%
Boron (B)	0.02%
Copper (Cu).....	0.05%
Iron (Fe)	0.10%
Manganese (Mn).....	0.05%
Zinc (Zn).....	0.05%
Derived From: Ammonium Sulfate, Urea, Muriate of Potash, Urea Formaldehyde, Sodium Borate, Copper Oxide, Iron Oxide, Manganese Oxide, Zinc Oxide.	
*4.00% Slowly Available Nitrogen from Urea Formaldehyde.	

How Much Nitrogen is in the Bag?

GUARANTEED ANALYSIS

The label on all fertilizer bags is required to show the percentage by weight of nitrogen, available phosphate and soluble potash. This is called the guaranteed analysis of the fertilizer.

- The first number is Nitrogen (N), which promotes overall grass shoot growth.
- The second number is available Phosphate (P_2O_5), which promotes strong root growth.
- The third number is soluble Potash (K_2O), which helps grass withstand stress, drought or disease.

For example, a 24-2-8 fertilizer has 24% nitrogen, 2% available phosphate and 8% soluble potash. Nitrogen, phosphate and potash are also sometimes referred to as N-P-K.

To understand how much of each nutrient is being applied to your lawn, you must multiply the weight of the fertilizer bag by the percentage of each nutrient. For example, a 30 lb. bag of fertilizer rated 24-2-8 contains:

N: $24\% \times 30 \text{ lbs} = 7.2 \text{ lbs. Nitrogen}$

P: $2\% \times 30 \text{ lbs} = 0.6 \text{ lbs. Available Phosphate}$

K: $8\% \times 30 \text{ lbs} = 2.4 \text{ lbs. Soluble Potash}$

How Much Nitrogen is in the Bag?

How to Calculate the Amount of Nitrogen in a Fertilizer Bag

Do not be misled by a large nitrogen number on the fertilizer bag (the first number in the N-P-K analysis). To find the amount of nitrogen in a bag of fertilizer, you must calculate the pounds of nitrogen per 1,000 sq. ft.

To calculate the pounds of nitrogen in a bag of fertilizer, multiply the weight of the bag by the percent nitrogen (this is the first number in the N-P-K designation on the front of the bag). This will tell you the pounds of nitrogen in the bag.

Then divide the pounds of nitrogen by the area the bag states it will cover to get the pounds of nitrogen per 1,000 sq. ft. Note: Fertilizer bags usually come in 5,000 or 10,000 sq. ft.

For example: A 19 lb. bag of fertilizer with an analysis of 26-4-12 (N-P-K) covering 5,000 sq. ft.

$19 \text{ lbs.} \times (26 \div 100) = 4.94 \text{ lbs}$ Total nitrogen in the bag

$4.94 \text{ lbs nitrogen in the bag} \div 5,000 \text{ ft}^2 \text{ bag} = \underline{0.98 \text{ lbs. of nitrogen} \div 1,000 \text{ ft}^2}$

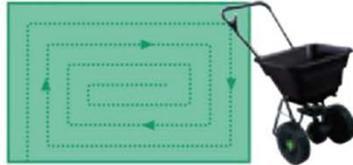
Applying the Fertilizer

27-0-5

SUGGESTED SPREADER SETTINGS

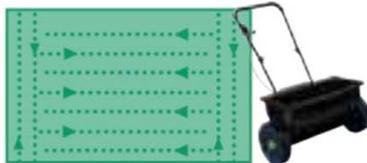
Broadcast Spreader Settings:

Apply in a single pass by starting on the outside border and apply in a circular path working toward the center as shown in diagram.



Drop Spreader Settings:

First make two passes along the top of the area you'll be covering. Then make two passes along the bottom of the area. Then move back and forth along the long part of the lawn. Overlap the coverage slightly and on each pass, as you reach the strips at the top and bottom of the area to be covered, shut off the spreader. It's also important to shut off the spreader when you are stopped. See diagram provided.



Follow directions to avoid over fertilizing which may harm your lawn. The spreader settings provided are approximate. Suggested settings were calibrated and field tested. However, age and condition of spreader, speed of operation and evenness of terrain may require slightly different settings for desired coverage.

0.9 lb.
NITROGEN
Application Rate
Covers up to 5,000 sq. ft.

Broadcast Spreader	Setting (3.3 lbs. / 1000 Sq. Ft.)
Greenview Jet-Spred SS1	14
Greenview Jet-Spred III	3 1/2
Agri-Fab® Rotary	3 1/2
Earthway Rotary	14
Lesco Rotary (letter/numeric)	H/15
Red Devil Rotary (1-20)	6
Republic Rotary	3
Sears Craftsman Rotary	3 1/2
Scotts Speedy Green	4
Scotts Edgeguard	4

Drop Spreader	Setting (3.3 lbs. / 1000 Sq. Ft.)
Greenview Drop Spred XP1	15
Greenview Drop Spred III	6
Agri-Fab Drop	6 1/2
Red Devil Drop (1-20)	9
Republic Drop	6 1/2
Scotts Drop PF	6

27% N x 16.5lb = 4.46 lb of Nitrogen
bag cover 5000 sq ft

4.46 / 5 (5,000 sq ft bag) = .9 lb nitrogen per 1000 sq ft

Using a Spreader



LAWN CARE BASICS

- Watering
- Mowing
- Thatch Control
- Weeds

Watering Basics

Average 1 inch per week

- Best to apply at once
- Water the top 5-6 inches where the root system is
- Morning is the best time to apply



Mowing Basics

- Keep turf 2 ½” – 3 ½” tall
- 1/3 Rule – never remove more than 1/3 of leaf tissue (ex. Turf 4” tall then set mower no lower than 2 ½”)
- Frequency – better to mow when needed rather than a fixed schedule
- Mow when turf is dry
- Keep mower blades sharp



Thatch Control

What is thatch?

- Thatch is a tightly interwoven layer of living and dead tissue existing between the green vegetation and soil surface.
- It is composed primarily of products from stems, leaf sheaths, and roots that are fairly resistant to decay.
- Although a little thatch improves the wear tolerance of a lawn, excessive thatch harbors disease organisms and insects making the lawn more susceptible to damage from disease and drought.

How much is too much?

- Anything more than a half-inch to an inch

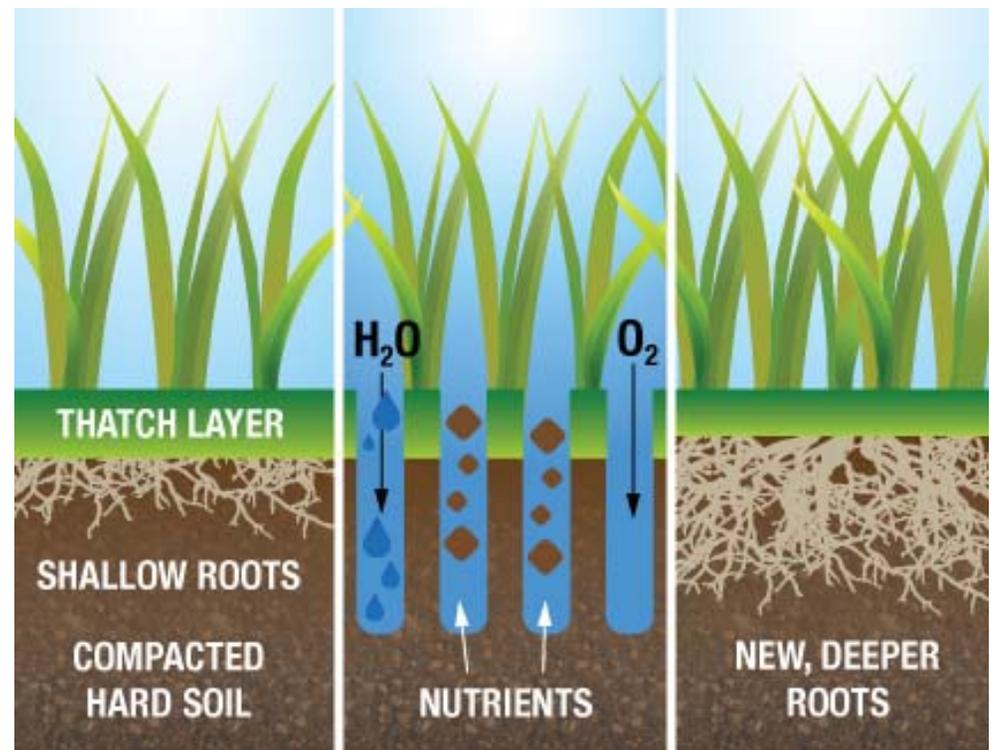
Thatch Control

Thatch Removal

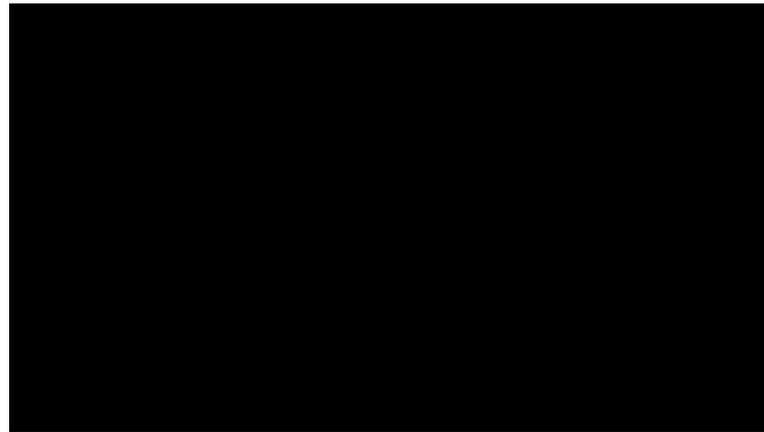
- Biological
- Aeration
- Mechanical (Power Rake)

Thatch Prevention

- Fertilization
- Aeration
- Mowing
- Pesticides



Thatching, Aerating & Overseeding Explained



Weeds

Annual

- Complete lifecycle from seed within a year
- Ex: Crabgrass

Biennials

- Live for more than 1 year but not more than 2 years
- Ex: Bull Thistle

Perennial

- Live for more than 2 years
- Ex: Dandelions, Ground Ivy



There are 2 Main Types of Weeds

Broadleaf Weeds

- Wide leaves with branched veins within the leaf
 - Dandelion
 - Ground Ivy (Creepy Charlie)
 - Chickweed
 - Clover
 - Plantain
 - Black Medic



Grassy Weeds

- Look like grass with parallel veins within the leaves
 - Crabgrass
 - Goose Grass
 - Annual Bluegrass
 - Barnyard Grass
 - Nutsedge (Nutgrass)
 - Johnson Grass
 - Bamboo & Reeds



LAWN PROBLEMS

- Insects
- Japanese Beetles
- Rust

There are 2 Main Types of Insects

Below Ground

- Grubs



Above Ground

- Sod webworm
- Leaf hoppers
- Aphids
- Chinch Bugs
- Ants
- Japanese Beetle

Japanese Beetles

Flower and Foliage Damage by Adults

- Total Defoliation of plants
- Destroys flowers on most plants
- Insects exist in large numbers
- Can be on edibles and ornamentals

Turf Damage Kills Large Patches of Lawn

- Feeds on roots
- Often no recuperation
- Turf rolls up like a carpet in extreme cases

Damaging as Larva and Adult

- Larva damages roots – especially turf
- Adult attacks ornamentals and edible plants



Rust

Conditions

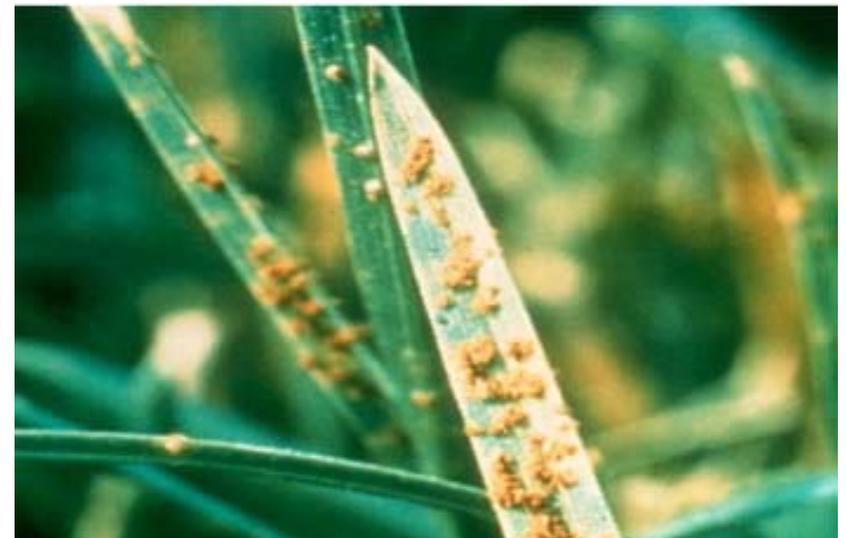
- Cool to warm weather
- High humidity, low soil moisture, low nitrogen fertility, shady areas

Symptoms

- Yellow, orange, or reddish brown cast
- Usually appears in late summer or fall when grass grows slowly
- Foliar does not kill the turfgrass
- Common on newly seeded areas

Control

- Fertilize & water slow growing turf
- Prune shady areas to increase light penetration
- Plant resistant varieties



QUESTIONS?
