



# **JH Biotech, Inc.**

*“Biotechnologies for Safer Agriculture”*

# PRODUCTS

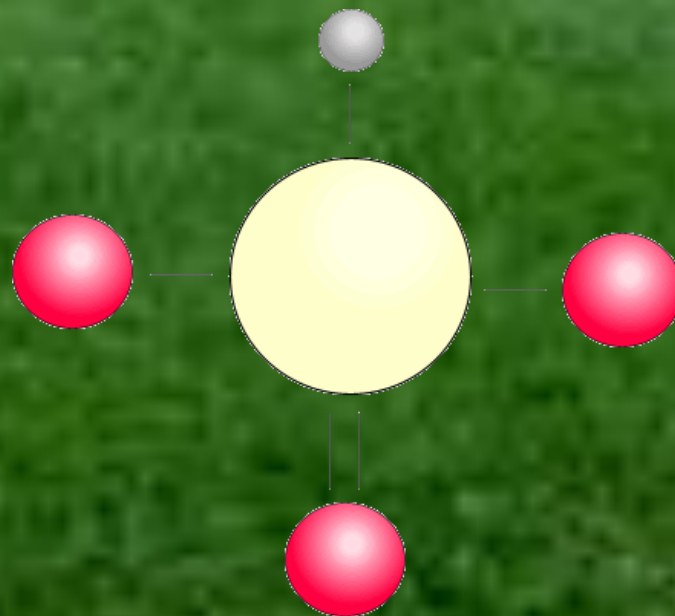
Phosgard Fertilizer

Fosphite<sup>®</sup> Fungicide

# PHOSGARD PRODUCTS

- Available Analyses:

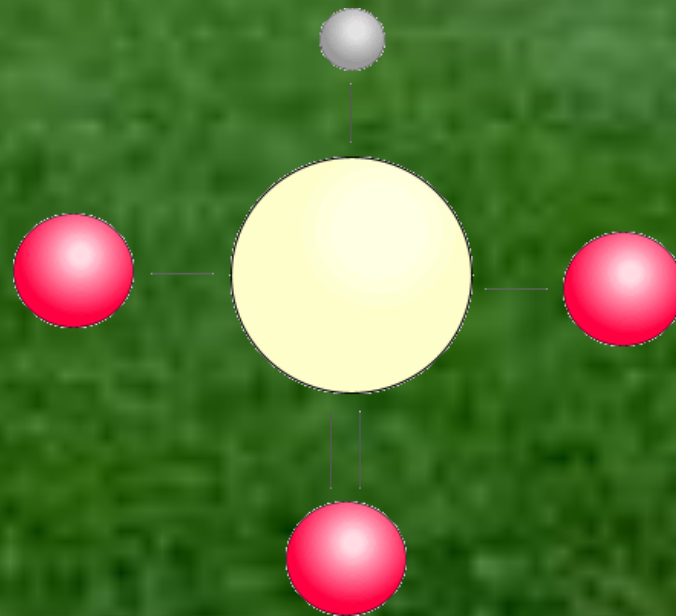
- 4-25-15
- 0-28-25
- 0-0\*- 25
- 0-32-25 +
- 0-40-0
- 0-60-0
- 2-40-16
- 5-20-0 3Cu new!



$\text{H-PO}_3^{-2}$  Phosphite

# PHOSGARD PRODUCTS

- Phosphorous Acid Based
- Buffered with Potassium Hydroxide
- Nitrogen source is Urea
- pH range 6.0-6.5
  - 4-25-15 and 0-28-25 and 0-32-25+
- pH of 2
  - 0-40-0 and 0-60-0



$\text{H-PO}_3^{-2}$  Phosphite

# PHOSPHITES vs. PHOSPHATES

- $\text{PO}_3$  Compounds
    - Phosphites
    - Phosphorous acid
  - High solubility
  - Slow metabolic breakdown
    - 7weeks half life
  - Easily absorbed by leaves and roots
- $\text{PO}_4$  Compounds
    - Phosphoric acid
  - Relatively insoluble
  - Used in plant's P metabolism
  - Primarily root absorbed

# PHOSGARD® FERTILIZER

- Stabilized Phosphite. A source of P & K for use as a foliar and soil applied fertilizer
- Boost vigor and plant growth
- Activates the plant's immune system
- $\text{PO}_3$  Remain in the soil solution, slowly converted inside plants, stimulate root development, resulting in better plant growth & vigor
- Compatible with most pesticides and fertilizers
- Helps improve pesticides & fertilizer solubility
- Phosgard Cu 5-20-0 3Cu, NEW! (Cu is coated w P)



Potassium deficiency

# PHOSPHITES IN THE SOIL

- Taken up rapidly by roots
- May be secreted by roots
- Remains more available as  $\text{PO}_3$
- Are oxidized by soil microbes into  $\text{PO}_4$
- Are not detrimental to mycorrhizal fungi
- Are environmentally benign

# PHOSGARD TIMING

- It is best to use it year-round as a maintenance product
- Foliar application at 1 quart per acre after first leaves appear
- Apply to turf and ornamentals after plants become established
- Repeat every 4 to 6 weeks

# PHOSGARD INCOMPATIBILITIES

- High pH Materials
  - Humic Acids and other materials pH > 8
- Copper based compounds
  - Not compatible
  - Wait 10 days before applying copper to a Phosgard treated turf / plants

# PHOSGARD INCOMPATIBILITIES

- High concentrations of Calcium Fertilizers
  - Keep dilution rates high when applying Phosgard with calcium
  - 1 quart of Phosgard and 1 quart of Calcium in at least 50 gallons of water (1:200)
  - Also “safer soaps”

# EFFECT OF PHOSGARD ON ROOT GROWTH

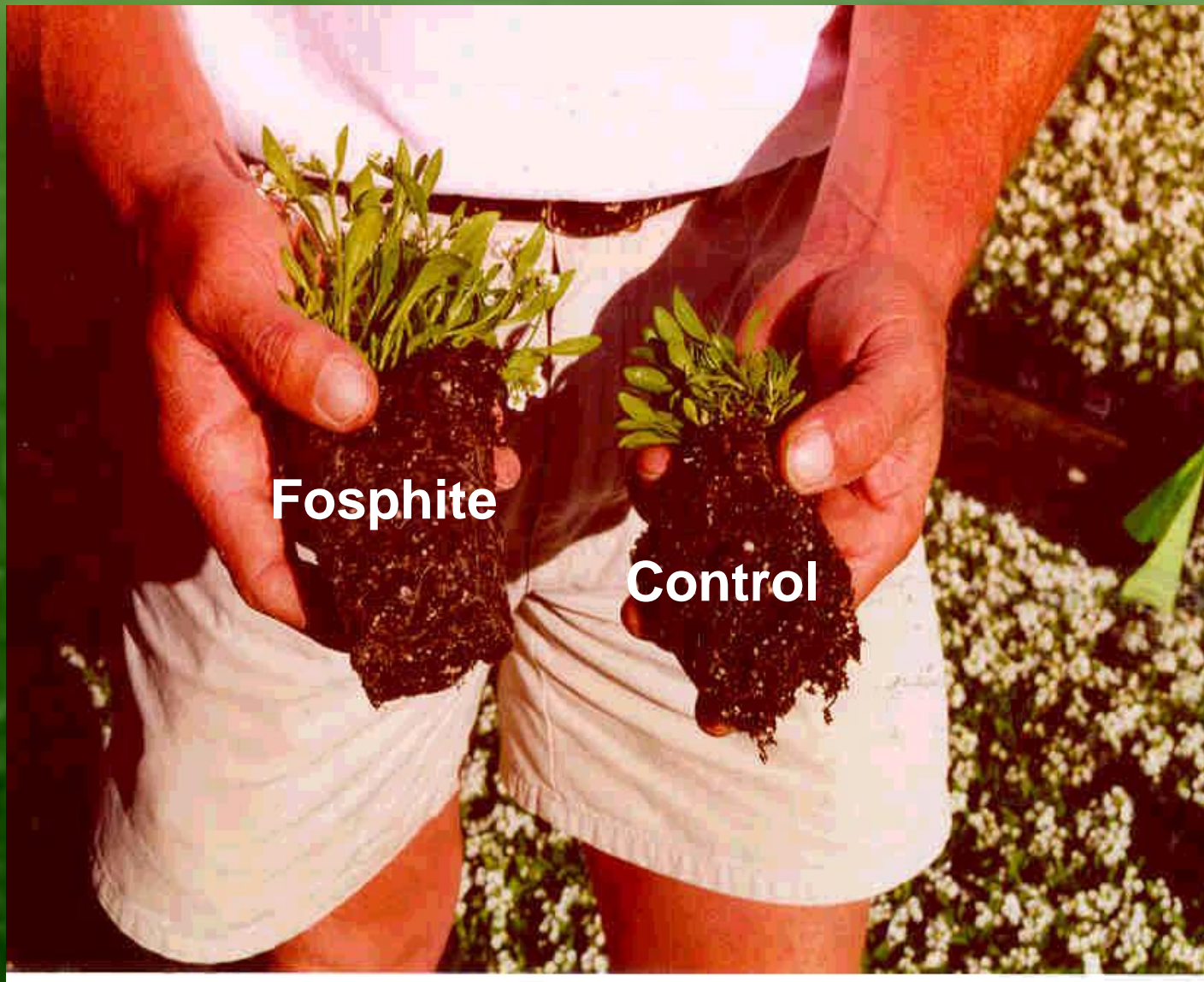
Phosgard simulates early growth and root formation.



Control

Phosgard

Snapdragon



**Plants are the same age**

# FOSPHITE<sup>®</sup> FUNGICIDE

- Approved by EPA for turf & ornamental uses
- Systemic product for foliar and soil applications
- Helps cure and / or prevent Powdery Mildew, Phytophthora, Pythium and Rhizoctonia Diseases
- Multiple sites of action inhibiting the development of the phosphite resistant strains (Difficult for disease resistance)
- Increases production of phytoalexins (natural fungicides)
- Compatible with most pesticides and fertilizers

# Brown Patch *Rhizoctonia solani*



- Nov-May temperature <80F and high humidity
- Infection occurs during rain or irrigation
- Soft, dark rot will be at the base of the leaf, leaf will easily pull off and smell rotten.
- Disease begins in small patches 1' (yellow to reddish-brown)
- Roots are not affected

**Brown Patch** *Rhizoctonia solani*



# Dollar Spot *Sclerotinia homoeocarpa*



- Affected areas are less than 3 inches in diameter
- Areas do not expand but multiply
- Lesions are irregular, tan w/brown borders
- Affects all warm season grasses
- Fall through spring, dry roots, humid canopy.

# FOSPHITE<sup>®</sup> FUNGICIDE

## TURF RATES

- Recommend using
  - 5 to 10 fl.oz. per 1000 ft<sup>2</sup> as fertilizer with pesticide sprays every 3-4 weeks
- Can be applied as a foliar spray or soil drench
- Always check label for additional details

# FOSPHITE® FUNGICIDE

## ORNAMENTAL RATES

- Foliar:
  - 1/3 to 2/3 fl.oz. per gallon
- Soil:
  - 1 to 2 pints per cubic yard of soil (incorporated)
- Root Dip:
  - 1/3 fl.oz. per gallon
- Always check label for additional details

# PHOSGARD SUMMARY

- Phosgard Increases Root Mass and Growth Rate
- Phosgard Increases Top Growth
- Phosgard Increase Nutrient Levels
- Phosgard Increases Yield and Quality

*Thank you!*

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