

SUPPLEMENTAL LABELING

READ AND FOLLOW THE ENTIRE LABEL BOOKLET FOR SHEPHERD® FUNGICIDE BEFORE PROCEEDING WITH THE USE DIRECTIONS CONTAINED IN THIS SUPPLEMENTAL LABELING.

“LABEL” as used in this supplemental labeling refers to the label booklet for this product and this supplement.

SHEPHERD® FUNGICIDE

An ArborSystems™ Direct-Inject™ Chemical. For systemic fungicide suppression of selected diseases in ornamental trees. For use by professional arborists/applicators. To be used only with the ArborSystems Direct-Inject Tree Injection System.

EPA REG. NO. 69117-3

To Treat – Oak Wilt, Dutch Elm Disease,
Anthracnose and Leaf Diseases

Sold by:



P.O. Box 34645 • Omaha, NE 68134

Toll-Free: 1-800-698-4641 • Phone: (402) 339-4459 • FAX: (402) 339-5011

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

This label must be in the possession of the user at the time of application. All applicable directions and precautions in the label booklet for this product must be followed.

INDICATIONS AND TREATMENT TIMING

Shepherd Fungicide is a systemic fungicide for use as an injection for prevention and treatment of:

- (1) Oak Wilt (*Ceratocystis fagacearum*) of Oaks (*Quercus* spp.)
- (2) Dutch Elm Disease (*Ophiostroma ulmi*) of Elms (*Ulmus* spp.)
- (3) Plane Anthracnose (*Apiognomonia veneta*) of Sycamores (*Platanus* spp.)
- (4) Leaf Diseases (*Gymnosporangium juniperi-virginianae*, *Pucciniastrum goeppertianum* and *Venturia inaequalis*, etc.) in non-bearing ornamental Crabapple.

Table 1. Ornamentals – Plant Species (Numbers in parentheses refer to diseases controlled. See Table 2.)		
Wood Ornamentals		Nonbearing Fruits and Nuts (Nurseries and Landscape Plantings)
Ash (4c)	Lilac (4c)	Apple (3q, 4d, 5a)
Azalea (2c, 4b)	Oaks (3p)	Cherry (2b, 3d)
Crabapple (3c, 3q, 4c, 5a)	Pines (1b, 1c)	Citrus (3m)
Crape Myrtle (4a)	Poplars (5b)	Nectarine (2b)
Dogwood (3h, 4c)	Pyracantha (3o)	Peach (2b)
Douglas Fir (5b)	(Outdoor Uses Only)	Pecan (3b, 3c, 3f, 3l, 3n, 4e)
Hawthorn (5a)	Shasta Fir (5e)	Plum (2b)
Juniper (1a)		Walnut (3j)

OAK WILT AND DUTCH ELM DISEASE

Use Shepherd Fungicide **only** as a preventative for Oak Wilt and Dutch Elm Disease. These fungi infect the vascular system and cause plugging throughout the tree; treatment of infected trees is rarely successful.

Symptomless trees immediately adjacent to a diseased tree should be considered infected and may not respond to treatment. Symptomless trees separated by a primary plow line from diseased trees may be uninfected and can be treated. Do not use on trees weakened by extreme environmental conditions such as heat, drought, flooding, etc. It is recommended that Shepherd Fungicide be administered by applicators trained in injection techniques and in the identification of Oak Wilt and Dutch Elm Disease.

In the upper Midwest, treat oaks after June 15. Wounds in oaks in the upper Midwest between May 15 and June 15 attract insects that transmit the oak wilt pathogen. Applications to oaks in other areas and to elms may be made at any time during the growing season, spring through fall, provided the bark is pliable enough to accept the chemical injections. One application provides season-long protection. Reevaluate disease conditions annually, particularly in high disease-risk areas or for high-value trees – retreatment can be made 12-months after initial treatment and annually thereafter. Inject Shepherd Fungicide into the flare, or base of the tree, to ensure even distribution throughout the vascular system.

Table 2. Diseases	
1. Conifer Blights	j. <i>Gnomonia leptostyla</i> (Anthracnose)
a. <i>Phomopsis juniperovora</i> (Phomopsis Blight)	k. <i>Heterosporium echinulatum</i>
b. <i>Sirococcus strobolinus</i> (Tip Blight)	l. <i>Mycosphaerella caryigena</i> (Downy Spot)
c. <i>Sphaeropsis sapinea</i> (Diplodia Tip Blight)	m. <i>Mycosphaerella fructicola</i> (Greasy Spot)
2. Flower Blight	n. <i>Septoria</i> spp. (Leaf Scorch)
a. <i>Ascochyta chrysanthemi</i> (Ray Blight)	o. <i>Spilocaea pyracanthae</i>
b. <i>Monilinia</i> spp.	p. <i>Tubakia dryina</i>
c. <i>Ovulinia</i> spp.	q. <i>Venturia inaequalis</i> (Scab)
3. Leaf Blights/Spots	4. Powdery Mildew
a. <i>Alternaria</i> spp.	a. <i>Erysiphe</i> spp.
b. <i>Cercospora</i> spp. (Brown Leaf Spot)	b. <i>Microsphaera</i> spp.
c. <i>Cladosporium</i> spp. (Scab)	c. <i>Oidium</i> spp.
d. <i>Coccomyces hiemalis</i>	d. <i>Podosphaera</i> spp.
e. <i>Colletotrichum</i> spp.	e. <i>Sphaerotheca pannosa</i>
f. <i>Cristulariella</i> spp. (Zonate leafspot)	5. Rust
g. <i>Diplocarpon rosae</i> (Blackspot)	a. <i>Gymnosporangium juniperi-viginianae</i>
h. <i>Discula</i> spp. (Anthracnose)	b. <i>Melampsora occidentalis</i>
i. <i>Fabraea maculata</i> (syn. <i>Entomosporium maculata</i>)	c. <i>Phragmidium</i> spp.
	d. <i>Puccinia</i> spp.
	e. <i>Pucciniastrum goeppertianum</i>
	f. <i>Uromyces dianthi</i>

Note: (1) Accurate diagnosis of Oak Wilt and Dutch Elm Disease is important, since Shepherd Fungicide provides only suppression of the diseases listed on this label. (2) Shepherd Fungicide will be most effective when used in conjunction with other cultural practices recommended for management of Oak Wilt and Dutch Elm Disease (removal of dead elm trees, pruning of diseased tree limbs and branches, control of bark beetles, etc.).

ANTHRACNOSE AND LEAF DISEASES

For these diseases, preventative applications of Shepherd Fungicide are most effective when applied in the late summer, around one month prior to the typical first frost. This allows the chemical to translocate into the bud before leaf drop. Next spring when the tree leafs out, the chemical will be in place to protect the leaf. Annual treatments are required for prevention.

Note: Before using on trees or diseases which are not listed, test on a small scale basis. Apply the recommended rate for a particular type of disease and evaluate for phytotoxicity and disease control prior to widespread use.

Treatments: The number of injection sites is based on 1 injection for every 3" – 5" of trunk circumference.	Dosage per Injection Site
Oak Wilt Disease for an uninfected Live Oak (not including Red Oak)	3-5 ml
Dutch Elm Disease for an uninfected Elm	5-10 ml
Anthracnose in Sycamore	2 ml
Leaf diseases in Oaks and non-bearing ornamental Cherry, Citrus, Crabapple, Pecan, Pyracantha and Walnut	1-2 ml
Powdery Mildew in Ash, Crape Myrtle, Dogwood, Lilac and non-bearing ornamental Crabapple and Pecan	1-2 ml
Conifer Blights such as Tip Blight and Diplodia Tip blight of Pines and Junipers	4 ml
Flower Blight of non-bearing ornamental Cherry, Peach, Plum	1-2 ml
Rust on Douglas Fir, Hawthorn, Poplars, Shasta Fir, and non-bearing ornamental Crabapple	1-2 ml

Note: Because some treatments require large amounts of chemical per site, there may be occasions where it is difficult to keep all of the chemical dose in the injection site. If this is experienced, two options are possible:

- 1) Reduce dosage volume by half and double the number of injection sites, or
- 2) Inject half the dose at each site, mark the tree, continue treating other trees, then return to the marked tree and inject remaining dosage in each site.

Read the "Notice of Warranty" in the label booklet for Shepherd Fungicide before using. These terms apply to this supplemental labeling and if these terms are not acceptable, return the product unopened at once.