

# Foraging Around



**By Dr. John E. Baylor**  
 Director of Market Development  
 Beachley-Hardy Seed Company

As with any member of a Royal Family, alfalfa has more pressures on it than most other perennial forages. And, disease wise, 1990 was no exception.

Over the past several years a great deal of attention has been paid to the five major diseases attacking alfalfa in the East - Bacterial Wilt, Phytophthora Root Rot, Fusarium Wilt, Anthracnose, and Verticillium Wilt. And few would dispute that these are the major five. Alfalfa breeders throughout the country have devoted most of their breeding efforts to developing varieties with resistance to these diseases. And, when we refer to varieties with multiple pest resistance we're referring primarily to resistance to these five diseases.

But there are other diseases attacking alfalfa too. And in this column I'd like to review these briefly and hopefully point out their relative importance.

### Leaf And Stem Disease

During the past growing season Dr. Ken Leath, Forage Pathologist, at the USDA Pasture Lab, has identified no fewer than five leaf and/or stem diseases on alfalfa. Here's a brief run-down.

**Common Leaf Spot** - a leaf disease that occurs wherever alfalfa is grown and develops during moist periods at moderate to cool temperatures.

**Lepto Leaf Spot** - generally infects young leaves, and the greatest damage occurs on young growth after clipping if favorable,

moist weather conditions occur at that time. In older growth only the young upper leaves become infected and have typical symptoms, but seldom die.

**Stemphylium Leaf Spot** - present in much of the alfalfa growing areas and is favored by warm, moist weather.

**Spring Black Stem** - also referred to as Phoma leaf and stem disease. Blacked stems are a normal symptom. Favored by cool, moist weather.

**Bacterial Leaf Spot** - a relatively uncommon disease in our area, but never-the-less identified several times this year. Again favored by moist weather.

I'm sure you get the picture on these diseases. All are favored by moist weather. Some develop under cooler conditions, others when it's hot and muggy. But, regardless, weather conditions in 1990 were ideal for their development.

Under severe conditions all will cause a loss of leaves, and, thus, loss in quality. They seldom cause stand loss. To date alfalfa breeders have these diseases on the back burner in terms of breeding for resistance. But they will get more attention in the years ahead.

### Other Diseases

There are two other diseases you may have heard of. One is Sclerotinia Crown and Stem Rot, the other Aphanomyces.

Sclerotinia does pose a threat under certain conditions. You may notice it in early spring on isolated

plants of new late summer seedings, and especially in no-till plantings. Infection occurs in the fall. But you'll find it in the spring when the crown or basal part of the stem may be soft and discolored. Later on a white fluffy mass grows over the area forming hard, black bodies called sclerotia. These stick to the surface or may become embedded in the stems or crowns. Remember, you're most likely to observe this disease in the spring on no-till seedings made the previous summer, especially in southern Pennsylvania, Maryland and Virginia. And under epidemic conditions it can cause stand thinning. Red clover seedings are more susceptible than alfalfa, but if the organism is present most legumes can be affected.

Finally, Aphanomyces is a relatively newcomer as a potential alfalfa disease problem. But it has gotten some press. Aphanomyces root rot is caused by a water-loving fungus, and along with two other fungi, Phytophthora and

Pythium, are common causes of seedling damping-off and poor stand establishment of alfalfa. This disease has been known as a pathogen of peas and beans for decades. And, while the organism has been isolated from soils in several eastern states, to date its effect on alfalfa establishment or productivity has not been documented outside of the pea growing areas of Central Wisconsin.

Some progress had been made to develop varieties with limited resistance to this disease. However, to complicate the problem Wisconsin workers recently detected a second race (race 2) of the organism which is highly pathogenic to varieties with resistance or tolerance to race 1. So, first of all, we don't know if the disease is or will be a problem in the Northeast. Never-the-less, in terms of resistance, for alfalfa breeders it's "back to the drawing board" in search of Aphanomyces-resistant varieties.

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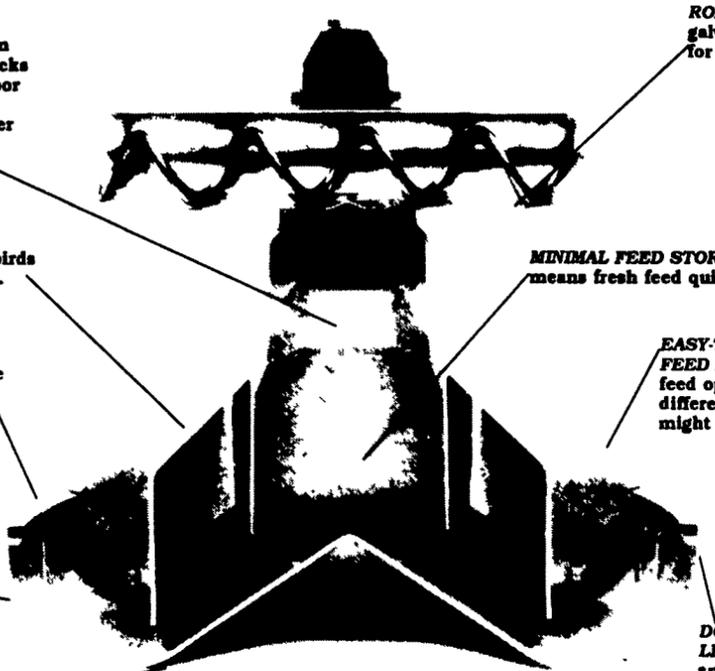
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