Fosphite®

ICEBERG LETTUCE Tech Update

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JH Biotech Biotechnologies for Safer Agriculture

LETTUCE DOWNY MILDEW CONTROL

Downy mildew is a serious disease of lettuce that occurs worldwide. Downy mildew, primarily a foliar disease, has a direct effect on yield and quality, since it affects the marketable portion of the crop. Although yield losses in the field at harvest may be substantial, downy mildew's impact is often accentuated by significant postharvest losses that occur during transit or storage. During the past several years, costs to control downy mildew have risen dramatically.[1]

CAUSAL AGENT AND SYMPTOMS

Downy mildew on lettuce is caused by the fungus *Bremia lactucae*. The fungus is an obligate parasite, i.e., it is capable of infecting and colonizing only living host tissue. The fungus belongs to a class of relatively primitive fungi known as the Oomycetes. Other well-known members of this group are Pythium and Phytophthora.

Bremia lactucae is capable of infecting any lettuce growth stage from seedling to mature plant. Head, leaf, and cos lettuce are all susceptible. Although downy mildew is usually most severe on the older outer leaves, the disease may become systemic over time, infecting lettuce heads internally and colonizing even the roots. Downy mildew lesions may also serve as portals for secondary invaders, such as the fungus *Botrytis cinerea*.[1]

FOSPHITE® is a systemic fungicide for the control of downy mildew on lettuce as well as all other susceptible crops. FOSPHITE contains mono- and dipotassium salts of phosphorous acid. It is a liquid fungicide and carries a reduced risk designation from the US EPA. FOSPHITE fits well into any IPM program and is compatible with most other pesticides and fertilizers. (Consult product label for compatibility details and application instructions.)

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION RESEARCH

Comparison of Fungicides for Control of Downy Mildew on Iceberg Lettuce, 2005

Fungicide efficacy against downy mildew on iceberg lettuce

was compared in a study conducted at the University of California Desert Research and Extension Center in Holtville, CA. Disease on 'Coyote' iceberg lettuce was evaluated in this trial. Results are outlined in the table on reverse. Fosphite applied six times at two week intervals at a 3 qt. per acre rate showed superior results compared to all other treatments. Fosphite in tank mix combinations with Acrobat also showed excellent results in controlling downy mildew. In this trial, the Fosphite treatments showed statistically significant differences from all other treatments in efficacy with the final evaluation date showing no legions present on any of the tested plants. Disease pressure was reported to be high in this trial, emphasizing the effectiveness of Fosphite as a downy mildew control agent.

To find Fosphite, contact you local chemical dealer or call (800) 428-3493.

1.Fact Sheet HS-147, a series of the Horticultural Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: December 1992.

Symptoms of downy mildew appear initially as chlorotic yellow spots on the upper leaf surface (image 1). Under favorable conditions, a white cottony-like fungal growth that is indicative of sporulation (formation of fungal spores) generally appears on the lower leaf surface within 24 to 48 hours following initial symptom development (image 2). During the early stages of disease development, spots are often delineated by the veins of the leaf, giving lesions a rather angular appearance (image 3).

As the disease progresses, only larger veins obstruct lesion expansion. Lesions become increasingly chlorotic with time and eventually turn brown (image 4).

Lettuce Downy Mildew Control Trial Results

Treatments A[z]	Rate/Ac	Lesions/Head
1.Untreated	0	8.8 ab[x]
2. Fosphite	3 qts[Y]	0.0 c
3. Fosphite+Acrobat 50 WP +Penetrator Plus v/v[w]	3 qts+6.4 oz+0.19%	0.1 c
4. Acrobat 50 WP +Penetrator Plus	6.4 oz+0.19%	2.8 b
5. Reason+Maneb 75DF +Induce v/v	8.2 oz+2 lbs+0.25%	3.4 ab
6. Maneb 75DF	2 lb/ac	6.5 ab

[W]Matierials separated by a "+" were tank mixed.

[X]Means followed by the same letter do not differ significantly.

[Y]3 qt. rate is pending registration in California

[Z]On 27th of Jan; 6th,16th,25th of Feb; 7th and 13th of Mar; materials were applied in 30 gallons of water per acre with a CO_2 pressurized backpack sprayer at 30 psi.

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For labels and MSDS visit our website at www.jhbiotech.com or phone us at 805.650.8933