



Fosphite®

PinkRot Tech Update

JH Biotech
Biotechnologies for Safer Agriculture

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In recent years, pink rot disease causing tuber breakdown in field and storage situations has become a major concern of potato growers. Often referred to as "water rot," pink rot is caused by the soilborne fungus *Phytophthora erythroseptica*. Pink rot is an important soilborne pathogens that directly affect tuber integrity in storage. *P. erythroseptica* invades the potato plant through the roots, and mainly infects the tubers at the stem end through stolons, though infection may also occur through harvesting wounds, lenticels, and buds. Further losses may occur in storage due to secondary bacterial infections of the damaged tissue.

The pink rot pathogen is endemic to many soils around the world, but is most damaging to potato tubers when soils are water saturated and warm (near 77°F). Pink rot infections are usually associated with excessive moisture (poor drainage, excessive precipitation or irrigation). All underground plant parts can be attacked by *P. erythroseptica*. Infections usually occur in the soil prior to harvest through the lenticels, eyes, or through the stolons of the tubers. Disease symptoms are most apparent near maturity, but asymptomatic infections may also occur during harvest. The disease can spread from infected to healthy tubers in storage. The pathogen survives between potato crops in soil and crop debris as dormant spores (oospores), and may infect other hosts such as tomato or spinach.

Phytophthora erythroseptica is soil-borne and can survive for long periods of time in the soil. This disease can rot a tuber quite rapidly, usually within just a couple of weeks. Usually pink rot involves only the tuber but symptoms of the above-ground portions of the plant sometimes occur. Infected plants may wilt, with the leaves becoming chlorotic and eventually drying up and falling off.



FOSPHITE CONTROLS PINK ROT

Research conducted by Jeff Miller in Idaho during the 2005 growing season compared Fosphite fungicide applications against several other products claiming to be effective against Pink Rot. Fosphite treatments alone at the 5 qt. per acre rate showed the best results of any treatment in the trial. Not only did Fosphite control the incidence of disease better than any other product, it increased the marketable yield too! In fact all other treatments that included Fosphite showed increased yields. Fosphite is a systemic fungicide for the control of Downy Mildew, Phytophthora, Pythium and various other diseases on agricultural and greenhouse crops. Fosphite contains 53% potassium phosphite. It is labeled for use on most crops and has a very short 4 hour REI. Fosphite provides season long protection from many diseases and activates the plants natural immune system help to prevent many others. Fosphite is cost effective and easy to use. Its formulation is compatible with most other fertilizer and crop protection products.

Only Fosphite significantly reduced overall instance of pink rot.

The treatments with the lowest incidence of pink rot had the highest yields.

Schedule, treatment, rate of formulated product and application schedule Z	Pink Rot Incidence	Marketable Yield (cwt/acre)
1. Untreated Control	15 abc	207
2. Fosphite, 5 qt/acre (CDE)	3 d	314
3. Ridomil Gold Bravo, 2 lb./acre (CD) Phostrol, 10 qt/acre (CDE)	6 cd	294
4. Forum, 6 fl oz/acre (CD)	12 abc	277

Z Application dates were as follows: A= 13 May, B= 2 June, C= 24 June, D= 8 July, E= 22 July.

Sources:

1. Pink Rot Fact Sheet: University of North Dakota
2. Potato Pink Leak: Cornell University
3. Pink Rot of Tubers: Texas A&M University
4. Pink Rot: Schwartz, H. & Gent, D.
5. Managing Pink Rot Disease: Plissey, Ed. American Vegetable Grower February 2003.



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