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Treating Potatoes Entering Storage

One of the most destructive diseases on stored potatoes is Fusarium dry rot. This disease is caused by several species of the fungus *Fusarium*. The *Fusarium* pathogens live in the soil and on crop refuse. They are also capable of surviving in soil on equipment, walls, and floors of potato storages. Since these fungi are soil borne, all tubers have the potential of carrying them on their surfaces. The pathogens responsible for Fusarium dry rot of potatoes do not directly penetrate the potato. An entry site, such as a wound or a bruise, is necessary for the pathogen to become established. Most tuber rot infections occur through wounds inflicted during harvest or storage. Factors which contribute to increased Fusarium tuber rot include wounds, dirty tubers, susceptible varieties, lenticel enlargement, excess air movement and low humidity in storage, and tuber damage from other pathogens, insects, or nematodes. Any and all conditions that reduce the rate of suberization and wound periderm formation increase the potential for losses from *Fusarium*. Control of Fusarium tuber rot can be aided by harvesting only mature tubers with well-set skins and handling the tubers in such a manner as to minimize bruising. This reduces the entry points for infection. Harvest only when tuber temperatures are above 40 degrees Fahrenheit, as this will reduce bruising. Padding of equipment can reduce injury from bruising and subsequent infection by Fusarium. The pathogens can survive in soil that adheres to equipment, storage areas and infected tubers, therefore, sanitation of equipment and storage areas will reduce potential losses. Application equipment should provide complete coverage of each tuber with the protectant spray. To insure maximum benefits from the treatment, situate nozzles on the bin piler. Separate as much soil, diseased tubers and other debris as possible before the treatment is applied and the potatoes loaded into storage. The spray or controlled droplet applicator (CDA) nozzles should be placed where the tubers are tumbling to insure adequate coverage. Application equipment placed over a roller table will provide the best coverage and thereby the best control. Treat potatoes immediately before they are stored. Avoid getting the tuber too wet. Avoid soaking the potatoes; the idea is to cover them with a penetrating mist. Too much moisture on the potatoes being piled may lead to storage problems.

Storage Disinfestation Materials

Chemical: Chlorine
Remarks: Use 4 to 6 quarts of solution per ton of potatoes.

Trade Name	Rate of product	Comments
Agclor 310	9.6 oz/100 gal	Not effective for preventing tuber to tuber spread of pink rot or late blight as the potatoes enter storage.

Chemical: Thiabendazole
Remarks: Fungicide Resistance Group 1. Use 4 to 6 quarts (with 0.42 oz of material) of solution per ton of potatoes.

Trade Name	Rate of product	Comments
Mertect 340F	0.42 oz/ per 2000 lb of potatoes	Resistant isolates are commonly present. Insure proper application for control.

Chemical: Mono- and di- potassium salts of phosphorous acid (54.5%)
Remarks: Fungicide Resistance Group 33. Use 2 quarts (with 12.8 to 13 oz of material) of solution per ton of potatoes. Effective for preventing tuber to tuber spread of the pink rot or late blight pathogens as the tubers enter storage. PHI = 0; REI = 4 hours.

Trade Name	Rate of product	Comments
Resist 57	12.8 oz /2000 lb of potatoes	
Rampart	12.8 oz /2000 lb of potatoes	
Fosphite	12.8 oz /2000 lb of potatoes	
Reveille	12.8 oz /2000 lb of potatoes	

Chemical: Phosphorous acid (53.6%)
Remarks: Fungicide Resistance Group 33. Use 2 quarts (with 12.8 oz of material) of solution per ton of potatoes. Effective for preventing tuber to tuber spread of the pink rot or late blight pathogens as the tubers enter storage. PHI = 0; REI = 4 hours.

Trade Name	Rate of product	Comments
Phostrol	12.8 oz per 2000 lb of potatoes	Not to be used on thin- -skinned varieties intended for fresh market.