

LAST UPDATED ON:

July 9, 2019



Treating Potatoes Entering Storage

Developed by Crops Specialist Steven B Johnson, Ph.D, University of Maine Cooperative Extension

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 is 100 ppm chlorine	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 64 oz. (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
Phiticide	13 oz /2000 lb of potatoes	If pulp temperature is above 65°F or harvest conditions were wet, liquid products applied to tubers may cause surface blemishes unacceptable to fresh markets
Resist 57	12.8 oz /2000 lb of potatoes	
Rampart	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	Spray volume 40 to 64 oz. per ton of potatoes

Azoxystrobin + Fludioxonil + Difenoconazole

Remarks: Fungicide Resistance Group 11, 12, 3. Effective for *Fusarium* and Silver Scurf control.

Stadium	1 oz. per 2000 lb. of potatoes	Spray volume 40 to 64 oz. per ton of potatoes
----------------	--------------------------------------	--

Information in this publication is provided purely for educational purposes. No responsibility is assumed for any problems associated with the use of products or services mentioned. No endorsement of products or companies is intended, nor is criticism of unnamed products or companies implied.

© 2019

Call 800.287.0274 (in Maine), or 207.581.3188, for information on publications and program offerings from University of Maine Cooperative Extension, or visit extension.umaine.edu

The University of Maine is an EEO/AA employer, and does not discriminate on the grounds of race, color, religion, sex, sexual orientation, transgender status, gender expression, national origin, citizenship status, age, disability, genetic information or veteran's status in employment, education, and all other programs and activities. The following person has been designated to handle inquiries regarding non-discrimination policies: Sarah E. Harebo, Director of Equal Opportunity, 101 North Stevens Hall, University of Maine, Orono, ME 04469-5754, 207.581.1226, TTY 711 (Maine Relay System).