

Potato Sprout Inhibitors

The purpose of sprout inhibitors is to prevent sprouting in storage. When applied to the potato crop in the field, they also prevent growth of volunteer potatoes in the following rotation crop. Sprout inhibitors function by inhibiting cell division, therefore they should never be applied to seed potatoes and care needs to be taken to avoid drift or movement of sprout inhibitors into areas where seed potatoes are present. Maleic hydrazide and chlorpropham (CIPC) are the compounds most commonly used as sprout inhibitors. Maleic hydrazide is applied to the growing potato crop and is translocated to the developing tubers where it arrests cell division, but does not limit cell expansion. If it is applied too early during tuber development it will limit tuber size and yield. Chlorpropham is applied to potatoes in storage. It is a potent inhibitor of cell division and should not be applied until after wound healing. Wound healing usually occurs over a two to three week period after the tubers are placed in storage with the rate of healing being dependent on temperature. Temperatures less than 50 F will significantly slow down the healing process. Chlorpropham may be custom applied as an aerosol to potatoes in storage. It also may be applied as an emulsifiable concentrate on potatoes coming out of storage as they are packed. When applied as an aerosol chlorpropham residues may persist in storage up to a year after application. Therefore seed should not be placed in storages that have been treated with chlorpropham until the storage including fans, ducts, and plenums, are thoroughly cleaned and then allowed to air out for at least six months.

Note: ALWAYS FOLLOW LABEL INSTRUCTIONS. The information provided here is based on product labels at the time of writing. If there is any discrepancy between the label and the information below, follow label instructions. The current label for any given product is "the law" regarding its application. Also the products listed here are based on what is currently labeled for use in the state of Maine - these products may or may not be approved for use in other jurisdictions.

LAST UPDATED ON

Thursday, May 05, 2011

Chemical: Chlorpropham

Remarks: An aerosol for treating potatoes in storage. It should only be used after wounds and cuts have healed. Inhibition of sprouting at recommended rates is usually effective up to a year after treatment. Do not allow vapors to come in contact with, or get near to, storage areas used for seed potatoes. Do not store seed potatoes in a structure where CIPC was recently used, nor close to a structure where CIPC will be used. Seed should not be held in storages that have been treated with CIPC until the building, air system, and ducts, have been thoroughly cleaned and allowed to air out for at least six months. Contamination of seed lots by CIPC can occur up to one year after treatment.

Trade Name	Rate of product	Comments
CIPC 98A Pin Nip 98% Chlorpropham	Custom applied	Apply in storage after cuts and bruises have been allowed to heal over and before sprouting starts.
DECCO 271 Aerosol Pin Nip 98% Chlorpropham	Custom applied	Apply in storage after cuts and bruises have been allowed to heal over and before sprouting starts.

Chemical: Chlorpropham (shipping)

Remarks: Used for treating potatoes after storage and washing. Dilute with water to make a 1% active ingredient emulsion. Agitate the emulsion until uniform. Apply the 1% a.i. emulsion at a rate of 1 qt per 2000 pounds of potatoes.

Trade Name	Rate of product	Comments
Pin Nip 2EC (23.8% a.i.)	One quart of 1% a.i. emulsion will treat 2000 lbs of potatoes.	Apply before shipping when potatoes are removed from storage for packing.
Shield (36.0% a.i.)	One quart of 1% a.i. emulsion will treat 2000 lbs of potatoes.	

Chemical: Di-isopropylnaphthalene

Remarks: An aerosol for treating potatoes in storage. For best performance, apply in combination with CIPC. When used alone, this product only provides short-term suppression of sprouting. Allow bruises and cuts to heal before using this product. Apply before natural tuber dormancy ends and sprouting occurs. Do not allow anyone to enter treated area until such time as that there have been 10 complete air exchanges (after two hours with fans, or four hours with windows, vents or other passive ventilation). Do not allow vapors or fog to come into contact with, or get near, storage areas

LAST UPDATED ON

Thursday, May 05, 2011

used for seed potatoes. Let at least 15 days elapse, and thoroughly clean building, air system, and ducts, before using a treated storage area for seed potatoes. Where multiple applications are made, total accumulated material applied should not exceed 1.5 lb per 600 cwt per year.

Trade Name	Rate of product	Comments
Amplify	Custom applied.	

Chemical: 1,4-Dimethylnaphthalene

Remarks: An aerosol for treating potatoes in storage. This product is a short-term dormancy enhancer. It may be applied anytime after potatoes are placed in storage. Storage may be retreated if necessary, but do not exceed maximum application of 80 ppm (4 gallons per 4,000 cwt) during the storage season. Let 60 days elapse before using a treated area as temporary storage of seed potatoes. Air system and building must be thoroughly ventilated before area is used for storing seed potatoes to prevent dormancy effects. Do not allow vapors to come in contact with storage areas used for seed potatoes within 60 days of their planting.

This compound is highly toxic to fish. Do not contaminate water when cleaning equipment or disposing of washwater.

Trade Name	Rate of product	Comments
1,4Sight	Custom applied. 1 gal per 4,000 cwt. (equivalent to 20 ppm)	

Chemical: Maleic Hydrazide

Remarks: Application that is done too early will result in decreased tuber size. Uneven application may result in bud end cracking and/or elephant hide on tubers. Plants should not be stressed at time of application. Make only one application per season. For varieties with elongated tubers (e.g. Russet Burbank) apply when smallest tubers that will reach marketable size are at 1.5 to 2 inches in diameter and are elongating (Norgold should be at least 2 inches in diameter). For round varieties apply when smallest tubers that will reach marketable size are at least 1.5 inches in diameter (Norchip should be 2 inches in diameter). Do not apply earlier than two weeks past first bloom, and do not apply later than two weeks before vine killing. Do not apply if air temperature is greater than 85 F, or at temperatures greater than 80 F if it is expected to be 85 F later that day. Rainfall within 24 hours of application may reduce effectiveness. Do not add wetting agents or spray adjuvants. Minimum spray volume of 30 gal/acre. Do not apply to potatoes grown for seed.

Trade Name	Product rate per acre	Comments
Royal MH-30 SG	2 gal	See above comments
Royal MH-30 Xtra	5 lb	regarding timing of application.
Sprout Stop	1 to 1.3 gal	

LAST UPDATED ON

Thursday, May 05, 2011

Chemical: Clove Oil

Remarks: This product can be used as an aerosol or a spray to temporarily eliminate sprouts on potatoes in storage. Do not use on stored seed potatoes. Do not allow vapors to come in contact with storage areas used for seed potatoes within 60 days for storing seed potatoes. Do not apply in the field.

Trade Name	Rate of product	Comments
Sprout Torch	1 gal per 1,750 cwt to 3,500 cwt	