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## Organic Production Schedule for Potatoes

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Every effort has been made to provide correct, complete and up-to-date information for the use of these compounds for protecting the Maine potato crop. Crop protection compound labels now contain information on worker protection, training, and the application of US/EPA rules. The rules must be followed as indicated on the label whenever these compounds are being applied. For all applications, monitor the pest population and apply only when necessary, not on a calendar basis.

First and foremost, workers need to be trained under appropriate WPS (worker protection standards). This includes having a decontamination kit available for each worker, a central information display and appropriate records and information.

These pest control materials listed here as well as other pest control materials approved for organic production are pesticides. This means that applicators must adhere to all applicable pesticide application laws. **Failure to do so is a violation of pesticide laws.**

When using any crop protection chemical, carefully read and follow the label guidelines on use and restrictions to its use. Be sure workers receive and wear any protective clothing required by the crop protection chemical being used.

**Note:** Measurement units for dry materials are given by weight; those for liquid materials are given by volume.

To maintain certification, any pest control materials must meet the current standards as approved by organic certification bodies. **Check with the Maine Organic Farmers and Gardeners Association (MOFGA) or your certifier for up-to-date information on approved materials.**

One source is: <http://www.omri.org/omri-lists>

Adherence to pest control practices will not only improve the potato yield; it will help protect the potato industry in Maine.

### Weeds

Propane-fueled flamers have shown some promise in weed control. Mechanical weed removal is still the predominate means of weed control. While hand weeding has a place on a small scale, tillage is effective for larger operations. Preemergence cultivation tends to be risky, as the seed tubers and emerging potato sprouts are easily damaged. Adjust the cultivator to throw soil around the base of the potato plants and bury weed seedlings. Use standard S tines for between-row cultivation. Up to three cultivations may be required. Avoid

very late cultivations, as root pruning is likely to occur. Cultivation should be complete and hilling performed by the time the plants are 10 inches high.

### **Insects**

Locate potato fields a tenth to a quarter of a mile away from last year's potato crop, or at least as far as possible. This will reduce the movement of overwintered Colorado potato beetles into the new potato crop. Leafhoppers, European corn borers, and aphids occur each year, with very high populations some years. Flamers provide some control. Approved insecticides may be permitted in organic production, but only as a last resort.

### **Chemical: Spinosad**

Remarks: Insecticide Resistance Group 5. Provides control of larvae. The reentry interval is 4 hours and the preharvest interval is 7 days.

<b>Trade Name</b>	<b>Pest</b>	<b>Rate per acre of product</b>	<b>Comments</b>
<b>Entrust</b>	Colorado	1 to 2 oz.	
<b>Naturalyte</b>	Potato Beetle		
<b>Entrust SC</b>	European	3 to 6 oz.	
<b>Naturalyte</b>	Corn Borer		

### **Chemical: Pyrethrum**

Remarks: Insecticide Resistance Group 3. The reentry interval is 12 hours and the preharvest interval is 0 days.

<b>Trade Name</b>	<b>Pest</b>	<b>Rate per acre of product</b>	<b>Comments</b>
<b>PyGanic® Crop Protection EC 5.0 II</b>	Leafhoppers Colorado Potato Beetle	up to 15.6 oz.	

### **Chemical: Azadirachtin**

Remarks: Insecticide Resistance Group 26. Provides better control of larvae than adults. The reentry interval is 0 hours and the preharvest interval is 0 days.

<b>Trade Name</b>	<b>Pest</b>	<b>Rate per acre of product</b>	<b>Comments</b>
<b>Neemix 4.5</b>	Colorado Potato Beetle	4 to 16 oz.	Best control achieved with higher rates. Slower acting than Bt materials.
<b>Ecozin Plus 1.2% ME</b>	Colorado Potato Beetle	15 to 30 oz.	Provides control of larvae.

### **Chemical: *Bacillus thuringiensis* (Bt)**

Remarks: Insecticide Resistance Group 11. Timing of application is critical for Bt products. Best control is achieved against 1<sup>st</sup> and 2<sup>nd</sup> instar larvae; ineffective against adults. The reentry interval is 0 hours and the preharvest interval is 12 hours.

<b>Trade Name</b>	<b>Pest</b>	<b>Rate per acre of product</b>	<b>Comments</b>
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**At this time, there are no OMRI approved Bt materials.**

## Diseases

Late blight and early blight are the two main disease threats to potato plants. Of the two, late blight is the real threat. Late blight can spread and affect potato production miles away. Late blight is a community disease that needs community-wide attention and response. Sanitation is the best defense against late blight. Eliminate cull piles and control volunteer potato sprouting in the spring. These are the cheapest and best ways to reduce inoculum. Preventative copper sprays can be used for late blight control. Copper is toxic to many forms of life and tends to accumulate in soils over extended use. Monitoring copper levels in the soil is required.

### Chemical: Copper

Remarks: Fungicide Resistance Group M1. There are some incompatibilities with coppers. The reentry interval is 24 hours and the preharvest interval is 0 days.

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The applicator and other handlers must wear a long-sleeved shirt, long pants, chemical-resistant gloves, shoes, socks, and protective eyewear. Workers must be notified orally that the treated areas may be highly irritating to their eyes and to avoid rubbing their eyes. Should eyes get residue in them, flush with water. An eye-flush container must be made available before entering the treated area for 7 days following application. Reentry into the treated area for 24 hours after application is prohibited unless coveralls, chemical resistant gloves shoes, socks and protective eyewear is worn. **Failure to do any of the above is a violation of pesticide laws.** Greenhouses and tunnel houses are an application site that applicators and workers should exercise extreme caution.

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Trade Name	Rate per acre of product	Comments
Champ WG	1 to 5 lb.	
Badge X2	1 to 4 lb.	

### Chemical: *Bacillus subtilis*

Remarks: Fungicide Resistance Group 44. Biological control material for Rhizoctonia control.

Trade Name	Rate of product	Comments
Serenade Soil	2- 6 Qts. per acre	Biological material that performs better under low disease pressure.

### Chemical: Extract of *Reynoutria sachalinensis*

Remarks: Regalia® triggers a plant's natural defense systems to protect against a variety of fungal and bacterial pathogens.

Trade Name	Rate of product	Comments
Regalia	1- 2 Qts per acre	Apply Regalia in 50 to 100 gallons of water per acre. Repeat every 5 to 7 days. For improved performance, use in a tank mix with other registered fungicides.

## Sprout control in storage

### 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	

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