



## NEW HAMPSHIRE VEGETABLE, BERRY & TREE FRUIT NEWSLETTER

BECKY GRUBE, EXTENSION SPECIALIST, SUSTAINABLE AG, SMALL FRUIT & VEGETABLES  
GEORGE HAMILTON, EXTENSION SPECIALIST, TREE FRUITS

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### Reminders

**Subscriptions** – Many of you have responded to last month's request to sign up if you want to continue to receive this newsletter. This is a reminder that, in order to keep receiving this newsletter next year, we need to hear from you! Either send in a subscription form (available at <http://ceinfo.unh.edu/Agric/AGFVC.htm>), or email [becky.grube@unh.edu](mailto:becky.grube@unh.edu) if you would like to get the newsletter emailed to you!

**Indar Reporting** – Attention blueberry growers: If you used the fungicide Indar this year to help control mummyberry, **please don't forget to send in the survey of how much you applied, when you applied it, and whether you lost any of your crop due to mummyberry!** We need to document how much was applied and whether it gave good control. This is imperative so that we can apply for a Section 18 approval in 2006. If you prefer to email it, please send the information to [becky.grube@unh.edu](mailto:becky.grube@unh.edu). If you need another copy of the form, one is available at the website above.

### Vole Control

#### ZnP Now Registered for Blueberries

Bad news for pine voles — there is now a zinc phosphide (ZnP) product registered in New Hampshire for controlling voles in blueberries. Voles (both pine and meadow) feed on the roots and bark of blueberries, and pine voles can be especially destructive. Until now, we haven't had any legal pesticide options to handle this in blueberries.

The product is restricted use, so you're out of luck if you don't have a NH restricted use license for pesticides. Also,

you can't get it at your local pesticide dealer. To purchase it, you will need to first contact NH Wildlife Services at (603) 223-6832, and you would then order it through them. The product is "Zinc Phosphide Concentrate for rodent and lagomorph control" and the registrant is USDA Animal and Plant Health Inspection Service. The EPA registration number is 56228-6 and it is legal for use in and around homes, industrial sites, commercial and agricultural buildings. Also it is for use in "orchards, groves, nurseries, vineyards, ornamental plantings, highway medians, and plantings of nonbearing fruit trees." Farther on, it says it is legal for "voles and white-footed mice in berry production areas".

This is something you'd apply only after harvest is complete. ZnP is fairly quickly broken down if it gets wet, so sunny weather is the time to apply it. You have to mix it with the bait yourself, so it isn't as convenient as some products. Bait for blueberry application can be made from wheat, oats, barley, rye, or millet. These are materials that birds will readily eat if they find it. To minimize the risk of bird kills, you need to apply it directly into tunnel openings or cover it (boards, shingles, etc.). It also helps to avoid preferred foods – e.g. wild turkeys prefer corn to oats. I'll repeat this: the material is applied **after harvest is completed**. The label has the complete details. Becky Grube and Bill Lord alerted me to this material, and I found that it is registered in NH by going to NHDAMP's website and using the pesticide search function.

*Alan Eaton, Extension Specialist, Integrated Pest Management*

**An additional note:** The damage caused by voles is twofold. In addition to feeding directly on the roots, their tunneling and burrow systems also interfere with irrigation and drainage, and can also expose roots to freeze-thaw cycles that they otherwise wouldn't experience. Many blueberry growers around the state had bushes that appeared stressed this summer (heavy fruit loads, light leaf cover). We guessed this might have been due to significant winter injury... an interesting possibility is that root damage by voles could have been a major contributing factor. I

was in several blueberry fields 2 weeks ago, and we noticed tunneling in all of them. It was easy to feel the tunnels by pushing aside the mulch right around the drip line in the center of the row. Vole populations do tend to fluctuate in 3-5 year cycles, and it may be that vole activity is now at peak levels around the state. Fall is the best time to start a control program. In addition to the bait method described above, trapping can be efficient for smaller plantings, and creating a vegetation-free area near the base of trees or bushes also helps keep populations away from where they can do the most damage.

*Becky Grube, Extension Specialist, Sustainable Horticulture*

## Post-Harvest Curing of Fall Vegetable Crops

Harvest time for fall crops – and our first frost – is rapidly approaching. Winter squashes and pumpkins, potatoes, and many root and cole crops can be stored for many months if properly treated during and after harvesting. Here's a quick primer on how to make sure a few of these crops will maintain excellent quality for as long as possible.

### **Pumpkins & Winter Squashes**

- Harvest fully mature fruit. Check the days to harvest in the seed catalog, and look for a hard rind and solid exterior color. For dark green squashes, look for a dark yellow patch where the soil contacts the fruit. Immature fruits' skins are easily damaged and are then susceptible to rot. Also, the undeveloped seeds in unripe fruits will 'steal' nutrients from the flesh to complete their development – which can reduce flesh quality and cause premature softening.
- Be gentle. Avoid puncturing or scratching fruits, either from harvesters' fingernails (wear gloves) or other fruits' stems. Each cut is a potential entry point for rotting pathogens.
- Curing: If fruits are wounded during harvest, it may be beneficial to place fruits in 75-85F for 10-20 days to allow wounds to heal.
- Avoid chilling. Try to store pumpkins between 50-60F. Pumpkins are sensitive to temperatures below 50 – injury increases with time and lower temperatures. Chilling injury may be visible (a frost ring) or invisible. Either way, it predisposes the fruit to premature breakdown and susceptibility to pathogens.
- Keep fruits dry. 50-75% relative humidity (RH) is ideal. Morning dew or condensation on fruits can favor fungal diseases.
- Avoid storing fruits near apples or pears. These fruits give off ethylene gas, which promotes ripening and early breakdown.

### **Potato**

- Again, be gentle. Handle tubers gently to prevent bruising and scratching.
- Harvest mature tubers. Mature tubers are usually higher in dry matter (higher quality), and have tougher skins. Maturity is primarily determined by vine death. Potatoes should typically be harvested 2-3 weeks after vine death. Vines are often killed prematurely using chemical or mechanical methods to control tuber size or to allow earlier harvest.
- Harvest at moderate temperatures (60-70F). Harvesting at high temperatures (>80F) increases likelihood of storage rot, and harvesting at cool temperatures (<55F) increases likelihood of bruising. One of the problems with waiting until frost to kill vines is the cool soil temperatures and risk of freezing damage.
- Curing: A 1-2 week curing period at 50-60F will help heal any bruises that occurred during harvest and will toughen skins of less-mature potatoes. (If tubers are very sensitive to rot, e.g. if they were exposed to field frost or late blight, skip this step and don't try to store them – use them as quickly as possible).
- Store at cool temperatures. For fresh market or seed potatoes, aim for 40F. Those destined to become chips or fries should be stored at 50F or 45F, respectively. A constant temperature is better than a fluctuating one.

### **Cabbage**

- Select varieties that are suitable for storage! These include April Green, Bartolo, Danish Ballhead, Green Winter, and others...
- Harvest mature, firm heads that have not split.
- Store in a cold humid environment. 32-35F at 98-100% RH is ideal. Cabbage can tolerate slight freezes, but will suffer damage if exposed to hard freezes. High RH is important to prevent wilting and also reduces decay.
- As with squash, avoid storing with ethylene-producing fruits such as apples.

### **Turnips & Rutabagas**

- Harvest turnips that are about 2" in diameter, and rutabagas that are 3-5" in diameter and that weigh 2-3 lb.
- Store in a cold humid environment. Both turnips and rutabagas should be stored at 32F. Turnips need higher RH to prevent desiccation (98-100%), but rutabagas store well at 95% RH. As with cabbage, both can withstand mild freezes, but will suffer damage if exposed to hard freezes. High humidity is important to prevent wilting and also reduces decay.
- Do not apply wax. If wax is applied to improve appearance, do it after storage, immediately prior to sale.

### **Onions**

- Select storage varieties. These are typically late, hard, pungent varieties with good skin retention.

- Harvest when some green leaves remain (aim for 2 per plant) – it's ideal to harvest when 10-20% of the tops have fallen over. Shallow undercutting 1-2" below the bulbs can improve keeping quality. Allowing plants to die on their own can result in more skin loss. If tops are trimmed, leave at least 1" above the bulb.
- Thoroughly dry the bulbs. This can be done with or without supplemental heat, but thorough drying is essential. An air temperature of 100F is ideal for rapid drying. Empty greenhouses make good drying areas, but air temperatures of over 110F will damage onions, so monitor the heat!
- Curing. For best skin color, cure onions for 2 weeks at 75-80F and 70-80% RH.
- Store in cool temperatures. After curing, lower temperature gradually to near 32F, but avoid freezing. Maintain RH of 65-70%. Sudden cooling or dramatic temperature fluctuations can cause moisture condensation, premature sprouting, and decay.

Commodity	Curing		Storage	
	Temp(°F)	Time	Temp (°F)	Relative Humidity (%)
Potato	50-60	7-14 days	40-50	
Onion	75-80	14 days	32	65-70
Pumpkin	75-85	10-20 days	50-60	50-75
Winter Squash	75-85	10-20 days	50-60	50-75
Cabbage	N/A	N/A	32	98-100
Turnip	N/A	N/A	32	98-100
Rutabaga	N/A	N/A	32	95

## New References Available...

**Midwest Grape Production Guide** A new comprehensive guide covering all aspects of wine and table grape production in the Midwest and Northeast. It describes the physiology of the grapevine, site and variety selection, vineyard establishment, cultural practices including pruning, training, canopy management, soil management and fertilization, disease and pest management including weeds, insects and wildlife, and harvesting and marketing. Written by specialists at Ohio State and Purdue Universities. The 155-page guide with colored photographs and drawings, tables, and a pullout illustrating step-by-step vine training and common training systems is available for \$15 from *Media Distribution, Communications and Technology, The Ohio State University, 385 Kottman Hall, 2021 Coffey Road, Columbus, OH 43210-1044. Phone 614-292-1607, Fax 614-292-1248.*

## Resource Guide for Organic Insect and Disease Management

The guide has three sections. The first provides cultural information and management practices for several important vegetable crop groups. For each family, key pests and diseases are described. The second section is a set of fact sheets about specific materials that can be used in organic systems (e.g. *Bacillus thuringiensis*, *Coniothyrium minitans*, etc.). Each fact sheet provides information about its efficacy, mode of action, and method of manufacture. The last section contains appendices with useful information about additional practices such as plant resistance, trap cropping, beneficial insect habitats, and many other additional resources. The 169-page guide is available online at <http://www.nysaes.cornell.edu/pp/resourceguide>. After Sept. 30, hard copies will be available for \$5 plus \$4 shipping. Ordering information will be available at the website above.

## New England Vegetable Management Guide ONLINE!!

The *New England Vegetable Management Guide* is reprinted every two years. The new 2006-2007 edition will be printed by December 2005. However, label changes for herbicides, insecticides and fungicides are taking place all the time. You can find all of the updated label changes on the Vegetable Guide website, <http://www.nevegetable.org>. Select "General Information" for cultural practices, nutri-ents, cover crops, general background on insect, weed, and disease management, IPM and biorational pesticides. Select 'Crops' to find details on production methods and weed, insect and disease management for each crop. The materi-als listed for each crop and pest are up to date as of July 2005. New for this edition: pesticides that organic growers can use are identified as OMRI listed. Also new are crop sections on garlic, basil and mesclun. The online Guide is freely available to all. This website was made possible by grants from the Environmental Protection Agency to the New England Vegetable and Berry Growers Association, UMass Extension, and all the Vegetable Extension programs of New England.

## UPCOMING MEETINGS AND EVENTS

- Sat, Sep 24. **Small Vineyard Field Event**. Plattsburg, NY. For more info, contact Kevin Iungerman at (518)885-8995. **SF**
- Fri-Sun Oct 21-23. **Women in Sustainable Agriculture Conference**. Burlington, VT. For more info, contact UVM Cooperative Extension at 802-223-2389, ext. 15. **AC**
- Tues Nov 1. **Community Supported Agriculture (CSA) Workshop**. Auburn, NH. For more info, contact Nada Haddad at (603)679-5616. **AC**
- Fri-Sat. Nov. 4-5. **2005 New England Farmers Market Coalition Meeting & Workshop**. Durham, NH. For more info, see [www.farmersmarketcoalition.com](http://www.farmersmarketcoalition.com). **AC**
- Tues-Thurs. Dec 13-15. **New England Vegetable and Fruit 2005 Conference**, Manchester, NH. For more info see <http://www.nevbc.org/>. **V, SF, TF, O, F**

Meeting topics: F = flower, O = certified organic, SF = small fruit, TF = tree fruit, V = vegetable, AC = all crops

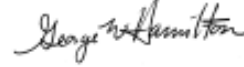
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This newsletter is a cooperative effort of the Vegetable, Small Fruit, Tree Fruit, and Sustainable Agriculture Specialists and Extension Educators at the University of New Hampshire. It is published monthly throughout the growing season. Its purpose is to keep you updated on issues and research relevant to production of vegetable and fruit crops in NH.

**Comments and questions are welcome. Address corrections, additions and deletions should be faxed to (603)862-2717, emailed to [becky.grube@unh.edu](mailto:becky.grube@unh.edu), or phoned in to Cheryl Estabrooke at (603)862-3200.**



Becky Grube  
(603) 862-3203, [becky.grube@unh.edu](mailto:becky.grube@unh.edu)



George Hamilton  
(603) 641-6060, [george.hamilton@unh.edu](mailto:george.hamilton@unh.edu)

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UNH Cooperative Extension  
Department of Plant Biology  
G48 Spaulding Hall  
38 College Road  
Durham, NH 03824-3544