Pesticide Credits

Please take a look at your pesticide card and see if you need to recertify for this year 2009. You must receive all credits before September 30th of this year. You are required to have 2 hours of X and 2 hours of V. If you plan on attending any of the meetings below you must call and register.

9/1/2009 - Asheville, NC
3:00pm - 5:00pm
2 hour credit V
Pesticide Safety for Private Applicators (021231)
Contact: Amanda Stone - (828) 255-5522

9/1/2009 - Asheville, NC
6:00pm - 8:00pm
2 hour credit A B G H I K L M N O T D X
Pesticide Specialty Training (021232)
Contact: Amanda Stone - (828) 255-5522

Special Interest Articles:
- Native Nook
- Spotlight on Insects
- Honeybees & Pesticide
- Herbicide Carryover
- Lawn Care
- Canning & Preserving
- Upcoming Events
**NATIVE NOOK**

**Scientific Name:** Sanguinaria canadensis  
**Common Name:** Bloodroot

**Life Cycle:** Early spring  
**Height:** .5 to 1 foot  
**Flower/Fruit:** 1.5 to 2 inch bright white flowers; 8 to 12 petals; two sepals fall away as flower opens  
**Flowering Season:** -  
**Foliage:** 6 inch five- to nine-lobed leaf with blunt teeth; persists until mid-summer  
**Site:** Moist but well-drained humus soil; shade to partial shade  
**Comments:** Bright orange-red sap in the thick rootstock

By: Erv Evans, Consumer Horticulturist, NC State University

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**Spotlight on Insects**  
**Colorado Potato Beetle**  
**Leptinotarsa decemlineata (Say), Chrysomelidae, COLEOPTERA**

**DESCRIPTION:**  
Adult - This oval, convex beetle is yellowish-brown and about 9 to 14 mm long. It has five longitudinal black stripes on each wing cover and a variable number of black spots on the pronotum (area just behind the head).  
Egg - The yellow or orange elongated eggs are deposited on end and grouped into rows. Each egg is about 1.8 mm long.  
 Larva - Red at first, this soft grub has a black head and black legs. As it matures, the larva turns yellowish-red or orange and develops two rows of black spots along each side of the body. It reaches a length of about 10 mm.  
 Pupa - Generally resembling the adult in shape, the pupa is approximately 13 mm long.

**BIOLOGY:**  
Distribution - The Colorado potato beetle can be found throughout most of North America.  
Host Plants - Colorado potato beetles infest a wide variety of plants including tomato, potato, eggplant, pepper, tobacco, ground cherry, nightshade, and other solanaceous plants.  
Damage - Adult beetles and larvae feed on leaves and terminal growth of their host plants. The loss of foliage hinders development of tubers or fruit thereby reducing yield. In cases of heavy infestation, entire plants may be killed. Colorado potato beetle damage often occurs in isolated spots throughout the field.  
Life History - Colorado potato beetles overwinter as adults in the soil. After emerging in spring, beetles feed for a short period before mating and laying eggs. Females each deposit 300 to 500 eggs in clusters of 20 or more on the undersides of leaves. Four to 9 days later, larvae emerge and feed for the next 3 weeks. Once mature, larvae drop to the ground and pupate in the soil. Five to 10 days later, a new generation of beetles emerge. In North Carolina, at least two full generations and a partial third occur each year.  
CONTROL:  
Many cultural enemies help keep Colorado potato beetle populations low. Birds feed upon adults and larvae while predatory bugs attack eggs and larvae. These predatory bugs may be gray, brown, or brightly colored and are often shield-shaped. Two kinds of gray and black tachinid flies also parasitize larvae. Another method is to fill a clean hand held spray bottle with water and add a couple drops of Original Dawn dish detergent and saturate the leaves both top and underneath. This will need to be repeated after rains. This deters all insects that have chewing mouth parts.  
The recommendations below are from the North Carolina Agricultural Chemicals Manual:  
Sevin 50 WP can be sprayed at a formulation of 2 tablespoons per gallon of spray with 0 days between last application and harvest.  
Thiodan 0.75 EC can be sprayed at a formulation of 2.5 tablespoons per gallon of spray with 1 days between last application and harvest.
Honeybees and Pesticide Use

PROTECTING BEES FROM PESTICIDES

Most major bee-poisoning incidents occur when plants are in bloom. However, bees can be affected in other circumstances as well. Keep the following suggestions in mind when applying pesticides.

Use pesticides only when needed: Foraging honeybees, other pollinators, and insect predators are a natural resource and their intrinsic value must be taken into consideration. Vegetable, fruit, and seed crop yields in nearby fields can be adversely affected by reducing the population of pollinating insects and beneficial insect predators. It is always a good idea to check the field to be treated for populations of both harmful and beneficial insects.

Do not apply pesticides while crops are in bloom: Insecticide should be applied only while target plants are in the bud stage or just after the petals have dropped.

Apply pesticide when bees are not flying: Bees fly when the air temperature is above 55-60°F and are most active from 8 a.m. to 5 p.m. Always check a field for bee activity immediately before application. Pesticides hazardous to honey bees must be applied to blooming plants when bees are not working, preferably in the early evening. Evening application allows time for these chemicals to partially or totally decompose during the night.

Do not contaminate water: Bees require water to cool the hive and feed the brood. Never contaminate standing water with pesticides or drain spray tank contents onto the ground, creating puddles.

Use less toxic compounds: Some pest control situations allow the grower-applicator a choice of compounds to use. Those hazardous to honey bees must state so on the label. Select other materials or vary dosages, based on the honeybee mortality predictor model to be discussed in a later section of this publication. When in doubt, consult your County Agricultural Extension Agent for details, recommendations and further information about the toxicity of specific compounds to honey bees.

Use less toxic formulations: Not all insecticides have the same effects when prepared in different formulations. Research and experience indicate:

- New microencapsulated insecticides are much more toxic to honey bees than any formulation so far developed. Because of their size, these capsules are carried back to the colony and there can remain poisonous for long periods. These insecticides should never be used if there is any chance bees might collect the microcapsules. Always consider using another formulation first.
- Dusts are more hazardous than liquid formulations.
- Emulsifiable concentrates are less hazardous than wettable powders.
- Ultra-low-volume (ULV) formulations are usually more hazardous than other liquid formulations.

Identify attractive blooms: Before treating a field with pesticides, it is a good idea to check for the presence of other blooming plants and weeds which might attract bees. In many instances bees have been killed even though the crop being sprayed was not in bloom. Many times these attractive blooms can be mowed or otherwise removed, although mowing can result in destroying other beneficial insect habitat or force destructive insects into the crop being cultivated.

Notify beekeepers: If beekeepers are notified in advance of application, colonies can be moved or loosely covered with burlap or coarse cloth to confine the bees and yet allow them to cluster outside the hive under the cloth. Repeated sprinkling each hour with water prevents overheating (Figure 3). Never screen or seal up colonies and do not cover with plastic sheeting. This can result in overheating, leading to bee suffocation and death. Florida law requires every apiary or bee yard to be plainly marked with the owner's name, address and telephone number.
Why Should You Care About Honey Bees?

By Debbie Roos, Ag Extension Agent, Chatham Co.

The honey bee (Apis mellifera) is a vital component of agriculture in North Carolina. Honey bees and the products of the hive, including honey, pollen, and bees wax account for approximately $10 million annually in the state. However, the products derived directly from honey bees are only a small part of their true value. As bees visit flowers to collect nectar and pollen, they transfer pollen grains from one flower to another, which fertilizes them and produces fruit and seeds. Without visits from bees, many crops would have lower yields and produce foods of lower quality. In North Carolina, many of the economically important crops such as cucumbers, apples, blueberries, and melons are dependent on honey bees for pollination and account for $100 million every year.

Unfortunately, the fate of the honey bee in North Carolina is in question. Because of pests and diseases that have been introduced from other parts of the world, the honey bee population has declined dramatically in the past 20 years. It has been estimated that 98% of the feral (wild) colonies have been eliminated. The numbers of managed colonies have also suffered, dropping in number from a high of 180,000 in the late 1980s to approximately 100,000 at present. Due to the lack of feral colonies, it is of great importance to maintain the numbers of managed honey bee colonies to ensure adequate crop pollination.
Herbicide Carryover in Hay, Manure, Compost, and Grass Clippings

Prepared by: Dr. Jeanine Davis, Associate Professor and Extension Specialist, Department of Horticultural Science and Dr. Sue Ellen Johnson, Assistant Professor and Forage Specialist, Department of Crop Science

Caution to Hay Producers, Livestock Owners, Farmers, and Home Gardeners

Many farmers and home gardeners have reported damage to vegetable and flower crops after applying horse or livestock manure, compost, hay, and grass clippings to the soil. The symptoms reported include poor seed germination; death of young plants; twisted, cupped, and elongated leaves; misshapen fruit; and reduced yields. These symptoms can be caused by other factors, including diseases, insects, and herbicide drift. Another possibility for the source of these crop injuries should also be considered: the presence of herbicides in the manure, compost, hay, or grass clippings applied to the soil.

The Herbicides of Concern

Aminopyralid, clopyralid, fluroxypyr, picloram, and triclopyr are in a class of herbicides known as pyridine carboxylic acids. They are registered for application to pasture, grain crops, nonresidential lawns, certain vegetables and fruits, and roadsides. They are used to control a wide variety of broadleaf weeds, including several toxic plants that can sicken or kill animals that graze them or eat them in hay. Based on USDA-EPA and European Union agency evaluations, when these herbicides are applied to hay fields or pasture, the forage can be safely consumed by horses and livestock – including livestock produced for human consumption. These herbicides pass through the animal’s digestive tract and are excreted in urine and manure. They can remain active in the manure even after it is composted. They can also remain active on hay, straw, and grass clippings taken from treated areas. The herbicides leach into the soil with rainfall, irrigation, and dew. As with many other herbicides, they can remain active in the treated soil.

The chemicals of greatest concern are picloram, clopyralid, and aminopyralid because they can remain active in hay, grass clippings, piles of manure, and compost for an unusually long time. These herbicides eventually break down through exposure to sunlight, soil microbes, heat, and moisture. Depending on the situation, the herbicides can be deactivated in as few as 30 days, but some field reports indicate that breakdown can take as long as three to four years. Degradation is particularly slow in piles of manure and compost. When mulches, manures, or composts with herbicide activity are applied to fields or gardens to raise certain vegetables, flowers, or other broadleaf crops, potentially devastating damage can occur.

Table 1. Herbicides registered for use in North Carolina that contain picloram, clopyralid, and aminopyralid are:

<table>
<thead>
<tr>
<th>Pasture and hayfields</th>
<th>Commercial turf and lawns</th>
<th>Commercial vegetables and fruits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curtail (2,4-D + clopyralid)</td>
<td>Confront (triclopyr + clopyralid)</td>
<td>Clopyr AG (clopyralid)</td>
</tr>
<tr>
<td>Forefront (aminopyralid + 2,4-D)</td>
<td>Lontrel (clopyralid)</td>
<td>Stinger (clopyralid)</td>
</tr>
<tr>
<td>Grazon P+D (picloram + 2,4-D)</td>
<td>Millennium Ultra Plus (MSMA + 2,4-D + clopyralid + dicamba)</td>
<td></td>
</tr>
<tr>
<td>Milestone (aminopyralid)</td>
<td>Millennium Ultra and Ultra 2 (2,4-D + clopyralid + dicamba)</td>
<td></td>
</tr>
<tr>
<td>Redeem R&amp;P (triclopyr + clopyralid)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surmount (picloram + fluroxypyr)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All products listed are manufactured by Dow AgroSciences with the exceptions of the Millennium products by Nufarm and Clopyr by United Phosphorus.

Crops known to be sensitive to picloram, clopyralid, or aminopyralid are:

<table>
<thead>
<tr>
<th>Beans</th>
<th>Carrots</th>
<th>Compositae family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>Dahlias</td>
<td>Eggplant</td>
</tr>
<tr>
<td>Flowers, in general</td>
<td>Grapes</td>
<td>Legumes</td>
</tr>
<tr>
<td>Lettuce</td>
<td>Marigolds</td>
<td>Mushrooms</td>
</tr>
<tr>
<td>Peas</td>
<td>Peppers</td>
<td>Potatoes</td>
</tr>
<tr>
<td>Roses, some types</td>
<td>Spinach</td>
<td>Sugar beets</td>
</tr>
<tr>
<td>Strawberries</td>
<td>Sunflowers</td>
<td>Tobacco</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>Umbelliferae family</td>
<td>Vegetables, in general</td>
</tr>
</tbody>
</table>
Lawn Care of Tall Fescue Grasses and Mixes

September through November

Mowing: Mow to 2 1/2 to 3 inches in height. Remember grasscycling and leave clippings on the lawn.

Fertilization: The best way to determine your lawn’s nutrient needs is by a soil test. The North Carolina Department of Agriculture, Agronomic Division, provides free soil testing. In the absence of a soil test, use a complete nitrogen-phosphorus-potassium (N-P-K) turf-grade fertilizer with a 3-1-2 or 4-1-2 ratio (that is, 12-4-8 or 16-4-8). Fertilize with 1 pound of actual nitrogen (N) per thousand square feet in mid-September and again in November (about the time the grass is green but not actively growing).* (* leads to fertilizer application rate sample calculation)

Irrigation: Water following guidelines for March through May.

Weed Control: Apply broadleaf herbicides to control dandelions and other weeds if necessary. Caution: Some herbicides may affect newly seeded turf. Follow label directions.

Insect Control: Check for white grubs in September and October; fall is the ideal time to control white grubs.

Aerification: Core lawns subject to heavy traffic or on clay soils to minimize compaction and improve rooting. Break up plugs.

Renovation: Overseed thin, bare areas as grass begins to respond to cooler temperatures; about August 15 to September 1. Use a blend of tall fescue cultivars at 6 pounds per thousand square feet. Apply a starter-type fertilizer at the time of seeding. Keep the seedbed moist with light, frequent sprinklings several times a day to ensure good germination.

Thatch Removal: It is not necessary to remove thatch.

Canning and Preserving Workshop

Learn more about canning or just brush up on the latest information on food preservation from canning to freezing to drying by attending Canning and Preserving Made Easy. This workshop is an introduction to canning, pickling, jams and jellies, freezing, drying and storage and will be held on Wednesday, July 22, 2009 at the Madison County Cooperative Extension Center from 1 p.m. - 4 p.m. Cost is $10 ($15 for couples).

To register please contact Sue Estridge, Extension Agent, Family and Consumer Sciences, at (828) 649-2411 or send a check (payable to Madison County Extension) to the address below.
UPCOMING EVENTS

Low Impact Living Series
Please register for these events by calling 828-649-2411.

July 28: Wildlife Habitat Management 6pm – 8pm
Will focus on game animals, deer, turkeys, grouse, and quail – Topics of discussion include food plot management, soil nutrition, hunting lease arrangements and others
Ross Young, Extension Director, Ag. Agent

August 20: Detoxify Your Home 1pm–2:30pm and 6pm–7:30pm
Making homemade cleaners may be easier than you think! Learn how to make your own home cleaners that are more environmentally safe as well as economical. The class is $5.00.
Sue Estridge, FCS Agent

September 24: Creating a Backyard Habitat 6pm – 8pm
Attracting birds, butterflies and other wildlife is a fun way to enjoy nature right in your own yard or garden. Join us as we discuss how to provide the basic elements of habitat and bring wildlife to your backyard. Additionally, you will learn how to apply to have your backyard certified by the National Wildlife Federation.
Eve Kindley, 4-H Agent and Ross Young, Director

September 15: Composting/Vermiculture 1pm – 3pm and 6pm – 8pm
Topics include composting and worm-composting of yard and kitchen refuse. Use of compost as a soil enhancement in home garden soils. Will cover basic soil science, importance of organic matter in soils, and various techniques.
David Kendall, Agriculture Agent

September 17: Ecological Landscaping 1pm – 3pm and 6-8pm
Will focus on role of plants and landscaping techniques in water purification, energy conservation, and wildlife enhancement for the homeowner. Reduce the impact of your home landscape on the environment; improve your outdoor living opportunities, raingardens, and more!
David Kendall, Agriculture Agent

October 17: Solar Energy for the House and Farm 8:30am – 4pm
Are you concerned about rising energy costs? With the uncertainty of fuel supplies and prices, it make sense for homeowners and farmers to make every energy dollar go as far as possible. Come learn about passive solar design techniques and "photovoltaics", the use of solar energy to generate electricity. The class is $10.00.
Sue Estridge, FCS Agent
Quint David, WNC Renewable Energy Initiative, Appalachian State University

Mountain State Fair September 11 – 20 at the WNC Agriculture Center in Fletcher, NC
More info at http://www.agr.state.nc.us/markets/fairs/mtnfair/

Madison County Fair October 7-10 at the Madison County Fairgrounds in Marshall, NC
Fairbooks are here! Please come by our office and pick one up.
Speaking of Gardening Symposium

Explore great plants at this year's Speaking of Gardening symposium. Two days of garden lectures by six highly regarded designers, research specialists and nurserymen will provide participants with great new ideas and inspiration.

Symposium topics include private and public garden design, new plants from NCSU plant research program, designing with grasses, new perennials from Jelitto and the Human Flower Project.

August 28 - 29, 2009 at The NC Arboretum
REGISTER TODAY: 828.665.2492, Ext. 317

By: Alison Arnold