

Highlights in

Horticulture

Baker County

Dear Extension Friends,

July 2009

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Although it is summertime, it is not too early to start thinking about entering plants into this year’s county fair. If you don’t already have a prize plant to enter for horticulture judging, you’d better find one soon. (Rules state that you must have the plant in your possession for at least three months prior.) Gardeners of all ages are encouraged to enter since everyone goes home with at least one ribbon and cash in their pocket!

Best Regards,

Alicia

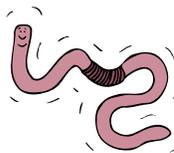
Alicia R. Lamborn
Horticulture Extension Agent
Baker County Extension Service

Upcoming Programs and Events: July

July 13th — **Florida-Friendly Landscaping** 6:00 pm to 7:30 pm at the Baker County Extension Office (Agriculture Center). Learn to create and maintain attractive landscapes that enhance the community while protecting Florida’s natural environment. All participants will receive a Florida-friendly landscaping handbook which includes a guide for selecting Florida-friendly plant material. This program is free; RSVP by calling 904-259-3520 or email alamborn@ufl.edu by Friday, July 10th.



July 17th — **Vermi-composting** 10:30 am to 11:30 am at the Baker County Extension Office (Agriculture Center). Vermicomposting is a type of composting that uses worms rather than heat to break down materials, and can be used inside the home to reduce food waste. The worms break down the food, creating worm castings (worm manure) which can then be used as an excellent, nutrient-rich organic fertilizer and soil conditioner for your house or landscape plants. This class will teach participants how to care for red worms, what to feed them, and how to use their vermi-compost around the house (worms can also be used as fish bait). There is no charge for the class and all who attend will receive some worms to help them get started. No pre-registration is required; please call 259-3520 with any questions.



Bt (*Bacillus thuringiensis*)

What is *Bacillus thuringiensis*?

Bacillus thuringiensis (Bt) is a naturally occurring bacterium, commonly found in soils, that has the ability to infect and kill certain insects. Because of this property, Bt has been developed for insect control, using the bacteria as the active ingredient in some insecticides. Bt is a biological pathogen (or biological control agent) marketed as a microbial insecticide.

When consumed by susceptible insects, Bt acts like a stomach poison where proteins react with the cells of the gut lining causing paralysis to the digestive system. Infected insects stop causing damage, eating little to nothing before they die. Death often takes several days and ultimately the insect dies from starvation.

The most commonly used strain of Bt (*kurstaki* strain) will kill only leaf- and needle-feeding caterpillars, but there is another (*israelensis* strain, or Bti) used to control certain types of fly larvae, including black flies, fungus gnats and larvae of mosquitoes.

Advantages

- ◆ Compared to other commonly used insecticides, Bt products are nontoxic to people, pets, wildlife, and other organisms not closely related to the target pest.
- ◆ There are different strains of the bacterium and each strain is capable of affecting only a specific group or species of insects, such as caterpillars. Therefore most products do not directly affect beneficial insects (i.e. pollinators) in treated areas.
- ◆ Because of the high level of safety, most common Bt formulations can be used on food crops and do not require a lapse between application and harvest. Bt is also recommended for sensitive sites where pesticide use can cause adverse effects.



Disadvantages

- ◆ Sunlight causes Bt to degrade, and most formulations persist on treated foliage less than one week. This means that repeat applications may be necessary.
- ◆ To be effective, Bt must be eaten by the target insect and therefore application coverage must be thorough. Also, young insects are more susceptible, whereas older instars may not be as easily controlled.
- ◆ Bt does not kill rapidly (takes several days) which may cause users to assume that the treatment was ineffective.
- ◆ Bt products tend to have a shorter shelf life than other insecticides, having reduced effectiveness after two to three years of storage. Liquid formulations are more perishable than dry formulations but shelf life is greatest when storage conditions are cool, dry and out of direct sunlight.

Available Products

For control of common leaf-feeding caterpillars (caterpillar pests of vegetables, European corn borer larvae in field corn, bagworms and tent caterpillars on trees and shrubs and other forest caterpillars) look for the following product names or any Bt product containing the *kurstaki* strain.

Dipel®	Javelin®	Thuricide®	Worm Attack®
Caterpillar Killer®	Bactospeine®	SOK-Bt®	

For control of mosquitos, black flies and fungus gnats look for products containing the *israelensis* strain such as:

Vectobac®	Mosquito Dunks®	Gnatrol®	Bactimos®
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Products are available as liquid concentrates, wettable powders, and ready-to-use dusts and granules.

***The use of trade names is solely for the purpose of providing specific information. It is not a guarantee of warranty of the products names and does not signify they are approved to the exclusion of others of suitable comparison.

The Edible Garden – Troubleshooting Tomato Disorders

Tomatoes are a popular crop in home gardens and many gardeners run into problems each year. Let this article serve as a guide for troubleshooting those tomato problems that you may be encountering.

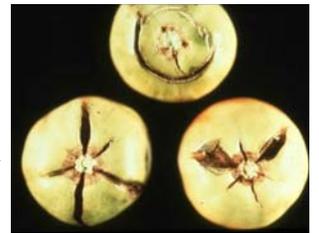
Blossom-End Rot

Blossom-end rot is caused by a calcium (Ca) deficiency in the developing fruit and usually appears at the blossom end or side of the fruit but can also occur internally with no visible symptoms. While this tends to be a common problem, it can easily be avoided through proper fertilization and good water management. Some conditions that may cause this disorder include low soil Ca, high nitrogen (N) rates, using ammoniacal sources of N, high concentrations of soluble potassium (K) and magnesium (Mg) in the soil, inadequate or excess soil moisture, root damage from nematodes and disease. If you can do so without wetting the foliage, you may also try watering at night (or evening) since night is an important time of Ca uptake. Foliar applications and fruit sprays of Ca have not proven to reduce this disorder since very little Ca is taken up by the fruit, and can not be translocated from leaves to fruit.



Cracking

Cracking occurs when the internal expansion is faster than the expansion of the epidermis (skin) which causes it to split. Radial cracking starts at the stem end and progresses toward the blossom end. Concentric cracking occurs in a ring or rings around the stem scar. Some varieties are more susceptible to cracking than others with more resistant varieties cracking later in fruit maturity, especially as color develops. To avoid this problem, select tolerant varieties, stick to a routine watering schedule to reduce extreme fluctuations in soil moisture, and try to maintain good foliage cover since exposed fruit are more susceptible due to fluctuations in temperature.



Internal White Tissue

Fruit affected by this disorder usually show no outward symptoms, but when cut open, white hard areas are present. Symptoms seem to be triggered by high temperatures during ripening of fruit. Adequate potassium (K) fertilization is also important to help reduce this disorder, but may not eliminate it. High colored tomato varieties tend to be more resistant to the problem.

Irregular Ripening

Irregular ripening of fruit is caused by nymphs (shown right) of the Silverleaf whitefly feeding on the tomato foliage. As fruit ripens, color fails to develop uniformly and sometimes produces a star-burst appearance. Eventually, color develops to appear nearly normal, but internal areas remain hard with little or no color development. This disorder can occur with as few as four nymphs per terminal leaf, therefore regular scouting and control of this insect is recommended. The use of lightweight summer oils or insecticidal soap should keep the population of these pests under control.



Zippering

Zippering describes a longitudinal scar with small transverse scars along it (looks like a zipper), which either extends partially or fully from the stem scar area to the blossom end. You may also see an open hole in addition to the zipper scar. This disorder is usually caused by an anther that is attached to the newly forming fruit. The only control is to select varieties that are not prone to zippering.



Sunscald

Sunscald occurs when tissue temperature rises above about 86° F. The high tissue temperature will not allow the red pigment to develop and flesh will not soften. Instead, fruit will have hard, yellow areas (usually on the shoulder of the fruit). This disorder can become lethal if tissue temperatures rise above 104° F, turning tissue white. Damage usually occurs when fruits are suddenly exposed to sunlight, either after a harvest, storm (when leaves are moved around), or pruning event. Sunscald problems occur more often on fruit in the upper part of the plant, but can occur throughout, especially as leaf damaging insect pest populations increase. Good spray programs to ensure good foliage cover can reduce the problem.



This information was taken from the UF/IFAS publication titled *Physiological, Nutritional, and Other Disorders of Tomato Fruit*. To view the full length of this publication visit <http://edis.ifas.ufl.edu/HS200> or stop by our office to pick up a free copy.

Baker County Extension Service
1025 West Macclenny Avenue
Macclenny, FL 32063

Phone (904) 259-3520

Fax (904) 259-9034

Email: alamborn@ufl.edu

Website: <http://baker.ifas.ufl.edu>

Non-Profit Org.
US Postage
PAID
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Macclenny, FL 32063

ADDRESS SERVICE REQUESTED

Extension programs are open to all people regardless of race, color, age, sex, handicap, or national origin. In accordance with the Americans with Disabilities Act, any person needing a special accommodation to participate in any activity, should contact the Baker County Cooperative Extension Service at 1025 West Macclenny Avenue, Macclenny, FL 32063 or telephone (904) 259-3520 no later than five (5) days prior to the event. Hearing impaired persons can access the foregoing telephone by contacting the Florida Relay Service at 1-800-955-8770 (voice) or 1-800-955-8771 (TDD).



COME GARDEN WITH US!!

**UF/IFAS-Baker County Extension Service is now
accepting applications for Master Gardener volunteers**



The Master Gardener program is a national program of volunteers who are associated with the Extension Service. Trained Master Gardener volunteers help extend unbiased, research-based information about horticulture, from that state's land grant universities (University of Florida, in our case) to people in their county who need that information.

In Baker County, a Master Gardener might serve in one of the following roles:

- ◆ work with horticulture extension staff at the office
- ◆ assist horticulture agent with horticultural extension programs
- ◆ assist horticulture agent with yard visits to homeowners
- ◆ answer homeowner questions at plant clinics
- ◆ work with youth to plant and maintain school gardens
- ◆ plant and maintain demonstration gardens
- ◆ grow a flower crop in the extension greenhouse
- ◆ work at the extension fair booth at the Baker Co. Fair
- ◆ work with youth in the Jr. Master Gardener Program

This is a great volunteer opportunity for anyone who is interested in plants and is willing to learn more. We will teach you everything you ever wanted to know about plants and you will pay us back by volunteering in 2010 to do one or more of the jobs listed above.

Applications accepted until August 14th at 5 pm.

**The classes are held from 9:30 am to 3:30 pm each Wednesday starting August 26th until mid November.
The cost for the class and reference books is \$85.**

Visit our website or stop by the extension office for an application packet or for more information.

For Extension Programs offered around the state, see the IFAS Extension Web Calendar at <http://calendar.ifas.ufl.edu/calendar/index.htm>.