

Vegetarian Newsletter

A Vegetable Crops Extension Publication
Vegetarian 02-05
May 2002

University of Florida
Institute of Food and Agricultural Sciences
Cooperative Extension Service

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Events Calender

Twilight Field Day. Thursday, May 9. 4:30 - 7:45 PM. NFREC-Live Oak. For more information call 386-362-1725.

Commercial Vegetable Marketing In-service Training. May 20-21. To be held at the Mid-Florida REC-Apopka. For more information, contact Fritz Roka at 941-658-3400 or fmro@gnv.ifas.ufl.edu.

FACTS 2002 - Florida Agricultural Conference & Trade Show. May 22, 23. Lakeland Center.

Florida State Horticulture Society Annual Meeting. June 2-4. Marco Island.

Vegetable Field Day, Spring 2002. June 6, 2002. NFREC-Quincy. Contact: Dr. Steve Olson at 850-875-7144 or smolson@mail.ifas.ufl.edu.

Commercial Vegetable Production

Late Blight on Tomatoes

Late blight (*Phytophthora infestans*) has been a sporadic problem for Florida tomato and potato growers for years and has the potential to devastate a field in a matter of days. This season we have seen one of the most widespread late blight outbreaks in several years in the Palmetto/Ruskin area. The disease has been very scattered in most fields and the incidence relatively low, but most field managers or scouts could find late blight lesions which persisted even through the dry spells and hot temperatures which presumably provided a less than optimum environment (Figure 1). Even apparently dry lesions were re-activated with minimal moisture. Also, in some fields, stem lesions were very abundant (Figure 2). While late blight is not a seed borne disease, it can enter a field on infected transplants; however, the primary source on tomatoes in Florida has not been found. Sporangia (spores) are usually dispersed aerially from one to several miles and can survive exposure to a certain amount of hot/dry conditions although moderate temperatures (60-80°F) are more favorable for disease development. In response to questions regarding spread of late blight via insect movement within a field, there is no evidence in the literature for transmission by this means, and the contribution to an outbreak would likely be small relative to the normal dissemination of inoculum. Movement and changes in the disease have led to more serious problems in recent years with strains which are more aggressive than previously dominant strains. The new strains are also insensitive to metalaxyl or mefanoxam. This season, the predominant strain in Hastings potato fields has been US 8, whereas the predominant strain in tomato fields in central and south Florida is likely to be US 17, although mating tests have not been completed. US 8 and US 17 are most aggressive on potato and tomato, respectively. Also, they are different mating types, increasing the threat of sexual reproduction. If the two strains are present together in the same location they are capable of producing oospores which allow the fungus to survive in soil or on old infected plant debris. In the absence of sexual reproduction, late blight requires a living host to survive; thus, sanitation becomes an important part of management strategy. Other potential sources of inoculum for tomato fields are infected volunteer tomato or potato plants, and plants related to tomato plants, such as petunia, hairy nightshade and bittersweet.

Growers have been spraying preventatively with a number of materials in rotation on a relatively tight schedule to help prevent spread to new foliage and to help dry up existing lesions. Many have been roguing leaves or leaflets and removing them from the field. Another technique that has been tried is herbiciding hot spots in a block. The problem with all of these methods is that there is no way to tell where the disease has already spread or where new lesions will appear. Also, when roguing foliage with existing lesions, workers could actually be spreading inoculum from infected to healthy plants. When blight is moving there are nearly always 3+ days of incubating lesions near a hotspot or focus which are not visible. In plots at the UF research station in Hastings, during severe epidemics it is not uncommon to see substantial differences in the number of lesions between morning and evening observations of the same plots. It's sometimes difficult to understand that what you are seeing today actually occurred 3 to 5 days earlier. In addition, even if there is sporulating blight present, it will not move if environmental conditions are unfavorable. But when conditions are favorable, individual lesions can produce an estimated 100,000 to 300,000 sporangia per day, based on research by Dr. Bill Fry's lab at Cornell University. This delay in symptom expression following inoculation can also make it difficult to judge protectant fungicide efficacy since invisible infections that are already present will likely continue to develop. Resistance to late blight is a part of some tomato breeding programs; however, incorporating resistance takes time and no late blight resistant tomato varieties are presently available. Growers therefore must rely primarily on protectant fungicide programs and sanitation as their first defense.



Fig. 1. Late blight lesions on tomato foliage and fruit.



Fig. 2. Late blight lesions on tomato stems.

(P.R. [Gilreath](#), Ext. Agt. IV, Manatee County, and D. P. [Weingartner](#), Hastings REC- Vegetarian 02-05)

Vegetable Gardening

Experiences with Sweet Onions and Mulch Color in North Florida

Sweet onion production is popular among dozens of small vegetable growers in North Florida. Onions are often used as a partner crop to strawberries on farms in the region. In addition, many farms that market at Farmers Markets or by other direct-to-consumer situations use onions as a high value crop to increase sales of other cool season vegetables.

Onions are produced using plastic mulch systems frequently, although open soil (non-mulched) systems are also used. Mulch systems are popular because many of the farms already use plastic mulch for many other crops they produce, such as strawberry, fall tomato, specialty greens, etc. Producers may apply new mulch in the fall, or use existing mulch from a fall crop for a double crop.

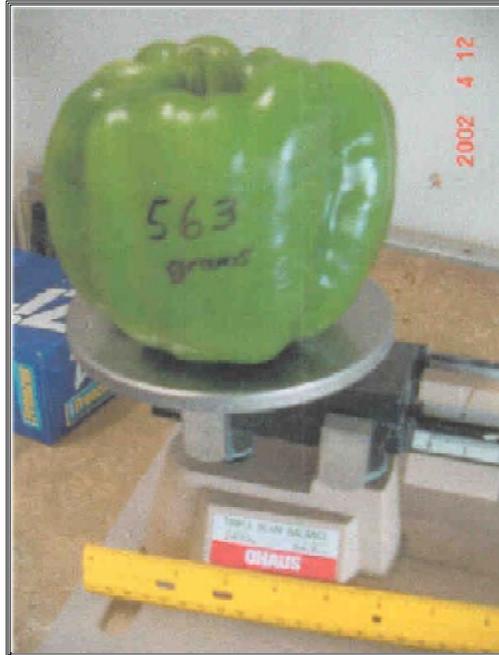
Most onions on plastic mulch are produced on black plastic. Onions produced on black plastic are generally a few days earlier than those produced on open soil culture. Occasionally, other mulch colors are used as a matter of convenience, especially in double crop situations after a fall crop. Fall crops in North Florida are usually grown on white or white-on-black mulch. The use of white, white-on-black, or reflective silver mulches can be very detrimental to onion production in cold winters. The winter of 2001-2002 was an unusually cold winter with temperatures in January through early March reaching lows of 15-20° F three or four nights throughout the region. These cold nights resulted in damage to onions in the region, even some to those grown on black plastic mulch. However, the most severe cold damage was to onions grown on white plastic. The cold damage there was so severe the onion crop was effectively destroyed due to the resulting small size of the bulbs at harvest, on a farm in Madison County. Onions grown on black plastic sustained less cold damage than those grown on open soil culture or white mulch. Demonstration plots at the North Florida Research and Education Center - Suwannee Valley over the past few years has shown the same results on various mulch colors. Therefore, growers should not use white, white-on-black, or silver-on-black mulches for onion production in North Florida.

(R.C. [Hochmuth](#), Multi-county Agt. NFREC-Live Oak - Vegetarian 02-05)

New Big Pepper Record is In

For over a decade, the record for the state's biggest bell pepper held up. That was a 1 lb. 1 oz. Monster grown by Mr. Amestey in Palm Beach County back on February 2, 1990.

That record was broken by Kenneth and Will Hyatt of Hyatt Farms in Lake Wales (Polk County) on April 24, 2002. This pepper (Fig. 1) weighed in at 1 lb. 3.84 oz. and was an X3R Wizard grown from seeds obtained from Petoseed company. The plant was set out on January 5, 2002 and harvested 87days later on April 12, 2002.



It was grown on fullbed plastic mulch with drip irrigation on high sandy ground with growth drainage. Cold protection was provided by the proximity to the Kissimmee River and Lake Kissimmee. This was on a commercial farm.

Certification for this current record was made by Ken Shuler, Palm Beach County Extension agent. Although retired, Jim Stephens is continuing to keep these state records.

(Stephens - Vegetarian 02-05)

Extension Vegetable Crops Specialists

Daniel J. Cantliffe Professor and Chairman	Mark A. Ritenour Assistant Professor, postharvest
Timothy E. Crocker Professor, deciduous fruits and nuts, strawberry	Ronald W. Rice Assistant Professor, nutrition
John Duval Assistant Professor, strawberry	Steven A. Sargent Professor, postharvest
Chad Hutchinson Assistant Professor, vegetable production	Eric Simonne Assistant Professor <i>and editor</i> , vegetable nutrition
Elizabeth M. Lamb Assistant Professor, production	William M. Stall Professor, weed control
Yuncong Li Assistant Professor, soils	James M. Stephens (retired) Professor, vegetable gardening
Donald N. Maynard Professor, varieties	Charles S. Vavrina Professor, transplants
Stephen M. Olson Professor, small farms	James M. White Associate Professor, organic farming

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This page is maintained by Susie Futch.... if you have any questions or comments, contact me at zsf@mail.ifas.ufl.edu.