

Tomatoes - Where Has All The Flavor Gone?

Dr. Richard G. Snyder,
Vegetable Specialist

During the cool months of the year, one of the popular topics of conversation revolves around people's amazement about how bad tomatoes taste in the winter. I have often compared "winter tomatoes" to wet cardboard, and sometimes the cardboard is even preferred. Two questions arise: 1) Why do winter tomatoes taste so bad? and 2) Are all of these winter tomatoes from greenhouses?

Let's take the second question first. The short answer is "NO". With all of the tomato consumption in the U.S. during the winter, it would take thousands of acres of greenhouses dedicated to nothing but

producing tomatoes. They simply do not exist. In the entire U.S., there are only about 450 acres of

greenhouses dedicated to growing vegetables, and these include cucumbers, peppers, lettuce, herbs, spinach, and other vegetables besides tomatoes. If you think that those bad-tasting tomatoes are from a greenhouse, then you have never tried greenhouse tomatoes at all.

Then, where do these tomatoes come from in the winter months? They come from points further south or more mild in climate. These areas may include Florida, Texas, California, Mexico, and Latin America, at different times during the winter.

Now we come to the first question -- the one about lack of flavor. As you know, the majority of tomatoes for sale in the late fall, winter, and early spring fall short of what most people are looking for in terms of good flavor. These

tomatoes, from the areas mentioned above, are picked at the first hint of color, graded, packed, and shipped north to meet year round demand. They are often gassed with ethylene to promote the development of red color and softening of the tissue. However, they

never do get that "backyard tomato" taste.

This is because they are picked too early. Why? They need to be shipped. A vine-ripened, soft tomato would not ship well at all. By the time it traveled several hundred miles in a semi trailer, it would be badly bruised and would end up in the trash. Tomatoes which are less ripe are firm, and maintain their physical quality much better when shipped. This may be a "catch 22" situation, but it is difficult to circumvent.

However, if you really do want a good tasting tomato this time of year, look for greenhouse tomatoes. These are truly vine ripened. They are not picked until they have good, red color. The quality is generally considerably higher than any tomato from the field, and the flavor is comparable to your back yard tomatoes.

Why don't you see more of these? There simply aren't enough to

go around. Of the 450 acres in the whole U.S. mentioned above, about 15 of those acres are in Mississippi. We have 110 growers in this state dedicated to growing good-tasting, hydroponic, greenhouse tomatoes. By the way, those 15 acres make Mississippi the 8th largest state producing this crop in the U.S. Demand is excellent, especially from up scale supermarkets and finer restaurants. The price is variable, but is always much higher than field tomatoes. And once again, the quality is very high.

So, if you want top quality, excellent tasting tomatoes in the off-season, all you need to do is look for one of your area greenhouse tomato growers. Incidentally, greenhouse tomatoes in the grocery stores are almost always labeled with a sticker, identifying them as either greenhouse-grown or hydroponic. Expect to pay a little more. But, after you try them, you'll most likely go back for more.

Honeybee Shortage in 1995

Dr. J. Pat Harris, Extension Entomologist

Where have all our honeybees gone? We had a shortage of bee activity in our



vegetable and fruit crops this past season. We received many calls from agents, homeowners, and gardeners in reference to our honeybee population decline.

Two tiny mites are the primary cause of decline. The tracheal mite attacks bee's breathing tubes and a second mite called the Varroa mite sucks hemolymph (blood) from bees, which weakens adults and young broods.

A new virus is also suspected to have added to our bee shortage problem. This combination of disease and mites is commonly referred to as the parasitic mite syndrome.

With beekeepers using mite control measures they can still face up to 25% loss to their hives. Populations overall may be off by 50%.

We have some feral pollinators as bumblebees carpenter bees, etc., taking up some slack by helping to pollinate crops. However, honeybees are hard to beat at pollinating crops.

Scientists are presently looking for ways to control the mite syndrome using vegetable oils, formic acid and eucalyptus products. They are also breeding mite resistance into bees which looks promising.

In the meantime, our gardeners and farmers can help safeguard our pollinator helpers by observing the following precautions with crop protection chemicals.

Ways to Protect Bees

Entomologists don't blame crop protection chemicals for the bee decline. But, gardeners and farmers can help safeguard their pollinator helpers.

Here are some key steps:

- Read insecticide labels. In some cases, two or more products will do the same job. But, one may be less toxic to bees.
- Make applications when bees are least likely to forage. Early morning or night is usually best.
- If possible, don't spray when crops are in bloom. In orchards, also consider ground cover that's blooming.
- Check for bee activity before spraying.
- Never spray near hives.
- Don't kill or destroy the homes of feral pollinators. Bumblebees and other insects take the place of declining honeybees.
- Before killing a swarm of bees, call a beekeeper.

Most county Extension offices keep a list of phone numbers for keepers who will transfer a nuisance swarm to a new location.

Reference: *Progressive Farmer/November 1995.*

Cabbage Disease Control in Mississippi

Dr. Frank Killebrew and
Dr. Joseph Fox, Extension
Plant Pathologists

Cabbage is susceptible to several important diseases, all of which may reduce crop yield and quality. For growers who plan an early crop, it's time to think about a cabbage disease control program for 1996. A preventive program will be necessary if bacterial black rot and fungal diseases such as alternaria leaf spot and downy mildew are to be avoided. Control of abiotic diseases, like manganese toxicity, will also require initiation of preventive measures before the crop is planted.

Manganese toxicity is most severe when cabbage is grown on soils with a pH below 5.5 or where soil drainage is poor and waterlogged

conditions exist for prolonged periods. The



condition can be avoided by establishing a pH between 6.0 and 6.8 and planting on a raised bed to improve water drainage. Improved drainage may also cut down on the amount of oedema (leaf wart), another abiotic condition aggravated by wet soil conditions and certain weather factors.

Although cabbage is susceptible to about a dozen serious diseases, the ones most likely to occur in Mississippi are those previously listed. All will be easier to control provided certain preventive measures

are carried out. For example, avoid fields where cabbage, or its relatives (turnips, mustard, broccoli, collards, etc.) have been cropped within three years. However, this type rotation requires that you be aware of all herbicides used on the crop preceding cabbage. Certain herbicides, such as atrazine and Command, present carryover problems which could result not only in damage to the cabbage crop, but also in illegal herbicide residues if cropping restrictions outlined on herbicide labels are not strictly followed.

If crop rotation is followed, *Alternaria* leaf spot and downy mildew are less likely to cause problems, but spores or other types of disease inoculum can be introduced into the production area via air currents, infested cultivation equipment, or any of several other ways. Infection occurs when plants are wet from rain or heavy dew. Since downy mildew and *alternaria* leaf spot must be kept in check at the beginning of the season,

preventive applications of Bravo 720 (1.5 pt/acre in sufficient water to provide coverage) should be carried out on a 7 to 10 day schedule. The first application should be made soon after transplants are set. Other formulations of Bravo are also cleared for control of downy mildew and *Alternaria* leaf spot. Maneb will provide adequate control of these diseases, but application should be limited to crops growing in fields with soil pH of 5.7 or higher. This is a precautionary step since the active fungicidal component in maneb fungicides is manganese, which could aggravate manganese toxicity problems.

The preferred method of fungicide application is via boom sprayers rather than air blast sprayers, as the latter type of application method is more likely to result in spread of pathogens such as black rot bacteria from infected to healthy plants.

Black rot is a disease that must be controlled by rotation, sanitation, and other cultural practices. Use healthy, vigorous transplants from a

reputable plant dealer. Avoid transplants that have been mechanically topped to toughen them or reduce their size in order to fit the plants into shipment crates. To avoid contaminating the transplants with the bacterium that causes black rot, transplants should not be sprayed or dipped in water prior to transplanting. Also, transplants should not have been packed in crates previously used for shipping cabbage, broccoli, cauliflower, mustard, turnips, collards, or radishes. Water for transplanting or irrigation should not originate from sources which receive surface runoff from nearby cabbage fields. As an additional precaution, avoid moving equipment or walking through the field when the plants are wet from dew or rainfall.

While following these guidelines will not insure complete freedom from

diseases, problems from the more important ones will be minimal. Growers should remember to scout fields for other diseases which could appear and

plan to collect specimens for examination by the county agent. Field scouting will also keep growers in touch with weed and insect problems

which must be minimized as part of the overall pest management program.

Calendar of Coming Events _

Dr. Richard G. Snyder, Vegetable Specialist

March 21-22 - **Greenhouse Tomato Short Course**, at Mississippi Agriculture & Forestry Museum, 1150 Lakeland Drive, Jackson, MS. For information, call Dr. Richard Snyder (601) 892-3731.

June 14-18 - American Society for Plasticulture & American Greenhouse Vegetable Growers Association (*joint conference*); at the Boardwalk Holiday Inn, Atlantic City, NJ. For information, call Dr. Richard Snyder (AGVGA Secretary) at (601) 892-3731 or Dr. Gene Giacomelli (ASP President) at (908) 932-9753.

July 12-14 - Southern Greenhouse Vegetable Growers Conference; at Del Lago Golf Resort & Conference Center, Lake Conroe, Texas. For more information, contact Rita Anders, Route 3, Box 35-B, Weimer, TX 78962 (tel: 409-263-5094).



you would like to have included in this calendar should be 60 days before the event. Send to me at the address, electronic mail address below.

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