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TO: COUNTY EXTENSION DIRECTORS AND AGENTS (VEGETABLES AND HORTICULTURE) AND OTHERS INTERESTED IN VEGETABLE CROPS IN FLORIDA

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VEGETARIAN NEWSLETTER 73-1

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I. COMMERCIAL VEGETABLE PRODUCTION

A. "Catface" in Tomatoes

Catface is a tomato fruit disorder which may be found from time to time wherever tomatoes are grown. The blossom end of the fruit is characteristically scarred and rough due to the abnormal development of the tissues in that area. The disorder should not be confused with blossom end rot which also affects the blossom end, but has entirely different visual symptoms and causative factors. The catfaced fruit usually has swollen areas with bands of scar tissue intermingled between them. There may also be cavities between the swollen portions that extend into the fruit. The symptoms may vary in intensity, but in all cases, the fruit is rendered unmarketable for the fresh market trade.

The precise cause of the disorder has not been completely determined. The occurrence of catface is apparently genetically modulated in that some varieties show a greater tendency to catface than others when the proper conditions occur. There are, however, certain conditions which frequently intensify or bring out the appearance of catfacing.

One such condition is inherent size of fruit. Catface is a greater problem in the large-fruited varieties than in the small. An additional aspect is that the incidence or percentage of catface varies with season. Generally, exposure to cool, unseasonable weather increases the likelihood that catfacing will appear. This has been observed in Florida in the past. The occurrence of extensive cool fronts sweeping into the State and remaining static for extended periods during the cropping season is not uncommon. We have noted substantial catfacing on fruit from second and third clusters on plants in south Florida, and at the same time from first and second clusters in north central Florida. The "outbreaks" could be attributed to cool, drizzly low pressure fronts which covered the entire State for about a week, during the early stages of development of fruit from the affected clusters. Fruit from clusters which appeared after the unfavorable weather conditions showed little catfacing. This pattern of appearance is common for the disorder.

The most common explanation for the cause of the disorder is the following. During the early stages of development of the flower buds and most likely through the pollination-fertilization stages of the female portion of the flowers, any physical injury to the delicate tissues can result in blossom drop or the production of abnormal fruit. Catfacing is thought to be caused by low temperature injury to the area near the base of the stylar tissue where it joins the walls of the ovaries. Subsequent development of the fruit results in the typical expression of catfacing symptoms described earlier.

(Kostewicz)

B. Foam and Foam Use

The use of foam materials in agriculture is not an entirely new area. In the late 1950's, foams for frost protection and herbicide applications were investigated. Some of this early work was done in Florida. As a result
of refinements in equipment and materials, a renewed interest has occurred within the State. A good deal of the interest has been stimulated by the increasing concern for the environment and the feeling that foam materials may offer a means of further minimizing potential undesirable effects of pesticide applications. The utilization of foaming materials as a means of controlling "drift" of applied pesticides from target areas is an example of such application.

Many potential uses have been listed by many sources recently and include:

1. Frost and freeze protection - a thermal "blanket"
2. Pesticide applications - as a carrier medium to minimize "drift"
3. Wind protection - to prevent:
   (a) sand abrasion
   (b) dehydration
4. Use in flaming - as a Heat Barrier
   (a) weeding
   (b) thinning
5. Use as a marker
6. Fumigation cover
7. Mulch for moisture control
8. Erosion control
9. Carrier for cleaning materials

Many others have been given and the lists have often only been limited by the imagination of the writer.

The foams can be referred to as either "thick" or "free-flowing" foams. This distinction is based upon the method of generation and application more so than a great difference between the foaming agents.

"Thick" foams are those which are commonly produced by a "generator" and distributed as foams to the point of application. They are used as a thick "blanket" type. Stabilizers can be incorporated in varying proportions to impart the desired length of service, i.e. "long lived" or "short lived." This type of foam has been emphasized in frost and cold protection work.

"Free-flowing" foams are produced at the point of exit of the spray by incorporating air into the solution to impart the foam characteristic. These are short-lived foams and do not have a heavy consistency like shaving cream, but are rather "frothy" or "sloshy" solutions. These types of materials are the "drift control" agents for pesticide applications.

A great deal of searching and testing for practical applications and their effectiveness is underway throughout the country. Time will indicate whether foams will be of lasting value in agriculture or fade from the picture.

A Partial Listing of Foam Equipment and Materials Available

Foam Generators

Waukesha generator system - Waukesha Foundry Company, Inc. A foam generator which produces a "thick" foam with a number of available foamable
liquids, but has the capability of producing a "free-flowing" type of foam with minor changes in the delivery system and foaming agent combination.

Air-Aspirating Nozzle Systems for "Free-Flowing" Applications

Dela-foam - Delavan Manufacturing Co. (manf. recommends using "Fomex")
Foam Jet Spray Tips - Spraying Systems Company
Foamspray System - Service Technology Corp. (manf. recommends using "Foamspray")
Accutrol System - Velsicol Chemical Corp. (manf. recommends "Accutrol Spray Adjuvant")

Foamable Liquids

Agrifoam - Laurentian Concentrates
Thermofoam - Waukesha Foundry
Fomex - Colloidal Products Corporation
Foamspray - Service Technology Corporation
Accutrol Spray Adjuvant - Velsicol Chemical Corporation

\textit{NOTE:} The use of trade names or company names in this publication is solely for the purpose of providing specific information. It is not a guarantee or warranty of the products named and does not signify that they are approved to the exclusion of others of suitable or similar composition. 

(Kostewicz)

C. "Blind Bud" in Vegetable Crop Seedlings

Blind bud is a term commonly used to describe a condition in seedlings where the bud fails to develop. Depending on the crop species, plants affected by the disorder fail to develop at all or are delayed in growth. Blind bud can be found occasionally in most broadleaf crops and to a much lesser extent in the grass family crops like sweet corn.

Blind bud is quite common in bean seedlings. When it affects beans, it is generally called "baldhead." It has been observed occasionally in cabbage seedlings growing in the field and in plantbeds. Last fall, it severely affected some plantings of direct-seeded tomatoes in Dade County. The first reaction was to blame the seed. However, when seed of the same lot was planted in other fields or in the greenhouse, seedlings appeared to be perfectly normal. Except for beans, blind bud is not usually the fault of the seed. However, blind bud (baldhead) in beans is caused by physical injury to the embryo (bud) resulting from hard impacts in threshing and cleaning, handling bags of seed, seed hoppers, etc.

In most cases, it is impossible to determine the exact cause for blind bud. Recently, extension workers in California reported that the disorder in cole crops was definitely proved to be caused by the first instar larva of the diamond back moth. This conclusion was made after microscopic examinations revealed eggs and larva to be quite common in the buds of young seedlings in cabbage and cauliflower fields where blind bud was present.
We can now be fairly certain of two possible causes for blind bud
in seedlings. Others which we feel are definite possibilities and
should be considered are herbicides and other chemicals, weather factors
including frost, freeze and high temperatures, diseases, other insects, etc.

(Montelaro)

D. Index to Old Issues of Vegetarian Newsletter

The Vegetarian Newsletter has been published by the Vegetable Crops
Department of the University of Florida since 1950. From four to six issues
were prepared annually until last year, when it was changed to a monthly
newsletter. The monthly newsletters are indexed annually to cover the vege-
table production season considered to be July 1 to June 30 in Florida.

Prior to the changeover to a monthly newsletter and annual indexing,
some ninety issues of the Vegetarian Newsletter had been published. A file
copy of each is maintained in our office. Recently, each issue was checked
carefully and those items which are still significant to vegetable production
were indexed for reference purposes. A copy of this index is enclosed as a
separate item with this newsletter.

Single copies of the topics covered in the index can be obtained from
the Vegetable Crops Department, University of Florida, Gainesville, Florida.
Please be selective in your requests, as items will have to be reproduced
by a copying machine from our file copy.

(Montelaro)
THE VEGETARIAN NEWSLETTER

II. VEGETABLE GARDENING

A. Florida 4-H Vegetable Program Summary

Various projects and activities relating to vegetables are available to 4-H members in the State of Florida. They range in scope from the simple experience of investigating a lima bean seed in a school classroom to the sophisticated production of a large acreage of tomatoes. Rarely would we find a county without at least one 4-H member who could relate to one or more of these activities.

Here is a summary of the various projects and activities which collectively are considered the Florida 4-H Vegetable Program.

1. Seeds and Plants - A 4-H Special Interest Project

This SI Project is designed to be taught in the classroom. It consists of eight exercises, each of which may be conducted by students in a 45-minute session and observed in a later session. The exercises are as follows:

- SI 20.1 Introducing a Seed
- SI 20.2 Watching Seed Sprout
- SI 20.3 Testing Seed Germination
- SI 20.4 How Age Affects Seeds
- SI 20.5 Planting a Seed in a Peat Pellet
- SI 20.6 Plants and Fertilizer
- SI 20.7 Depth of Seeding
- SI 20.8 Light and Plants

(Literature is available)

2. Beginning Gardening - Vegetable Gardening (Unit I)

Those taking this project could participate in various ways: (a) have their own garden plot, (b) be responsible for part of the family garden, or (c) care for part of a community, group or school garden.

The scope of the member's involvement in this project varies with each individual, depending on space available, member's age, level of experience, available time and family situation. (Literature is available.)

3. Beginning Gardening - Plant Science Experiments (Unit I)

This project is designed for 4-H members who do not have the time and space necessary to grow a garden, yet who wish full involvement in 4-H (rather than Special Interest).

Five easy experiments are outlined from which to select. Members are required to complete at least three of them. (Literature is available.)

4. Beginning Gardening - Growing Vegetables in Containers (Unit I)

This is another project which may be taken without the necessity for a large amount of space.
Many kinds of containers could be used--bushel baskets, hampers, drums, gallon cans, or others. The "soil" might not be soil at all, but something like sawdust, woodshavings, pebbles, or even water. Growing plants in these kinds of artificial "soils" are usually called soilless culture or hydroponics.

Three methods have been outlined for members to choose from in this project area. They are: (1) strawberry barrel; (2) single plant containers, and (3) water culture. Any one of these three may be selected to meet the project area requirements. (Literature is available.)

5. Beginning Gardening - Vegetable Identification Workbook (Unit I)

This project fits the needs of both rural and urban youth. It involves a workbook entitled, "4-H Vegetable Judging, Grading and Identification Workbook." It is about garden insects, diseases, weeds, varieties, seeds, and other gardening topics. Participants in this project must make drawings, paste pictures, or tape actual specimens in the workbook spaces provided. (Literature is available.)

6. Advanced Gardening

Participants in this project are entered in the State 4-H Horticultural Awards Program (formerly the Allis-Chalmers National Program) which entails a trip to National 4-H Congress for the State winner. It differs from the Beginning Gardening Project mainly in that it is more extensive.

This project includes such vegetable production systems as (1) a home garden, (2) a market garden, (3) a commercial crop, (4) a hydroponic unit, (5) a greenhouse crop, or (6) container culture. (Literature is available.)

7. Vegetable Judging, Grading and Identification Contest

This activity is an educational contest involving (a) the identification of various insects, diseases, weeds, seeds, nutritional disorders, and kinds and varieties of vegetables, (b) the judging of vegetables for quality, and (c) the grading of potatoes for quality and grade standards.

4-H teams are encouraged to train at the local and county levels to compete at all levels, including a state contest and a national contest. (Literature is available.)

8. Horticultural Demonstrations

Through this competitive event, 4-H members share their skills and knowledge learned in the various vegetable projects, and demonstrate their ability to plan, organize, speak and think "on their feet."

A horticultural demonstration may be given by an individual or a team of two. Contests are conducted at the local, county, district, state and national levels. (Literature is available.)
9. National Junior Horticultural Association Projects (NJHA)

The NJHA promotes and sponsors an educational program of horticultural projects at the national level. In Florida, these projects overlap and supplement those conducted within the 4-H framework.

The various projects conducted by NJHA at the national level are (1) Horticultural Demonstrations, (2) Horticultural Identification, Knowledge and Information Contest, (3) Achievement and Leadership Recognition, (4) Experimental Horticulture, (5) Environmental Beautification, (6) Speaking of Horticulture, and (7) Production and Marketing. (Literature is available.)

For information pertaining to the various projects and activities outlined above, please contact either the State 4-H Club Office or Jim Stephens, Assistant Vegetable Crops Specialist. Literature is available from either the Editorial Department Bulletin Room or the Vegetable Crops Department.

(Stephens)

B. Know Your Vegetables - Husk Tomato

The husk tomato, Physalis sp., is also called ground cherry, strawberry tomato, Chinese lanterns, tomatillo, bladder cherry, aklekengi, and Cape gooseberry. It is a member of the Solanaceae family.

Husk tomatoes are occasionally found in home gardens in Florida, as it is sometimes advertised in plant and seed catalogs. It is not a commercial crop.

Plants are annuals in the north, but some forms are perennial farther south. Both upright and trailing forms occur. One form is an exotic super-hardy 2-foot high perennial with heart-shaped leaves. Its small white flowers in spring are followed by large dense clusters of 1 to 2-inch brilliant orange-scarlet lantern-shaped fruits in the fall. Each fruit is smooth skinned and completely enclosed in a thin papery husk, which is free and easily removed. Each fruit contains many small, inconspicuous seeds.

The whole fruit is used, after husk is removed, mainly in preserves. Further reports indicate that pies are made from fruits which have dropped and matured on the ground.

(Stephens)