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

FROM: J. M. Stephens, Associate Professor & Extension Vegetable Specialist

VEGETARIAN NEWSLETTER 78-2

IN THIS ISSUE:

I. NOTES OF INTEREST

A. Congratulations - J. Montelaro
B. Getting More Mileage from your Vegetarian

II. COMMERCIAL VEGETABLE PRODUCTION

A. Selecting Vegetable Varieties that Sell
B. Subsoiling Watermelons in North Florida
C. Avoid the Transplant Production Nightmare
D. Watermelon Foliage Disease Control in Florida
E. Harvesting and Handling Watermelons

III. VEGETABLE GARDENING

A. 'Florida Staysweet' Corn - A New Variety for Home Gardeners
B. Know Your Vegetables - Upland Cress

NOTE: Anyone is free to use the information in this newsletter. Whenever possible, please give credit to the authors.
I. NOTES OF INTEREST

A. Congratulations - James Montelaro

Jim Montelaro has been contributing to the Vegetarian since 1952, monthly since 1971. Through this newsletter extension and research workers, teachers, growers and industry representatives have become familiar with his effective program. The Vegetarian has been just one part of his work. In recognition of his contributions, Jim has been selected to receive the Henry M. Covington Extension Award by the Southern Region of the American Society for Horticultural Science. Congratulations, Jim!!!

(Kelly, Marlowe, Marvel, William and Stephens)

B. Getting More Mileage from your Vegetarian

Many offices receive only one issue of the Vegetarian. We have been told that in many of these offices it is not circulated among other staff. We encourage you to circulate the Vegetarian rather than ask us to increase the size of our mailing list. However, we do want to have regular users of Vegetarian material on our list.

(Kelly)

II. COMMERCIAL VEGETABLE PRODUCTION

A. Selecting Vegetable Varieties that Sell

This article is the second in a series of summaries from the Thomasville Market meeting sponsored by the Georgia Department of Agriculture - Marketing Division and the Georgia and Florida Cooperative Extension Services.

Growers must consider many factors when selecting vegetable varieties and crops to grow for profit. In previous issues of the Vegetarian Newsletter, numerous articles describe the need for planting high quality seeds (73-12, 74-8, 76-1, 76-2 and 77-1). Another essential factor is selecting a vegetable variety is choosing one that sells.

The best advice is get to know the customer, who may be the buyer at the market. Local market gardeners or roadside stand operators need to provide a wide array of vegetables. Varieties should be selected according to local preferences. A wide variety of colorful vegetables in a roadside stand or curb market will attract customers and bring repeated business.
Vegetable growers who sell through a local market with buyers from national market outlets should consider varieties that are preferred nationally. Also, some of these markets are recognized for a certain type of vegetable. For example, the Thomasville Market is known for supplying yellow crookneck squash and the buyers prefer the 'Dixie Hybrid' variety, whereas other markets are known for supplying the straightneck varieties. County agents should contact Mr. Roscoe Stewart, Manager, Thomasville Market, about a list of vegetables and varieties.

Another aspect to consider is seasonal prices and price duration during the growing season for certain vegetable varieties. The buyer or the market manager knows which varieties maintain the highest prices during the growing season. For example, 'Purple Hull Crowder', 'Purple Tip Crowder', 'Blackeye' and 'Acre' peas tend to maintain a slightly higher price for a longer period at the Thomasville Market than 'Pinkeye', 'Green Crowder' or 'Conch' peas. Growing these varieties for the Thomasville Market is always better than growing the old variety 'Purple Hull' or 'Big Boy'.

The buyer or market manager knows which varieties or crops make up the largest volume of sales at that market, also, which specific crops or varieties may enjoy a stronger market demand and possibly a higher price during certain times of the year. However, before planting to produce during a period of higher price it should be determined whether high yields of quality vegetables can be grown at that time. It is also important to calculate expected expenses and to evaluate the potential profit margin before planting.

After selecting the correct variety, the grower must concentrate on growing, harvesting and marketing the very best quality product. The vegetables should be picked at the correct maturity, handled and graded properly, packed in clean crates of the proper size and dimension, and sold as soon after picking as possible to keep the produce fresh and attractive.

(William)

B. Subsoiling Watermelons in North Florida

Many watermelon growers along the north Florida border subsoil before planting melons on the reddish sandy or sandy loam soils characteristic of the region. The purpose of subsoiling is to break a "hard pan" or "plow pan" directly beneath the watermelon row. The watermelon tap root will grow through the broken "pan" and absorb more water and plant nutrients.

According to Dr. Fred Rhoads, Soil Scientist at the Quincy AREC and others at Tifton, Georgia, these soils contain a clay fraction in the surface or sometimes in the subsurface horizon. A "hard pan" is formed when equipment or large animals apply pressure to these soils. A "plow pan" is formed when the bottom of a mold board plow compacts the soil under the plow. Even the edge of a harrow or disc can create some compaction. Thus, excessive harrowing or repeatedly driving tractors and equipment across the field should be avoided.
Most "pans" occur from 6 to 14 inches (15cm to 42cm) deep. You can test your soil for a "hard pan" by sharpening a half inch (1cm) rod and pushing it into the soil. If the rod stops suddenly, it may have hit a "hard pan". Use a shovel to remove the surface soil. You can identify a "hard pan" by looking for a rather thin layer of densely compacted clay. Usually, the clay particles will be arranged horizontally. Seeing this makes it obvious why plant roots cannot grow through this compacted layer.

The objective of subsoiling should be to break the "hard pan" beneath the crop row and to prevent formation of a new "pan". Usually, a single subsoiling unit is used for watermelon production. It should be set just deep enough to break the "pan". Considerably more energy is used in subsoiling deeper than necessary. To reduce the number of trips over the field, growers should consider which other planting operations could be accomplished at the same time as subsoiling.

Watermelon growers polled during a recent series of grower meetings. We found that most of the growers in Jefferson County and approximately 25% of the growers in Jackson, Washington, and Holmes Counties subsoil their watermelons. Average yields during the drought last year were around 25,000 lbs of melons per acre in Jefferson County. In west Florida, the growers who do subsoil indicated that it was essential for their farming operations.

(William)

C. Avoiding the Transplant Production Nightmare

Many plant growers this past month have been experiencing unusual symptoms on the seed leaves and stem tips of seedling tomatoes, peppers, and eggplants. In some cases the problems have been associated with diagnosable diseases caused by plant pathogens such as late blight, pythium, and rhizoctonia. Most of the problems, however, have been related to too much care.

Growing seedlings is very much like agricultural journalism. Experienced writers tell young writers: Keep it short. Keep it simple. Perhaps plant growers need a simple formula such as that. If they followed an "as needed" rule, rather than "if some is good more is better" rule they could eliminate a great many of their serious problems.

Most problems being brought to our attention are "undiagnosable" because so many things have been done to these plants. It is not uncommon to find that a grower has put on 4 different fungicide-bactericide sprays, 3 different insecticides, and 3 different nutrient spray applications in a one week period.
Water is often applied in this "more is better" manner, too. Root oxygen is often so depleted that the seed leaves drop, the true leaves are small and yellow, and the spindly plant almost perishes trying to signal that strangulation is occurring.

What basic program will help alleviate these serious mistakes?

1. **Fungicides**

   Plant growers should apply only one good fungicide every 5 to 7 days. Coverage should be complete. Application should be made when the leaves are dry. Maneb sprays are recommended and strict adherence to label directions are mandatory.

   If growers prefer to apply a fungicide as a smoke bomb during the night hours, extra precautions should be taken. Dr. Tom Kucharek, Extension Plant Pathologist, says that the chlorothalonil bombs are very effective, and with reasonable care should not be too hazardous. Growers should close up their greenhouse, place the specified number of bombs, and then light the wicks as one proceeds out of the greenhouse. Dr. John Paul Jones, AREC-Bradenton, cautions that re-entry into the greenhouse should follow label directions precisely.

2. **Bactericides**

   Outdoor plant beds require a slightly different approach than media-grown plants in multipot trays in a greenhouse. A combination of basic copper sulfate with the maneb spray is recommended as a preventative or as an as-needed spray to reduce the possibility of bacterial spot.

3. **Good Sanitation Practices**

   General cleanliness of the area and workers, making routine observations of the plants, avoiding excess humidity, temperature, or shade conditions, and prompt removal and destruction of sick plants are very important.

4. **Insecticides**

   Plant growers should be cautioned about label instructions on insecticides, as many have approval for outdoor use, but not for use in greenhouses. Some are more phytotoxic on young seedlings in the greenhouse than they are on more mature plants in the field. Many materials might be used which do not have greenhouse clearance, but we should promote strict adherence to the label.

   Insecticides may be applied on an "as-needed" basis, but most growers prefer a preventative program. Endosulfan (Thiodan) and products containing Bacillus thuringiensis are approved for greenhouse use. Dr. D. J. Schuster, AREC-Bradenton, feels that these make a very effective combination for most of the insects encountered.

   Discretion should be used for the selection of a "clean-up" spray for leafminers. Methomyl, naled, dimethoate, and azinphosmethyl insecticide are not cleared for greenhouse use, and Monitor has special restrictions which should be read very carefully.
5. **Watering**

Watering should not be done by the calendar or clock. Overwatering invites root oxygen starvation, invasion by pathogens, and excess use of fertilizer. In large operations the entire greenhouse often gets a water application even though the grower feels that only some need it. Provision should be made for spot watering those plants which need it when others do not.

6. **Symptoms**

Many plant trays are brought to our attention with plants showing a wide range of symptoms. The symptoms are seldom clear-cut, and when a case history of the problem is made one can soon see that any one of several practices may have caused the disorder. When the problem has been compounded by so many factors, diagnosis is all but impossible. Thus the nightmare for plant growers continues.

A simple program based on successful practices should be modified with caution. It is like the old-timer said, "All the folks in my town are Baptists and Democrats unless they have been tampered with".

(Marlowe)

D. **Watermelon Foliage Disease Control in Florida**

Extension agents in Florida are probably called upon more often for information on foliage disease control for watermelons than for any other crops. On many occasions, the call is made too late to assemble needed equipment and materials in time to take effective action. Downy mildew (wildfire), for example, spreads so rapidly that a one- or two-day delay can mean total failure. The successful watermelon grower is the one who plans in advance to carry out a good disease control program. By doing this, it can be done effectively and at a minimum cost.

Dr. D. L. Hopkins, Associate Plant Pathologist at the ARC, Leesburg has worked on watermelon foliage disease control for a number of years. We asked him to summarize his observations on the major foliage diseases of watermelon and how best to control them. His suggestions should be studied carefully by all watermelon growers, especially in relation to effectiveness and cost of each fungicide. Properly used, these suggestions can go a long way toward eliminating failures in watermelon production due to foliage diseases. They are as follows:

"The recommended fungicides (Table 1) will control the major foliar fungus diseases of watermelon. The fungicide sprays may be applied by various high-volume or low-volume ground sprayers and by airplane sprayers. Regardless of the method of application, complete coverage of the foliage is most important for good disease control. Inadequate coverage results in poor disease control. The number and timing of spray applications depend primarily on weather conditions. More sprays are required generally in southern Florida
than in central and northern Florida. In southern Florida fungicide sprays are necessary from seedling emergence; whereas, in northern Florida regular sprays usually are not necessary until vining or fruit-set stages."

### Recommended Fungicides for the Control of Foliar Diseases of Watermelon

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Rate (amt./acre)</th>
<th>Min. Days To Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maneb 80%</td>
<td>1 1/2 lbs.</td>
<td>5</td>
</tr>
<tr>
<td>Dithane M-45 80%</td>
<td>1 1/2 lbs.</td>
<td>5</td>
</tr>
<tr>
<td>Manzate 200 80%</td>
<td>1 1/2 lbs.</td>
<td>5</td>
</tr>
<tr>
<td>Difolatan 4 flowable</td>
<td>2 1/2 pts.</td>
<td>NTL</td>
</tr>
<tr>
<td>Bravo 75% or 6F</td>
<td>1 1/2-2 1/2 lbs.</td>
<td>NTL</td>
</tr>
<tr>
<td>Benlate 50%</td>
<td>1/4-1/2 lb.</td>
<td>NTL</td>
</tr>
</tbody>
</table>

1 This is the minimum number of days allowed between the last foliar application and harvest. NTL = no time limit.

2 Benlate does not control downy mildew or Alternaria leaf spot.

"Gummy stem blight and downy mildew are currently the two most prevalent and damaging foliar fungus diseases of watermelon in Florida. The gummy stem blight fungus causes leafspots, stem cankers, and fruit rot. All the recommended fungicides in Table 2 can provide adequate control of gummy stem blight. In wet, rainy years when this disease has been quite severe, Difolatan has been most effective against it in tests at Leesburg (Table 2)."

"The downy mildew fungus attacks only the leaves of watermelon. When environmental conditions are favorable, downy mildew develops rapidly and may give an entire field a "burned-off" appearance. Dithane M-45, Manzate 200, and Bravo have consistently provided the best control of downy mildew in tests at the ARC, Leesburg (Table 2). Benlate does not control downy mildew. It is most important with this disease that fungicide applications be made before the appearance of symptoms in the field."
Table 2: Fungicidal Control of Downy Mildew (DM) and Gummy Stem Blight (GSB) of Watermelon at Leesburg, Florida

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Rate (Amt./100 gal. per acre)</th>
<th>% Disease</th>
<th>1971 Yield (tons/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% disease</td>
<td>DM (1971)</td>
<td></td>
</tr>
<tr>
<td>Dithane M-45</td>
<td>1½ lbs.</td>
<td>39</td>
<td>18</td>
</tr>
<tr>
<td>Manzate 200</td>
<td>1½ lbs.</td>
<td>--</td>
<td>27</td>
</tr>
<tr>
<td>Bravo</td>
<td>1½ lbs.</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td>Difolatan</td>
<td>2½ pints</td>
<td>22</td>
<td>53</td>
</tr>
<tr>
<td>Benlate +</td>
<td>½ lb. +</td>
<td>42</td>
<td>35</td>
</tr>
<tr>
<td>Manzate 200</td>
<td>1 lb.</td>
<td>--</td>
<td>89</td>
</tr>
</tbody>
</table>

1Ratings were made the third week of June in both years.

"With the widespread use of anthracnose-resistant commercial watermelon varieties, anthracnose is not the serious overall problem that it used to be. Where anthracnose race 2 does occur, it can be controlled with recommended fungicides. Alternaria and Cercospora leafspots also occur on watermelon in Florida, but are not as severe as gummy stem blight and downy mildew. They are more easily controlled with fungicides."

"Bacterial leafspot is a disease associated with cool, wet weather. This disease usually disappears with the onset of warm dry weather, but if it becomes severe it can be controlled with copper sprays (3 lbs. of 53% copper per acre)."

(Montelaro and Simone)

NOTE: Dr. Gary Simone is Extension Plant Pathologist, IFAS, Gainesville.
E. Harvesting and Handling Watermelons

There are several good reasons why more attention must be paid to the harvesting and handling of watermelons. The main reasons are: Cost of production gets higher every year, competition from Mexico and elsewhere is becoming more intense, and buyers and consumers are demanding better appearance and quality.

There are about ten points that should always be kept in mind. Some of these may seem to be so simple that everybody who grows and ships watermelons should already know them, yet we see them ignored or forgotten every year.

1. Have a buyer/broker and transportation lined up before making a final decision to plant. Get to know the buyer and work out differences and any previous disagreements early. He is just as anxious as the grower to have a smoothly operating harvest and shipment. After the crop is ready to harvest is no time to begin negotiating. Trucks for hauling watermelons are usually in short supply. Indications are that the situation may get worse this year, so make sure there will be a dependable source of transportation.

2. Most growers now use high levels of fertilizer, irrigation and intensive cultural practices. This creates very rapidly growing and rank plants, but also makes conditions right for foliage diseases. In watermelons, the sugars are formed by the foliage and translocated into the fruit during the last few days before maturity; therefore, living functioning vines are necessary to produce sweet melons. Vines must be kept alive as long as possible. This also reduces sunburning of melons.

3. Maturity is based on many factors. The most dependable means of determination is experience and judgement. Here are some factors that must be used.

   a. First harvest vs. later harvest. The first harvest is always the most difficult to determine and this varies greatly among varieties, time of year, whether irrigated or non-irrigated, wet or dry season, high or low fertility and foliage disease severity. Only an experienced cutter can put all these factors together and cut with reasonable accuracy. Cutters will open many more melons in a new field than in subsequent cuttings. Using an experienced cutter is most important, especially for first cuttings.

   b. Every variety has slightly different indicators and these must be studied and learned. 'Charleston Gray' is probably the easiest and most "forgiving" of the present varieties. This may be either good or bad. Usually, if cut too immature, they will eventually turn pink or red. They will never develop acceptable sugar levels if harvested too green, even though they will look ripe. Some of the new varieties have a very short prime maturity time and deteriorate rapidly if harvested too ripe.
4. It is important not to cut too far ahead of shipment. One-day's loading is the maximum that should be cut ahead except in times of emergency, such as holidays or when heavy rains are expected.

5. Melons should be handled as few times as possible. Loaders must not throw, walk or ride on loads from fields. In addition to causing internal injury that cannot be seen until the melon has been cut, every time a melon is handled, external scuffs and scars are increased and the melons become more unsightly several days later. Internal injuries, splitting, water-soaking, etc., even though the melons are still edible, are so unsightly that retailers who sell sliced watermelons usually throw them away.

6. Melons should always be stacked in the shade — in stacks not more than 6 to 8 melons high with plenty of mulch straw on the bottom. If they are left in the truck or wagon — it is important to park in the shade where there is plenty of air movement, but never next to a metal building.

7. Field wagons should be padded well with burlap bags or carpet. Since burlap bags are now more difficult to find, pile carpet remnants are usually available from carpet shops. Some hay or straw should also be used in the bottom and it should be cleaned out every day to avoid abrasion from accumulated sand.

8. Long melons all have thin blossom ends. Crossway loading is a good idea for long melons, but it has never been adopted. The work was done primarily with rail cars and no melons are shipped by rail now. Loading and packing should be done so that the thin ends are protected using fresh clean hay or straw. Again, an experienced packer is essential to have loads arrive in good condition.

9. There are some innovations such as cartons and pallet-bins that will be used more in the future. More work needs to be done on these new systems to make them more acceptable. Some of the problems have been that a standard carton size is difficult to establish with so many sizes and shapes of melons. Cartons strong enough to withstand stacking loads, leaking melons, rough handling, and receivers willing to pay the premium necessary to justify the added expense of the cartons are just a few problems.

With pallets, some of the same problems exist as with cartons. There is a need for standardization of sizes to conform to sizes of trailers and grocery stores, warehouses. There is a choice of nailed wood bins, plastic or veneer wire-bounds or knock downs, or returnable or disposables. Most melons are still loaded near fields where there is no hard surface for ordinary forklifts with platform tires. Growers should check into the use of loading equipment specially fitted with pneumatic field tires.

(Marvel)

III. VEGETABLE GARDENING

A. 'Florida Staysweet' Corn - A New Variety for Home Gardeners

Here is good news for home gardeners who like sweet corn "sweet". The University of Florida's Institute of Food and Agricultural Sciences (IFAS) has developed a new hybrid sweet corn variety with a much higher sugar content in the kernels than other available varieties.

Not only is the corn sweet when harvested, but it stays sweet for a relatively long period of time. Aptly enough, it has been named 'Florida Staysweet'.

The extra amount of sugar possessed in 'Florida Staysweet' is the result of a sugary gene which ordinary varieties of sweet corn do not have. Most commonly grown varieties have only about 3 percent sugar as compared with the 9 percent for 'Florida Staysweet'. If that sounds too sweet for good taste, keep in mind that out of 84 persons eating the new corn in one taste test, 56 acclaimed it as the best tasting corn they had ever eaten.

Perhaps just as important as 'Florida Staysweet's' original sweetness is its ability to remain sweet long after harvest. Unless the ears of ordinary varieties are adequately cooled, the sugar changes quickly to starch. The sweet flavor is gone in less than a day. You have only a few hours in which to harvest, then either cook or store the corn at its peak of quality. However, with 'Florida Staysweet', you may leave the ears unharvested on the plant for a few days without any appreciable loss of sweetness. For maximum tenderness, however, it is best to harvest at the precise time when it is first ready to eat.

With all varieties, including 'Staysweet', refrigeration below 45°F greatly helps to maintain sweetness. Tests have shown that 'Florida Staysweet' still may have from seven to nine percent sugar of its original nine percent after eight to ten days of storage at 38 to 44°F.

Ok! It tastes great, but how well does it grow? 'Florida Staysweet's' yield record shows it to be equal to other commonly grown varieties such as 'Iobelle'.


And, here's a real plus worth considering. It is resistant to northern leaf blight, a disease often encountered in Florida gardens.

Anything as good as 'Florida Staysweet' must have a few drawbacks. This new variety's weak point, although only slight, is in the nature of its seeds. Since they have so little starch in the kernel, the dried seeds do not sprout quite as strongly under all conditions as most sweet corn varieties. This weakness can be overcome by planting extra seeds in the row, then thinning seedling plants to the proper spacing.

**Special Requirements for Growing 'Florida Staysweet'**

If you plan to grow 'Florida Staysweet' in your garden, be sure that no other kinds or varieties of corn are growing within about 500 feet of it. Also, do not plant in your garden other varieties within 4 weeks of the planting date for 'Florida Staysweet'.

The reason for such special care has to do with pollination. Pollen from other varieties planted close by will be carried by the wind to the silks of your 'Florida Staysweet'. The resulting kernels will be starchy and unsweet. Likewise, pollen blowing from 'Florida Staysweet' and landing on silks of regular varieties will cause an undesirable starchy flavor in those kernels.

**Growing Instructions for 'Florida Staysweet'**

**BEST TIME TO PLANT**

<table>
<thead>
<tr>
<th>Location</th>
<th>Time Period</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH FLORIDA</td>
<td>March 15 to April 15</td>
<td>NOTE: Be sure the soil is warm before planting seed</td>
</tr>
<tr>
<td>CENTRAL FLORIDA</td>
<td>February 15 to April 1</td>
<td></td>
</tr>
<tr>
<td>SOUTH FLORIDA</td>
<td>September thru March</td>
<td></td>
</tr>
</tbody>
</table>

**SPACING AND SEEDING**

- Depth of Seed: 1 inch (plant shallow)
- Distance between plants after thinning: 12 inches
- Distance between rows: 30 to 36 inches
- Amount of seed required to plant 100 feet of row: 300 seeds
Pest Control

Keep weeds out by cultivating or mulching. Main insect pests are worms that feed in the bud and ear. Dusting or spraying with Sevin is beneficial. Except on seeds, use of a fungicide is probably not needed. Where nematodes are known to infest the soil, fumigate the garden with a nematicide such as D-D, EDB, Vapam, Fume V or Vorlex.

Harvesting

Like any variety of sweet corn, ears of 'Florida Staysweet' should be pulled at the peak stage of maturity. Normally, this will be between 75 and 85 days from date of planting.

When the silks turn brown, pop a few of the kernels with your fingernail to determine tenderness. Give the juice a taste test for sweetness. Fortunately, ears of 'Florida Staysweet' retain their good eating quality for a longer period of time than other varieties while still on the plant.

Storing

As with any sweet corn, store in the crisper until ready for cooking. Refer to the Introduction for more details on storing. At the present, little is known concerning the freezing and canning qualities of this new Florida hybrid. You might give it a try. This variety will maintain high sugar levels even when held for several hours without refrigeration, especially if not exposed to the sun.

Saving Seeds

Since 'Florida Staysweet' is a three-way cross hybrid, it is not advisable to save seeds for planting. The next crop will not have the same quality characteristics.

Seed Availability

Hopefully, you will find seeds of 'Florida Staysweet' for sale in your local seed and garden supply stores. Soon, it will be advertised in major seed company catalogs, and will be made available for mail order purchasing.

(Stephens)
B. Know Your Vegetables - Upland Cress

Cress is a general name for a range of plants eaten as a sharp salad garnishment or potherb.

Upland cress (Barbarea vulgaris) is one of three major cresses. The other two are watercress (Rorippa nasturtium-aquaticum) and garden cress, (Lepidium sativum).

Other names for upland cress are land cress, dryland cress, wild cabbage, cassabully, creasy salad, and scurvy grass. Upland cress is a member of the Cruciferae family. Two very similar, but slightly different species of upland cress are winter rocket (B. vulgaris) and Belleisle cress (B. praecox).

Upland cress resembles watercress in form and flavor. The leaves are very small, almost square shaped, with slight notching of the leaf margins.

Upland cress is seldom grown in Florida gardens, although it will grow here. Like spinach, it should be grown during the coolest months of the year. Being extremely hardy, it withstands most any Florida winter.

**Planting** -- Unlike watercress, upland cress may be grown on most garden soils and in a manner similar for the more common vegetables.

Seed should be sown in late September through December. Seeds should be planted shallow, about ½ inch deep, keeping the soil moist, especially at seeding time. Seeds should be planted fairly thick followed by thinning to remove the weakest plants and obtain the desired stand.

Since the seeds are small, it is necessary for the seedbed to be smooth, level and free of clods, trash and weeds. Rows should be spaced 12 inches apart. Plants spaced 3 to 6 inches within the row.

**Fertilizing** -- Before planting, fertilizer should be scattered over the bed surface and worked into the top 4 inches, using about 2 pounds of common analysis (e.g. 8-8-8) garden fertilizer per 100 linear feet of row. Later, as the plants are growing, a sidedressing with quickly available nitrate nitrogen may be necessary to prevent yellowing of the foliage.

**Pest Management** -- In areas where a lot of upland cress is grown, sometimes a foliage disease causing leaf spotting is encountered. Unfortunately, not much can be done about the disease, since no chemicals are cleared for use on such a minor crop.

**Harvesting** -- The portion of the plant used is the leaves. The leaves are picked when the plants become well-established (about 4 inches high). The stem and roots are left intact so that the leaves may be picked again as they grow. The entire plant may be harvested at once as an alternative.

**Use** -- Upland cress is eaten as cooked greens in some areas, while in others it is used raw in salads or as a garnish.

(Stephens)
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