CITRUS PROJECT RECORD II
FOR SECOND YEAR PROJECT
YEAR

Name: ____________________________________________

Mailing address: __________________________________

Age: __________________________________ Year in 4-H work: ____________

Name of local club: __________________________________

Local leader: ______________________________________

County Agent: _____________________________________

Florida Cooperative Extension Service
Institute of Food and Agricultural Sciences
University of Florida, Gainesville
John T. Woeste, Dean for Extension
A. Preparation of Liners -
After one year's growth your citrus seedlings should be about ¼ inch in diameter. At this time the seedlings should be transferred to 5 gallon cans. (5 gallon cans can be obtained from pesticide dealers, nurseries, oil companies, bakeries, etc.) They should be cleaned with a strong detergent solution and rinsed well before being used. Punch several drain holes in the bottom of the cans and fill them with a mixture of 2/3 soil and 1/3 peat.

When removing seedlings, dig them with a spade, do not pull them out. Select only the best looking seedlings, discard the "runts and bulls" (undersized and oversized seedlings). Prune off the top of the seedlings 6 inches above the ground and the root system 6 inches below the ground. Spread the root system evenly in the can and plant the seedling (liner) at the same depth it was in the seed flat. Water the plants well after planting to remove air pockets and settle the soil around the roots.

The seedlings should get 1-2 inches of water twice a week either by rainfall or irrigation for the first 2 weeks. Water as needed (about once a week) thereafter. Do not over water! Fertilize the liners every 4 weeks with ½ pound of 6-6-6 fertilizer. (Be sure to wait 3-4 weeks after planting before applying any fertilizer). The liners should be kept free of weeds and should be sprayed periodically for control of insects and diseases.

Label the liners giving the type of rootstock and date planted in the container.

B. Selection of variety -
Following is a list of the varieties most commonly used in Florida citrus today:

ORANGES

1. Navel - 'Navel' is an excellent variety for eating out of hand. It is large, seedless, and easy to peel. However, it is usually a shy bearer. Some types of navels are 'Summerfield', 'Surprise', 'Dream', and 'Barrington'.
2. Hamlin - 'Hamlin' is one of the most popular round oranges and a good orange for eating or juicing. The fruit is thin-skinned and almost seedless. The tree is a vigorous grower and good producer but the fruit tends to be slightly smaller than other round oranges.
3. Parson Brown - 'Parson Brown' is another good early orange. The fruit is large in size, however, and it is seedy and has a coarse texture.

Mid-Season Varieties

1. Pineapple - 'Pineapple' orange is a smooth-textured seedy fruit with good color. The tree is a heavy producer and a vigorous grower, but more susceptible to cold than most other round orange varieties.

Late Maturing Varieties

1. Valencia - 'Valencia' is a near seedless variety with excellent internal and external fruit qualities. The trees are rather slow growers but produce well. It is the most popular variety for concentrate because of its high solids (sugar), excellent juice color, and lack of seeds.

GRAPEFRUIT VARIETIES

1. Thompson (pink) - 'Thompson' is a seedless variety with good internal quality and pink colored flesh. It originated as a bud sport of 'Marsh'.
2. Marsh - 'Marsh' grapefruit is a white, seedless variety with fair internal quality. Currently it is our most popular commercial variety.
3. Duncan - 'Duncan' grapefruit is a white, seedy variety and is often used for sectioning and salads. It is generally considered to be the best flavored of all commercial grapefruit varieties.
MANDARIN VARIETIES

1. Dancy tangerine - 'Dancy' tangerine is a mid-season tangerine with fair quality. The trees are vigorous growers but are often alternate bearing. The fruit does not hold well on the tree once they reach maturity.

2. Temple - 'Temple' is a seedy variety. The fruit is large in size, with excellent quality and deep, red color. 'Temple' is scab susceptible and rather tender to cold.

3. Murcott - 'Murcott' matures in January or February. It has high solids and good color. It is often a shy producer, however.

Selection of the variety should be on the basis of the situation. For example, 'Hamlin's' would be a good early variety of orange in a commercial grove, but 'Navels' might be the better dooryard variety because of its quality and size. Select at least two varieties and bud them on each of the rootstocks.

NOTE: A more complete list of varieties can be found in Extension Bulletin 166C.

C. Budding the Citrus Tree -
There are two methods of securing budwood.

One is to purchase it from a citrus grower, nursery, or Budwood Registration Office in Winter Haven, Florida. The other method is to cut it yourself from the tree. In either case, budwood should be taken from a source that is registered free of as many virus diseases as possible by the Division of Plant Industry.

If you cut the budwood, it should be taken from a productive, healthy tree. Budwood should NEVER be taken from young, immature trees. Bud sticks should be cut with 8 or more buds per stick, taken from the 1st and 2nd growth flush prior to the present flush. Budwood is best cut during the dormant season, when it is most abundant. Remove the leaves when the stick is cut from the tree and tie the bud sticks into bundles and label each variety separately. Also, it is good practice to include the parent tree and the date the wood was cut, unless it is being used immediately. All budded trees should be tagged by the tree or row, giving stock, variety, date, and registration number.

CUTTING BUDWOOD

When the liners reach 3/8 to 3/4 inches in diameter, they can be budded successfully when the bark will “slip” (separate readily from the wood). When budding, use only a sharp budding knife. Before budding, remove the lower branches of the liner.

The most common type of budding of citrus practiced in Florida is the “inverted T” bud. Make a vertical cut 1½ inches long in the bark of the liner, 3-5 inches above the ground. Now make a horizontal cut at the bottom of the vertical cut, turn the blade upward after the cut has been made so the bark is raised from the wood.

ILLUSTRATION OF BUD-CUT ON STOCK

1. To cut the bud, hold the knife parallel to the axis of the bud stick. Cut (don't split) a shield shaped piece of bark and wood 3/4 to 1 inch long with a flat, smooth lower surface. It takes practice to learn to cut a good bud. Keep trying until you can cut a bud that, when placed on a flat surface lies flat, with no rough places.

2. The bud is retained on the knife blade by the thumb. Be careful not to touch the lower surface with your hand since this may damage the plant tissue. If you drop the bud, don't pick it up, cut a new bud. Slip the bud under the bark beginning at the bottom of the “inverted T” and push upward until the entire length of the bud slips under the bark, as shown in the diagram.
ILLUSTRATION OF BUD INSERTION AND WRAPPING

3. The bud should be wrapped with 1/2 to 3/4 inch plastic tape. The wrap is started below the bud so it can be drawn tight over the bar of the bud and is wrapped tightly around the trunk of the tree to above the vertical cut. Pull the strip back under the last turn to secure the wrap. The wrap holds the bud in place and reduces moisture loss. Don’t forget to label the tree, telling the variety, rootstock and date budded.

4. Two to three weeks after budding, the wrap should be removed. If the bud is green and callus formation has begun, the bud should “take”.

5. When the new bud (shoot) growth reaches 2-4 inches, the top of the rootstock should be cut off or lopped evenly above the bud. Place a stake by the bud for protection and support. When the shoot reaches 6 inches in height, tie it to the stake for support. Tie it again every 6 inches. When the new shoot reaches 20 to 36 inches, it should be topped to stimulate lateral growth and form the scaffold limbs.

SUGGESTED DEMONSTRATIONS AND DISPLAY IDEAS

FOR YOUR CITRUS PROJECT II

1. Growing the plants in containers (pointers)
2. Transplanting and lining out seedlings
3. Sharpening tools
4. Budding and grafting
5. Insect identification
6. Disease identification
7. Use of sprays, duster
8. Selection and cutting of budwood
9. Preparing a grove map
10. Variety identification of stock and scion fruit and/or leaves
CITRUS PROJECT II
WRITTEN EXERCISE

A. Make a list of the 15 different chemical elements needed for the healthy growth of citrus. Beside each element give its chemical symbol. (This information can be found in Bulletin 536B.)

B. The first 3 figures (such as 6-4-8) refer to what elements on a fertilizer tag?
C. Find a definition of pH.

1. What does pH mean?

2. What is its significance in growing citrus?

3. What is the best pH range for citrus?

D. Application of lime does what to soil pH? (raise or lower)
E. Take a soil sample for a citrus tree (or grove) in your grove or yard (or a neighbor's) and have it analyzed by your County Agricultural Agent. After you receive the analysis, make a fertilizer recommendation for a year for 10 acres of grove represented by your sample. (Refer to Extension Circular 239A - Soil Testing.)
RECORDS - CITRUS PROJECT II

A. List the scion varieties you have selected and why.

B. Record the following information for each variety budded.

1. Source of budwood | Variety I | Variety II | Variety III
2. Date of budding     |          |           |
3. Date unwrapped      |          |           |
4. Number budded       |          |           |
5. Number live buds    |          |           |

C. Keep a complete and accurate fertilizer record.

<table>
<thead>
<tr>
<th>DATE</th>
<th>AMOUNT OF MATERIAL USED</th>
<th>FERTILIZER ANALYSIS</th>
<th>COST</th>
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D. Keep a complete record of pest controls applied.

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<th>DATE</th>
<th>PEST CONTROLLED</th>
<th>MATERIAL USED</th>
<th>AMOUNT SPRAYED</th>
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E. Keep a complete record of labor costs:

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<th>LABOR PERFORMED (WEEDING, WATERING, ETC.)</th>
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F. Summary of costs:

Cost of liners

Cost of containers

Cost of fertilizer

Cost of spray

Cost of labor

Cost of budding supplies

Miscellaneous costs

Total costs

Number budded trees produced

Cost per tree

ACTIVITY RECORD
CITRUS PROJECT II

Keep a list of all talks, demonstrations, exhibits that you make that are associated with your citrus project.

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Story of My Citrus Project II - (Include pictures where possible.) (Use additional sheets if needed.)