

**Chestnuts:** Blight resistant chestnuts continue to bear annual crops and appear to be well adapted but the fruit is of low quality.

**Persimmons:** Since Japanese persimmons are an edible fruit that matures when fresh fruit in the home orchard is scarce, it should be included in all plantings in the lower Coastal Plain.

**Other Fruits:** Fruits that are still surviving but that show poor adaptability are cherries, walnuts, and quince.

Fruits that have failed to survive are apricots, hazlenuts, prunes, and raspberries.

## REPORT OF FIELD STATION IN McINTOSH COUNTY UPLAND SOILS

In order to exercise definite control over experimental projects on upland soils, a tract of land has been leased and will be used for such studies as:

(1) the effect of winter and summer covers on yield of truck crops, (2) the effect of crop rotation on insect and disease control, (3) the effect of rates of applying fertilizer on yield, (4) the effect of commercial fertilizer and barnyard manure on yield, (5) lime requirements for truck crops, and (6) the effect of irrigation on yield.

Practically all of the leading truck crops are included in the plantings on the upland soils, but with the exception of sweet potatoes, all yields were below levels necessary for successful commercial crop production. With this in mind, definite studies are underway to determine the most economical method of increasing productivity to profitable commercial levels.

### DELTA SOILS

Work on the delta soils has been in progress over a longer period of years and includes studies with a wide range of truck and vegetable crops. Among those that grow well under tide water conditions are: beans, beets, broccoli, cabbage, carrots, cauliflower, cucumbers, English peas, lettuce, mustard, okra, onions, spinach, squash, tomatoes, and turnips.

#### Lettuce

Lettuce has shown the widest degree of commercial adaptability and is now produced commercially on the delta soils of that area.

**Varieties:** At the present time Imperial strains of Iceberg lettuce No. 847 and No. 44 are showing to best advantage, No. 847 apparently being best suited for early plantings while No. 44 seems more tolerant to heat and therefore is considered best for the late harvest.

**Planting Dates:** With normal seasonal conditions, lettuce seeded in the field between November 15 and December 1 will mature heads and be ready to harvest during the intervening mild period occurring between the excessive cold of late winter and the damaging drought and heat which usually occur in April.

**Fertilizer:** A study of the fertilizer requirements of lettuce shows that under the conditions of this test and when preceded by a leguminous cover crop, 1200 to 1500 pounds per acre of a formula containing 2 per cent nitrogen, 10 per cent phosphoric acid, and 6 per cent potash will satisfy the plant food requirements of this crop. The usual custom in applying fertilizer is to broadcast about 1200 pounds before planting and add the remaining amount as a side dressing after the thinning operation.

In order to force early spring growth it usually is necessary to side dress either with 200 pounds of nitrate of soda or some similar nitrogen carrier, or 200 to 250 pounds of 10-0-10 (NPK).

### **Varieties of winter vegetables adapted to the coastal area of Georgia:**

- Beets—Crosby's Egyptian
- Broccoli—Green Sprouting
- Cabbage—Copenhagen and Charleston Wakefield
- Carrots—Imperator and Chantenay
- Collards—Georgia
- Cauliflower—Early Snowball
- English Peas—Improved Telephone and Thomas Laxton
- Kale—Early Green Curled
- Lettuce—Imperial No. 847 and No. 44
- Mustard—Tendergreen
- Onions—Bermuda, Prizetaker, and Australian Brown
- Radish—Early Scarlet Globe
- Rape—Dwarf Essex
- Rutabaga—Improved American
- Spinach—Virginia Blight Resistant and Norfolk Savoy
- Turnips—Purple Top and Shogoin

### **Varieties of summer vegetables adapted to the coastal area of Georgia:**

- Beans (lima)—Henderson Bush
- Beans (pole)—Kentucky Wonder, rust resistant
- Beans (bush)—Giant Stringless Green Pod and Tendergreen
- Corn (roasting ear)—Golden Cross Bantam and Trucker's Favorite
- Cantaloupes—Mildew Resistant No. 45, Improved Perfecto, and Honey Rock
- Cucumbers—A. & C. Special and Stay Green
- Eggplant—Florida Highbush
- Okra—Clemson Spineless and White Velvet
- Peas—Conch and Crowders
- Pepper—California Wonder and World Beater
- Potatoes (Irish)—Red Bliss and Cobbler
- Spinach—New Zealand

Squash—Yellow Crook Neck and Yellow Straight Neck

Sweet Potatoes—Porto Rico (copper colored)

Tomatoes—Marglobe and Pritchard



## NEMATOTOLOGY

Work on Nematology at this Station is in cooperation with the Division of Nematology, Bureau of Plant Industry, United States Department of Agriculture.

### CHEMICAL CONTROL OF ROOT KNOT

The root knot nematode, *Heterodera marioni* (Cornu) Goodey, can be controlled by fumigation of the soil with chloropicrin, carbon bisulphide, ethylene dichloride or methyl bromide. Advantages and limitations of these chemicals as indicated by experiments at this Station during the past several years are discussed below. Further information will be furnished on request.

None of the chemicals can be applied to soil containing living plants. Best results have been obtained when the soil contained no undecayed roots.

Chloropicrin is applied by injecting measured quantities a few inches under the soil surface at intervals of 10 to 14 inches over the area where the nematode is to be controlled. In our sandy loam soil, good results are usually obtained when one to three cubic centimeters of the chemical are used at each application point. This requires 200 to 400 pounds per acre. To prevent damage to seed or transplants, the application should be made at least 5 days before the crop is planted. Soil moisture content should be in the vicinity of 6% to 8%, that is, the soil should be just moist enough to hold its shape when molded in the hand. This is important, as total failure may result if the soil is either too dry or too wet. Any soil temperature between 60° and 90° F. seems to be satisfactory for the effectiveness of chloropicrin. Immediately after fumigation, some sort of cover must be placed over the soil to prevent too rapid escape of the fumes. Glue coated paper or gas impervious cloth may be used, but excellent results can be obtained by the use of a water seal. This is formed by sprinkling the soil surface with enough water to wet the top inch or two.

Cost of chloropicrin in large quantities is about 80 cents per pound or \$160 to \$320 per acre. Cost of application adds \$20 to \$40 to this. If the work is carefully done, the grower can expect that the first crop after fumigation will be more than 90% free of root knot. Some control of soil fungi and bacteria can also be expected.

With crops planted in widely spaced rows or hills, considerable savings may be made by fumigating only the portions of the field which will be occupied by the roots of the plants. Root knot nematodes move through the soil very slowly, so a plant in a comparatively small area of treated soil will escape infection in the early stages of growth and will often not be seriously damaged thereafter. In an experiment with watermelons, applications of two or three cubic centimeters of chloropicrin were made directly under each hill location one week before the seed was planted. An area of one square yard around this spot was sprinkled with water to form a water seal. Thirty-eight days after planting, less than one per cent of the treated hills had been attacked by nematodes, while the untreated hills were 96% infested. At harvest, 109 days after planting, less than three per cent of the treated hills were lightly infested, while nearly all of the untreated hills were heavily infested.

