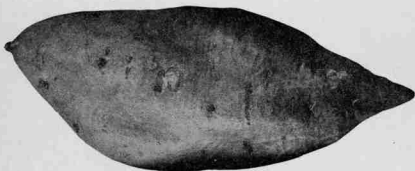


Approved Practices  
For  
Sweet Potato Growers



THE AGRICULTURAL EXPERIMENT STATION  
OF THE  
NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING  
AND  
NORTH CAROLINA DEPARTMENT OF AGRICULTURE, CO-OPERATING  
R. Y. WINTERS, *Director*  
STATE COLLEGE STATION  
RALEIGH

## SWEET POTATO PRODUCTION RECORD

193\_\_ County\_\_\_\_\_

Name\_\_\_\_\_

Address\_\_\_\_\_

GENERAL

1. Number of acres planted\_\_\_\_\_.
2. What variety or varieties do you plant?\_\_\_\_\_.
3. What crop was grown on the land last year?\_\_\_\_\_.
4. How much fertilizer was applied last year?\_\_\_\_\_.
- What formulae? N\_\_\_\_\_ P\_\_\_\_\_ K\_\_\_\_\_.
5. When, and what was last cover crop turned under on this land\_\_\_\_\_.

PLANTS

6. Did you grow your own plants?\_\_\_\_\_.
7. Did you grow your seed from vine cuttings?\_\_\_\_\_.
8. Did you treat your seed?\_\_\_\_\_. With what?\_\_\_\_\_.
9. If you bought seed, from whom?\_\_\_\_\_.
10. How many bushels did you buy?\_\_\_\_\_.
11. Did you use any compost in your plant bed?\_\_\_\_\_.
12. How much, and where was it placed?\_\_\_\_\_.
- \_\_\_\_\_.
13. Do you plant vine cuttings for seed potatoes?\_\_\_\_\_.

FERTILIZER

14. How much fertilizer did you put under your plants?\_\_\_\_\_.
15. Date fertilizer was applied\_\_\_\_\_. How was it applied?\_\_\_\_\_.
- \_\_\_\_\_.
16. Was it thoroughly mixed with the soil?\_\_\_\_\_.
17. What was the analysis? N\_\_\_\_\_ P\_\_\_\_\_ K\_\_\_\_\_.
18. Did you use any compost?\_\_\_\_\_. When was it put out?\_\_\_\_\_.
- Broadcast or in drill?\_\_\_\_\_.
19. How much side dressing and what kind did you use?\_\_\_\_\_.

N \_\_\_\_\_ P \_\_\_\_\_ K \_\_\_\_\_.

20. Date side dressing was applied? \_\_\_\_\_.

PLANTING

21. Date first planting was made \_\_\_\_\_, second \_\_\_\_\_,  
third \_\_\_\_\_, fourth \_\_\_\_\_.

22. Approximate number of plants set at first planting \_\_\_\_\_,  
second \_\_\_\_\_, third \_\_\_\_\_, fourth \_\_\_\_\_.

23. How wide are the rows? \_\_\_\_\_.

24. How far apart are the plants in the drill? \_\_\_\_\_.

25. How high is your planting ridge? \_\_\_\_\_.

26. What percent of a stand did you have on July 15? \_\_\_\_\_.

CULTURE

27. How many times did you cultivate? \_\_\_\_\_.

28. Date of last cultivation \_\_\_\_\_.

29. Date harvested \_\_\_\_\_.

30. Had frost killed the vines? \_\_\_\_\_.

31. Date vines were killed \_\_\_\_\_.

32. Yield \_\_\_\_\_ No. 1's \_\_\_\_\_ bu., No. 2's \_\_\_\_\_ bu., culls \_\_\_\_\_ bu.

Total yield \_\_\_\_\_ bu.

Give general statements as to weather conditions and other things  
which might have affected your yield. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

COST OF PRODUCTION

1. What would you consider a fair rental value for your potato field? \_\_\_\_\_ \$ \_\_\_\_\_
  2. Cost of preparing land (mule and man labor) \_\_\_\_\_ \$ \_\_\_\_\_
  3. Total cost of plants used \_\_\_\_\_ \$ \_\_\_\_\_
  4. Cost of fertilizer \_\_\_\_\_ \$ \_\_\_\_\_
  5. Cost of setting plants \_\_\_\_\_ \$ \_\_\_\_\_
  6. Cost of side dressing \_\_\_\_\_ \$ \_\_\_\_\_
  7. Cost of applying fertilizer \_\_\_\_\_ \$ \_\_\_\_\_
  8. Cost of applying side dressing \_\_\_\_\_ \$ \_\_\_\_\_
  9. Cost of cultivation (man and mule) \_\_\_\_\_ \$ \_\_\_\_\_
  10. Cost of harvesting \_\_\_\_\_ \$ \_\_\_\_\_
  11. Any other costs - itemize \_\_\_\_\_ \$ \_\_\_\_\_
- \_\_\_\_\_ \$ \_\_\_\_\_
- \_\_\_\_\_ \$ \_\_\_\_\_
- \_\_\_\_\_ \$ \_\_\_\_\_
- TOTAL COST \_\_\_\_\_ \$ \_\_\_\_\_

# APPROVED PRACTICES FOR SWEET POTATO GROWERS\*

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It is a consensus of opinion that the quality of sweet potatoes grown in this State is not what it should be. This is due to several major reasons:

1. The crop is sometimes grown on soil types that are not adapted to its best production.
2. The fertilizers used, especially by home growers, sometimes contain excessive nitrates and an insufficient amount of potash.
3. The varieties and strains used are not the best for all conditions.
4. The diseases cause such heavy losses that they not only affect the yields and profits, but lower the quality to a very great extent.

The results of experimental research are not conclusive enough at this time for definite statements or recommendations concerning the control of all factors of sweet potato growing, but sufficient data are available on the above points to warrant the presentation of a brief and condensed statement of the facts that will help to improve this industry. It is also the aim of this publication to briefly outline and treat approved practices for growing the crop. The subjects are arranged under eleven headings, for quick reference. The statements are brief and to the point, but details may be had by correspondence with the Director of the North Carolina Experiment Station.

## 1. Varieties:

- (a) Porto Rico, Nancy Hall and Jersey varieties are now the most popular commercial sorts.
- (b) The Triumph, Southern Queen and Yellow Yam varieties are resistant to stem rot or wilt but not to the nematode disease, and yield well.
- (c) The Nancy Hall variety is very susceptible to nematode injury. The Porto Rico and Jersey varieties and strains are resistant.
- (d) A strain of Porto Rico developed at this station has proved superior to common strains. It is much more desirable than the red skin strains.

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\*Alphabetical listing of authors.

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Z. P. Metcalf, Division of Entomology.

E. F. Poole, Division of Botany.

Robert Schmidt, Division of Horticulture.

The first edition of this publication was well received. With a new edition the authors give new information and enlarge upon that given in the first publication.

- (e) Varieties and strains are sometimes obtained as a result of bud and root sports, and it is possible that new and better strains than are now grown may be found.
- (f) The Nancy Hall is more resistant to the internal break down disease than the Porto Rico variety and related strains.

**2. Seed Stock:**

- (a) A uniform strain of disease-free seed should be obtained from a reliable source.
- (b) To maintain a good seed stock select seed at digging time from areas where diseases are not present.
- (c) A new seed stock should be purchased if the home seed becomes diseased.
- (d) Seed potatoes produced from vine cuttings if grown on healthy soils will be free of such diseases as black rot, scurf and stem rot.
- (e) Medium sized potatoes are recommended for bedding.

**3. Plants:**

- (a) Every grower should produce his own plants.
- (b) Best field stands are obtained by using freshly drawn plants.
- (c) Disease-free plants are difficult to obtain, and are best propagated at home.
- (d) Best yields are obtained by using strong, well developed plants.
- (e) Early vine cuttings are satisfactory for plants, but early draws or slips are preferred to late vine cuttings.
- (f) Excessive removal of vines from plants in the field will reduce the yields.

**4. Plant Bed:**

- (a) Use hotbeds for forcing early plants.
- (b) Coldframes are satisfactory where forcing is not necessary.
- (c) Where climatic conditions allow, the plants may be propagated in an open plant bed.
- (d) Potatoes should always be bedded in sand or light sandy soil obtained from areas where sweet potatoes have never been grown.
- (e) If stable manure is used for furnishing heat it should be placed three inches below the potatoes—never above.
- (f) In bedding the seed space the potatoes about three-fourths inch apart.
- (g) The seed potato should be covered three inches deep in order to get ample root development.
- (h) The plant bed should be kept moist but not waterlogged.

**5. Seed Treatment:**

- (a) Seed potatoes should be treated to destroy any surface borne disease producing organisms that might be present on the potato.

- (b) Use mercuric chloride 1-1000 (1oz. to 8 gallons water) for fifteen minutes and bed after drying without washing.
- (c) The solution should be warm or 100° F. for the most effective control of organisms carried on the seed potato.
- (d) Seed already diseased can not be cured by seed treatment.

**6. Plant Treatment:**

- (a) Where soils are infected with stem rot or wilt organism, dip the stem and roots in a 20-20-50 Bordeaux mixture or dust with a mixture composed of 25 per cent monohydrated copper sulfate and 75 percent lime just before planting.
- (b) Treat scurf infected roots and stems with ground sulphur immediately before transplanting. Thorough coating is essential.
- (c) Treated plants must be transplanted in moist but not water logged soil.

**7. Soil Types:**

- (a) Potatoes should be grown on sands or sandy loams, because these soils produce potatoes of the finest quality.
- (b) Heavy soils, dark soils and rich garden soils produce potatoes of poor market quality.
- (c) Potatoes grown on sandy soils are less affected by diseases in storage, especially surface rot.

**8. Fertilizers:**

- (a) Commercial fertilizers are necessary for the economic production of sweet potatoes.
- (b) Stable manure should not be used as a sweet potato fertilizer in the ridge.
- (c) Where potatoes are grown for early market on sandy soils a mixture of 3 per cent nitrogen, 8 percent phosphoric acid and 8 per cent potash applied at the rate of 1000 to 1200 pounds per acre is recommended.
- (d) For the sandy loam soils of the Coastal Plain where such varieties as the Porto Rico and Nancy Hall are grown for late harvest an 3-8-8 mixture applied at the rate of 600 to 800 pounds per acre is recommended.
- (e) For sandy loam soils of the Piedmont and Mountain areas a 3-8-6 mixture applied at the rate of 600 to 800 pounds per acre is recommended.
- (f) Sources of nitrogen should be  $\frac{2}{3}$  inorganic nitrogen and  $\frac{1}{3}$  organic nitrogen.
- (g) The average home grower does not use sufficient potash in fertilizing sweet potatoes.

- (e) Proper temperature and moisture conditions are essential factors in the keeping of sweet potatoes. The temperature for curing should be 80° to 85° F. When the sprouts begin to appear, the potatoes are cured. This usually requires about two weeks. After curing the storage temperature should be maintained at 50° F. The temperature should never be allowed to go below 40° F. High temperatures during the storage period cause shrinkage. Ventilation is necessary to remove excessive moisture.
- (f) If soft rot becomes severe at any time during the storage period, heat the house until potatoes and moisture are well dried out. The diseased potatoes will dry up and should not be removed.
- (g) Tobacco barns may be used for storage of sweet potatoes. Make them tight.
- (h) Bank storage is suitable for home usage. Heavy losses can be prevented by leaving opening for ventilation and covering to keep dry.
- (i) Diseases in banks may be prevented to a large extent by coating the potatoes heavily with hydrated lime dust immediately after harvest.
- (j) Potatoes from black rot infected soils should not be stored.
- (k) All diseased potatoes should be destroyed at harvest time and not placed in storage.
- (l) The potatoes should be stored immediately after harvest.
- (m) Storage in crates preferable. Leave air space between floor and potatoes.
- (n) The fungi that cause rots in the storage house are brought from the field and live over in rotten potatoes. Keep houses clean.
- (o) To reduce losses in transit remove diseased potatoes from packing rooms before the white mold appears.

## 12. Insects:

- (a) Flea beetles can be controlled by dipping tops of plants in weak Bordeaux mixture poisoned with  $\frac{1}{4}$ -pound powdered arsenic of lead in 10 gallons of Bordeaux mixture.
- (b) Wire worms are avoided by planting on well drained light sandy soils. Do not plant after grass or on poorly drained soils.
- (c) Gold bugs are controlled by spraying with  $\frac{1}{4}$ -pound powdered arsenic of lead in 10 gallons water. Use same amount of lime as arsenic of lead.
- (d) The Sweetpotato leaf beetle is found in Currituck and adjacent areas along the coast. This insect can be controlled by rotenone dust (0.75 rotenone-talc mixture) as used for Mexican bean beetle control.