

Project Planning, Design and Planting

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In order to develop an economic viable enterprise producing Black Walnuts one needs to consider basic criteria that will effect the overall success or failure of the enterprise. We should consider a relatively long period of time i.e. 35 to 50 years or longer. This can be quiet a challenge in an era where as producers we much constantly be market responsive and subject to change.

In planning an orchard that hopefully will encompass efficient, quality production we should first look at four basic points and build an outline from these points with as much input form everyone as possible.

- Point I - Produce the crop, harvest it, process it
- Point II - Market It
- Point III - Deliver it
- Point IV - Collect your money

I. PRODUCING THE CROP

- A. Orchard site selection
 - 1. Identify soil
 - 2. Soil amendments
 - a. Should be based on soil tests showing the nutrient status.
 - b. Necessary amendments should be made prior to tree planting.
- B. Variety selection
 - 1. Genetic improvement
 - a. A decision should be made where primary emphasis is to be focused, nut production only or a combination of nut and timber. It is my personal belief that in theory it sounds possible to do both, but management practices dictating maximum yields, efficient harvesting, (both dependant on proper spacing,) crown development, and branching structure for shaking, make this impractical. This is not to say that the exceptional individual who is willing to accept the challenge cannot do both but this will be the exception and not the rule.
 - 2. What does the market want
 - 3. Regional adaptability
 - 4. Precocious selections
 - 5. Planting stock
 - a. Understock should be selected and grown from known parentage proven to be superior in root development and growing vigor. A one year stock will respond best and should be about 3/8 inch – 1/2 inch in caliper. Younger understock has definite advantages provided

desired size can be attained, whether being planted bare-foot or containerized. Planting of containerized understocks or grafted varieties in containers can be done either in the spring or fall. Fall has several advantages over spring. Soil and weather conditions nearly always allow favorable planting conditions. Roots will grow at soil temperatures at 50 degrees or above so establishment will begin immediately allowing the tree to be in a better condition to withstand usual spring competition and summer drought. Ideal fall planting time for containerized walnuts in Missouri would be from October 20th to Thanksgiving. (Soil temperatures will remain above 50 degrees into Dec.) Fall planting alone can result in a one year gain in establishment and growth.

Bare-root walnuts are planted spring only to avoid winter desiccation and heaving problems from alternate freezing and thawing. Very early spring planting will give best results, however spring conditions often delay plantings so severe weed competition, and moisture competition often occur at a critical time period when the plants are trying to become established.

C. Orchard design

1. Nut production only or timber combination: (Is this feasible)

- a. The primary goal should be production of high volumes of high-quality nuts, in both yield and color. The market will pay a higher price and the bottom line will improve. Net return per acre is of primary importance.

Optimum crown development:

- (1) Spacing to accommodate crop production will vary to some extent by the cultivar, pruning methods, thinning and other management factors. Optimum bearing potential is realized when the space over the soil is completely occupied by nut-bearing tree canopies with sufficient light penetration to maintain lower fruiting wood. A practical median spacing based on the above criteria would be 30 x 30 requiring forty-eight trees per acre.

Walnut breeding and generic improvement will likely develop dwarf cultivars that should be planted at closer spacings or possibly in hedge rows. Here are some sample spacings showing number of trees required per acre.

20 x 20.....	109
20 x 24.....	90
22 x 22	90
24 x 24.....	75
25 x 25.....	69
30 x 30.....	48
40 x 40	27
50 x 50	18

- (2) Facilitate efficient harvesting and handling of crop.

2. Pollenizer Trees
 - a. Use of pollenizer varieties may be desirable in many walnut orchards. It is essential to place these trees correctly for maximum benefit. Since walnuts are wind pollinated the pollenizer trees should be planted in solid rows perpendicular to the direction of prevailing winds at regular intervals. They should be planted in solid rows so they can be harvested separately.
- D. Husbandry
 1. Pruning - Do you desire a single straight log or a broad crown that will produce more nuts?
 2. Early life of orchard requires checking each tree several times each growing season for all essentials to provide maximum health of trees.
 3. Always be aware of the Five essentials for plant growth: Light, Temperature, Water, Air, Nutrients:
 4. Competition
 - a. Weed control
 - b. Spacing
 5. Disease and Pest Control
 (What is pre-harvest cost per acre to establish? \$1,000 - \$1500.00/per acre using cultivars.)
 (Goal should be to produce 1,000#/per acre as quickly as possible to approach profitability with an ultimate goal to produce twice this amount per acre in 5-7 years.)

II. MARKETING

- A. Specialty markets and outlets
 1. Must yield prices that will support and provide return on orchard investments:
- B. Keep cultivar selection in line with market demands:
 1. Market changes may require top working to new and better cultivars.
- C. Continually be aware of market changes, wants, and needs:
- D. Collectively or individually we need to target specific markets then make personal contacts, promote through advertising and make use of new technologies as the internet to market our product:
- E. Good packaging and point of sale merchandising.

III. DELIVER

- A. Gain a reputation as a consistent dependable supplier of quality product:
 1. This may necessitate storage and other ways to have the product available on a year round basis:
 - a. Seed with a moisture content of 20 to 40 percent can be stored at 34/ – 37/ F for one year.
- B. Certainly in season customers may be encouraged to come to you direct:
 1. Farmers markets may be viable outlets in certain instances.

IV. COLLECT YOUR MONEY

- A. No sale is complete until you are paid:
 - 1. If shipping on credit have firm understanding of terms of sale:
 - 2. By producing a quality product, with innovative marketing and techniques, and on time delivery, collecting your money is made much easier.