

## Establishing and Maintaining a Seed Orchard

### Rob Lovelace

Lovelace Seeds, Inc , Elsberry, Missouri 63343

Our company supplies tree and shrub seed for the nursery trade to produce seedlings for ornamental uses, reforestation conservation uses, mine reclamation, and understocks. Most recently we have begun to produce and collect seed for use in wetland programs.

From our beginning in 1973 we have tried to respond to the needs and requests of our customers. Our customers told us in the beginning that their primary concern was a reliable, consistent seed source. We realized the only way to address this challenge was to establish our own seed orchards. Today, 60% of seed we sell is produced from our orchards and more production is coming on line each year. Certain species such as the oaks take many years to reach bearing age. Therefore establishing seed orchards is a long-term project requiring considerable up-front investment.

### REASONS FOR PRODUCING SEED IN ORCHARDS

- 1) To have a consistent seed source from known parentage.
- 2) To insure a quality product that is grown, collected, processed, and handled properly.
- 3) To have the seed crop where it can be closely monitored so collection timing is correct and chances of losing the crop to birds, deer, rodents, and unusual climatic conditions are minimal.
- 4) To facilitate harvesting.
- 5) To manage for maximum production by applying latest techniques in weed control, fertilization, watering, and pruning.
- 6) To facilitate our program of seed improvement through selection, breeding, and culling.

### POINTS TO CONSIDER WHEN PLANNING A SEED ORCHARD

**Site Selection.** Probably the single most important consideration. Many species we grow tend to flower very early in the spring, making them highly susceptible to spring frosts, hence a high site affording good air drainage should be used. We also prefer a south-easterly exposure in our area to give protection from the harsh winters and summer heat and wind exposure common to our midwestern climate.

**Soil.** A deep well-drained native soil much the same as commercial fruit growers like.

**Natural or Established Barriers.** Since many species grown are wind pollinated, barriers are necessary to prevent unwanted cross-pollination. Where rolling terrain is available this can be solved by planting on opposite sides of ridges or by keeping a natural stand of timber between plantings. Natural timber stand can also prove valuable as wind breaks for both winter and summer protection.

**Orchard Plant Spacing.** Most of our production is in hedge row plantings with row spacing of 12 to 20 ft and 5 ft spacing used within the row. The spacing varies with the size and training techniques of the various species.

**Basic Sod Crop.** We establish a sod crop a minimum of 2 years prior to establishing an orchard on a given site. We prefer bluegrass in our area because of ease of maintenance and less competition during stress periods.

Strips are sprayed at the proper row spacing with Round-up herbicide to establish planting rows in the sod crop. Spraying is done immediately prior to planting. After plants are established the planting strip is maintained weed free by using Round-up in combination with select pre-emergence herbicides. Since a wide range of species are involved, the specific pre-emergence herbicides need to be individually researched.

**Selection of Planting Stock.** Since seed production is of such major importance, great care should be exercised in the selection of planting stock. Where at all possible, selection should be based on known parentage, improved selection, and breeding improvement. A literature and history search can be the best investment one can make. Botanical gardens, arboretums, plant material centers, and knowledgeable individuals are all invaluable sources of information.

**KRIS BACHTELL:** Why the southeast facing direction?

**ROB LOVELACE:** To get the warmth of the sun in the spring of the year.

**KRIS BACHTELL:** Just a comment on the use of clones as seed parents. Seed from them will not be the true clone and will show variability.

**JOHN PADUA:** With *Cornus alternifolia*, have you had any problems with canker. We have a real problem in Vermont.

**ROB LOVELACE:** I have never seen it on any of our plants.