

Essential Field Equipment

for Small-Medium Scale Elderberry Farmers

Particularly for Whom Soil Health and Nutrient Density is a High Priority

There are essentially 3 cultural methods to establishing elderberry orchards:

- (1) Planting through flat or raised beds of plastic with drip irrigation;*
- (2) Planting through a thick layer of a cover crop mix that is previously killed;*
- (3) Planting into the open field as traditionally done with most horticultural crops.*

Because USDA certified organic methods do not allow the use of plastic as described in method #1, and to make raised beds requires heavy equipment that would require considerably higher capital investment, we have chosen to address the needs of the last two, though some of this listed equipment would also be very useful to growers who do chose the first method. The first method is one that is focused primarily on resolving the weed control issues, which we effectively address with methods #2 and #3. All equipment is to be sized to be compatible with a 35-40 HP tractor and to attach with a 3 point, category I, hitch.

1. Imants Spading Machine. Model _____ \$_____

Purpose and use: Primary and secondary tillage in one pass, to “double dig” and aerate the soil, to incorporate green manure crops and organic matter, to increase water infiltration and retention, to prepare field with the most biologically-friendly method of soil disturbance for planting in “open” field (where no-till is not used). This pricey machine could initially be omitted because most growers will already have some means of tillage. The use of this spader would only speed up the healing and building of soil health process.

2. Cover-Crop Drill (Seeder), ground driven. Model _____ \$ _____

(e.g., Value-Drill: www.kascomfg.com, LandPride: www.landpride.com)

Purpose and use: In nature, the ground is always covered with vegetation. Even if we plow, disk, or till it bare, within days zillions of seedlings start covering the soil, protecting it from erosion, and feeding the invisible microflora below the surface. Ecologically minded growers attuned to nature have imitated it by seeking to keep their fields covered with vegetation at all times. A drill allows for close seeding of cover crop seed mixes that rapidly cover the soil. Growers need one that can cover a solid field, or that can be used to establish cover crops between rows once established. In the latter case, the unit needs to be able to “drill” very closely to the established rows.

3. Cover-Crop Roller-Crimper, ground driven. Model _____, \$_____

Purpose and use: To enable growers to use cover crops and leave them in place (no-till culture), but kill the cover crop before planting with elderberries without the use of toxic herbicides. This method improves soil health by raising organic matter, providing a very favorable environment for rapid earth worm and soil life multiplication, prevent wind and water erosion, substantially increase water holding capacity, maintain a cooler soil temperature on hot summer days and assure a longer warm soil temperature in the fall to extend the root growing season and thus maximize elderberry growth and yield.

4. Water Wheel Planter, single row, w/ wheels. Model _____ . \$ _____

Purpose & Use: This machine, with the proper planting spikes, is able to plant directly into bare ground, through plastic, or through a thick layer of mulch (killed cover crop), while also supplying water and/or nutrients to each plant. Spacing is variable and easily changed. The equipment needs no power from the tractor. This makes MaxiPlug planting is a breeze. Could be used for planting cuttings, but definitely NOT for use with bare rootstock. For farmers diversified into vegetable production, it is a favorite transplanting machine for vegetable plug starts.

5. Single-Row Hydra Weeder. Model _____, \$ _____

Purpose and use: Weed control is indisputably organic farmers' #1 cultural challenge and a major yearly cost. Having an extremely efficient and effective tool to control the weeds mechanically, especially during the first year, will affect the speed of growth and maximize yield. Because of their rapid growth, abundant suckering, and heavy foliage, if the first year does not retard growth because of weed competition, subsequent years of weed control are much less challenging. For farmers diversified into vegetable production, it is a favorite weed control machine for vegetable for practically any vegetable or berry grown in open ground, i.e., not through plastic.

6. Dual axle ag equipment trailer (to haul any combination of this equipment from member farm to farm.)

Purpose and use: To make this cultural farm equipment useful and practical for growers scattered through the Upper Midwest, it is essential that we also have a low-boy ag trailer that can be pulled by farmer's own (or rented) $\frac{3}{4}$ or 1 ton pickup truck and move it rapidly from farm to farm.