

Tree fruit orchard site preparation

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Immediate replanting of stone fruit on land that has just grown stone fruit may give poor results. Likewise apples or pears following apples or pears may be a problem, especially if the previous orchard was there for many years.

Take care of perennial weed problem.

Examples of troublesome perennial are:

grass weed: quackgrass

Herbaceous perennial broadleaf weeds -- Canada thistle, milkweed, hemp dogbane, bindweed, Canada goldenrod, white heath aster, and horsenettle.

Woody broadleaf perennials -- Virginia creeper, poison ivy, brambles, and mulberry tree seedlings.

Perennial sedges -- Yellow nutsedge and purple nutsedge

One common strategy to clean up perennial weeds is to use the site for Roundup Ready soybeans or corn for 1 or 2 years.

Discontinue use of soil residual herbicides

Use of soil residual type herbicides, especially the photosystem II inhibitor types such as Karmex, Princep, and Sinbar, should be discontinued several years before a new orchard will be planted.

Adjust soil pH, potassium levels

Soil test and apply lime, sulfur, and or potassium as needed. Testing sandy sites for boron levels is a good idea.

Address water drainage issues

Tiling may be recommended in sites with heavier soil to promote better water drainage. Planting trees on berms is another strategy for heavier soil sites.

Address low soil organic matter sites

A soil building program for a year or more may be very helpful before replanting on very sandy sites. Rye, Sudan grass, or other fibrous crops should be grown and plowed down to help increase organic matter for the new orchard.

Address nematode problems

In some orchards, where nematodes such as dagger or root lesion nematodes have built up to a significant level, it may be necessary to treat the soil with a fumigant before replanting, or use nematode suppressing ground cover strategies (see below). Sandy soils are more prone to nematode problems. Soil testing for nematodes is recommended.

Address compacted soils

Compacted soils should be ripped with a chisel plow or subsoiler to remove old roots and break-up hardpans created by travel and tillage in replant sites. This is best done during the driest part of the

year prior to replanting. Subsoil ripping with a chisel plow in several directions helps to break up layers

Use of Sudex for nematode control and increasing soil organic matter

Plant sudex in spring (30 lb/ac for biomass and nematode control, approximately 50 lb/ac for weed control. Mow sudex mid summer, plow & disc in fall and plant winter cover crop (wheat, annual rye). The following year harvest/cut winter cover crop in wheat, till, plant sudex in summer, disc in fall, plant annual ryegrass or wheat. The following spring rotovate and plant orchard.

Use of rapeseed for nematode control and increasing soil organic matter & reducing compacted soils

Prepare seedbed by late April / early May and plant rapeseed by mid-May. Use winter rapeseed, recommended variety is Dwarf Essex, 7-8 lb/acre, planting depth 3/8"

If only one crop, incorporate as green manure anytime in the fall but before soil drops below about 50 F. Chop/flail mow, then disc or rototill in promptly to get full nematicidal effects.

If rapeseed will be followed by a winter cover crop, incorporate the rapeseed by late August or early September to allow sufficient time for planting the cover crop well before cold weather. The winter cover crop can be incorporated in the spring after growth has resumed and soil temperature is above 45 F

Killed sod approach for weed suppression and erosion control

Broadcast/drill in grass seed desired for permanent orchard in spring of year before tree planting. Use glyphosate to kill sod in the strips for tree rows in September or October. Do not till. Plant the trees "no-till" into dead sod. Depending on thickness of killed sod, a tree planter may have a hard time making a trench. An auger may be needed instead.

The killed sod approach increases soil organic matter, reduces soil erosion, suppresses weed growth. Vole activity may increase especially if tree planter is used.

Add straw or wood chip mulch for organic matter, weed suppression, and encourage moisture retention.

Add ½ bale of straw per tree at time of planting. Use clean straw to avoid bringing in perennial weed problems. Or wood chips spread under tree can help to suppress weeds and increase moisture retention. The wood chips should be seasoned at least one year. Additional nitrogen may be needed to supplant nitrogen taken up by micro-organisms that are stimulated by the wood chip mulch.