

TOOLEY'S TREES & KEYLINE DESIGN
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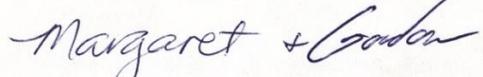
Tooley's Trees is a retail and wholesale nursery in Truchas, NM, on the highroad between Santa Fe and Taos, at 7,960'. Focusing on varieties that are drought tolerant and adapted to high pH, we grow species trees, shrubs, and grafted fruits. We grow our trees and shrubs in native soil contained in fabric bags and rootmaker pots. Our stock is grown with organic methods and we practice holistic orchard management. These practices are time consuming and labor intensive, but result in healthier plants, soils, water quality and beneficial insect populations.

We will have many heirloom and uncommon varieties of grafted apples, apricots, plums, pears and cherries in the late summer or fall but have limited inventory of fruit trees for this spring. Some of them may be new to you but are an opportunity for you to grow varieties that have all but disappeared from our markets. Our grafts are on rootstocks carefully selected to match climate and soil types in this area. Our species trees and shrubs are easy to care for and will provide screening, habitat and food for wildlife and yourself.

We believe in selling small caliper trees with well-developed root systems. The fabric root bags we plant in are key factors in building a fibrous root structure. Smaller caliper trees establish more quickly with less transplant shock, and grow more vigorously in difficult sites than large caliper trees.

All our plants are healthy and true to name. Their survivability depends on their care once they leave this farm. No other warranties are implied. But if you have questions, please contact us by phone or email.

Thank you for your support, and for buying local,



Gordon Tooley and Margaret Yancey

HOURS FOR RETAIL SALES:

August 21 through November 1- Fridays, Saturdays and Sundays from 8-5.

Weekdays other than Friday are by appt. only.

Wholesale prices are reserved for nursery and landscape professionals.

We close for the winter on November 1, 2020.

WE DO NOT ACCEPT CREDIT CARDS. CASH OR CHECK ONLY PLEASE

TREE AND SHRUB PLANTING GUIDELINES

The most common reasons for plant failure are planting too deep and over amending the soil.

THE ADVANTAGES OF FABRIC ROOT BAGS

- Plants grown in fabric bags are healthier and grow faster than plastic container grown stock.
- Containers are more susceptible to problems of inadequate or excess water and fertilizer.
- Roots often circle in pots.
- Plants grown in root control/rootmaker bags have fibrous roots.
- The tough fabric of the bag prunes the root structure so shock is reduced when the tree or shrub is transplanted.
- 90% of the plant's root structure remains intact in the bag.
- Traditional field digging can cut away too much of the root structure.
- At the nursery it is easier to keep bagged stock from drying out or tipping over than containerized stock.

INSTRUCTIONS FOR PLANTING FROM ROOT BAGS

Remove the bag before planting the tree.

Cut the fabric from top to bottom and peel it away.

Occasional roots may be caught in the fabric – cut these with hand pruners.

Do not jerk the fabric away from the root ball.

SITE PREPARATION

Dig shallow planting holes two to three times as wide as the root ball. Wide, shallow holes encourage horizontal root growth that trees and shrubs naturally produce. Trunk flare should not be below grade. In well-drained soil, dig holes no deeper than the trunk flare. In poorly-drained clay soil, dig holes two to four inches shallower so that trunk flare is higher than grade. This will help prevent crown rot.

Don't dig holes deeper than trunk flare or put loose soil beneath roots, because loose soil will settle over time, leaving trees and shrubs planted too deep. Widen holes near the soil surface where most root growth occurs. Score walls of machine-dug (auger, backhoe) holes to remove glazing.

Backfill holes with existing unamended soil. **Do not incorporate organic matter into backfill for individual planting holes.** This can cause problems with water movement and root growth between the root ball, planting hole, and surrounding soil. Backfill with

soil, then water thoroughly to settle out air pockets. Then water again. Cover any exposed root ball tops with mulch, but keep the mulch 2" away from the trunk flare. Spread any soil amendments you like to use around the tree on the surface of the soil, under the mulch. Soil builds from the top down so the amendments will do your plants more good spread in a wide area than dumped in the planting hole.

TREE CARE AFTER PLANTING

Remove tags and labels from trees and shrubs to prevent girdling branches and trunks. Make a map of planted area.

Good follow-up watering helps promote root growth. Drip irrigation systems and water reservoir devices facilitate efficient watering. Mulch, but don't over mulch, newly planted trees and shrubs. Two to three inches of mulch is best; less if a fine material, more if coarse.

Keep mulch from touching tree trunks and shrub stems. This prevents disease, insect and rodent problems if using organic mulches, and bark abrasion if using inorganic mulches.

Don't use black plastic beneath mulch around trees and shrubs because it blocks air and water exchange.

Only stake trees with large crowns or those situated on windy sites or where people may push them over. Stake for a maximum of one year. Allow trees a slight amount of flex rather than holding them rigidly in place. Use guying or attaching material that won't damage the bark such as wide cloth straps. Wrap the strap once around the trunk at half the height. Use 2 wood stakes, not metal. To prevent trunk girdling, remove all guying material after one year.

Most trees should not have their trunks wrapped. Wrapping often increases insect, disease, and water damage to trunks.

*****VERY IMPORTANT PROTECTION FOR YOUR TREES*****

For protection against small animals or equipment damage, install guards or a circle of 1/4" hardware mesh fencing to protect the trunk. Be sure the guards or mesh are loose-fitting and permit air circulation. Remove plastic guards in spring.

For protection against larger animals (like deer) install a large ring of field fencing to keep the animals from nibbling at the leaves and young branches.

TREE PRUNING

Pruning is a very intuitive process. "Touch Trees". Feel that trees are living organisms; get to know your subjects. They all have different growth patterns to observe. Work with the natural form the trees possess.

Be a good investigator, take your time, pay attention to details, do a good job, educate yourself.

Why to Prune

- Control size and develop strong tree structure
- Reinvigorate old wood to productive wood
- Decrease vigor, issue new responses at cut site
- Increase fruit spurs and thin fruiting wood
- Open up canopy for better light penetration and air circulation
- Remove weak crotch angles
- Remove competing branches
- Remove co-dominant branching, crossing, and dead branches
- Remove interior non fruiting and marginal fruit sites(fruit spurs growing below branches)
- No sealers or paint on any cut surface ever
- Pruning influences fruit quality and balances vegetative growth with fruit load

General Rules

- Never remove a branch or twig without having a reason to do so.
- Don't remove lower branches too early, lower branches aid in trunk flair, good anchorage, and branch development
- Seedling trees usually need less or very little pruning to maintain a natural habit
- Clonal rootstock tend to need more maintenance due to tendencies to produce more branches that want to grow vertical
- Spur types need very little training, thinning, or heading
- Pruning is a dwarfing process, increases vegetative growth, stimulates wood replacement, and reinvigorates tired, low productive wood
- Pruning reduces yield, removal of wood with flower buds reduces potential fruit,
 - Yields are less but quality is improved by size.
 - Weight load to scaffold is reduced- especially important in young trees
- Never top an established tree to lower size!
- Pay attention to natural tree shapes, try to work with what the tree wants to do.
- In most cases you can follow up with pruning that complements natural branching rather than making them do what they may not want to do.
- Tool hygiene; clean, sharp, keep off the ground, wipe or spray with 90 percent alcohol, approved bactericides and fungicides, or 5% bleach and water
- Cut or chip the cut branches and twigs into small pieces to create Ramial wood mulch. Remove all diseased wood.

Types of Cuts

Pruning is: thinning, heading, bench cuts, notching to increase or decrease bud vigor

- Thinning cuts: removal of competing branches and twigs, opens up light and air
- Heading cuts: reduce apical dominance, reduce length, control height and width, send new vigor to the next 3 to 5 buds below the cut to direct growth to spurs
- Never make flush cuts, they callus improperly and increase decay surface area
- Avoid stub cuts, final cuts should be at collar or branch bark ridge

Timing of Pruning

- Things that flower first, get pruned last; late in the dormant season or very early in the spring before bud break
- Heavy pruning in the growth flush, and before leaf drop in the fall should be avoided
- No more than ¼ of the trees canopy should be removed per season
- Young trees can respond to heavy pruning better than established trees
- Trees don't heal, they seal. Cutting wood at any time stimulates cell activity at the cut site to compartmentalize cell walls to seal out infection
- Early winter pruning can cause winter damage and interrupt dormancy clock, even causes some species to break bud too soon. It should be avoided.

Dormant Season Pruning

- Dormant pruning stimulates wood replacement, don't remove a branch unless you have a reason and make yourself aware of the response the tree will make at that site
- Very late winter or early spring is the preferred time to prune. This can aid in preventing premature bud break, fruit loss, and winter damage.
- Pruning delays fruiting, unpruned trees will flower and fruit sooner
- One to four year old trees should not be pruned too much in winter for these reasons
- Stone fruits (apricots, plums, cherries, peaches, nectarines) sometimes experience limb die back or gummosis caused by the fungus *Eutypa lata* or *Cytosporina*. It is safer to prune these in early summer during periods of low humidity.

Summer Pruning

- Summer pruning encourages spur formation and can lessen water sprout competition in trees that are heavily pruned or have an umbrella formation
- Summer pruning reduces canopy and root growth due to loss of leaf surface, can affect trunk flair and retard vigor in young trees, and delay fruiting
- Summer pruning stiffens branches so use caution when pruning narrow crotch angles that will eventually be pushed out with limb spreaders, since this can cause included bark which is more prone to splitting
- One to four year old trees should not be pruned too much in summer for these reasons
- Summer pruning can help bring biennial croppers into a more annual cycle
- Summer pruning is preferred for stone fruits

ADDITIONAL RESOURCES

'The Apple Grower', 'Mycorrhizal Planet' or 'The Holistic Orchard'- Michael Phillips. We encourage everyone to read these. They cover all aspects of tree care, healthy orchards and wildlife habitat.

Alex Shigo – Anything he published

'Physiology of pruning fruit trees' - publication number 422-025, Virginia Tech cooperative extension

Cornell Cooperative extension publication #112

NMSU cooperative extension bulletins

'Encyclopedia of Organic Growing' - Rodale press

'The Pruning Book' or 'Grow Fruit Naturally' Lee Reich

'Organic Orchard' - Gene Logston

'Fruit, Berry and Nut Inventory' Seed Savers Exchange

'Growing Food in the Southwest Mountains' Lisa Rayner

'Will Bonsall's Essential Guide to Radical, Self-Reliant Gardening' Will Bonsall

'Call of the Reed Warbler' Charles Massy

For more information on tree planting, look at the International Society of Arboriculture's website:

<http://www.treesaregood.org/treeowner/plantingtree.aspx>

Also check out: www.GrowOrganicApples.com for a wealth of helpful information- not just on apples.

SPECIES TREES & SHRUBS

***Acer ginnala*/Amur Maple**

To 20'. Zone 3. Small, shrubby maple widely used for screening and shelterbelts. Easily trained as multi-trunk specimen. Hardy and tough. Dense glossy foliage, vivid scarlet autumn leaf color, fragrant spring bloom clusters. Low maintenance, establishes readily on most sites.

***Amelanchier alnifolia*'Smokey' Serviceberry**

To 9ft. Zone 2. Large fruited selection of Western Serviceberry. Sweet, ½" blueberry like fruit. Used for fresh eating, pies, muffins or canning. Clusters of white flowers in early spring. Yellow fall foliage. Bears 2-3 years after planting. Does well in neutral or acid soils. Self-fertile and long lived. Adaptable to moist or dry soils. Hardy and drought tolerant. Ripens during July. Originated in Alberta, Canada. Introduced in 1952.

***Crataegus douglasii*/Douglas Hawthorn**

To 30'. Zone 4. Small tree with pendulous branches, dark green, shiny leaves. Black berries liked by birds.

***Crataegus monogyna*/Singleseed Hawthorn**

20'-30 ft. tall. Zones 4-7. Rounded, densely branched tree with slightly pendulous branches and moderate thorny character. Rich, polished green foliage, white flowers in mid to late May. Red ¼" to ½" fruit in September and October.

***Juniperus scopulorum*/Rocky Mountain Juniper**

30'-40' high by 3'-15' wide. Zone 3. Narrow, pyramidal tree often with several main stems. Valued for its use as screens, hedges, backgrounds. Very nice blue cast to the foliage. Withstands drought conditions very well.

***Morus alba tartarica*/Russian Mulberry**

Blackberry-shaped, sweet, mild, white fruit, sometimes pink or purple. Dried like raisins. Staple food in parts of Asia. Also delicious fresh or in pie and jam. Large spreading, bushy tree grows rapidly to 45-50 ft. tall. Bears fruit in about 3 years. Tolerates poor conditions and practically disease free. Self-fertile. Hardy to -25 degrees F. Native to China, but naturalized around the world. Used to feed silkworms.

***Picea engelmannii*/Engelmann Spruce**

Zone 2. Grows just below timberline on the highest mountain ranges throughout the Southwest. May reach height of 165 ft. and diameter of 5 ft. in extreme instances. Cones are small, from 1 to 2.5 in. long. Needles feel soft in contrast to the sharp stiffness of blue spruce needles.

***Picea pungens*/Colorado Spruce & *Picea pungens glauca* /Colorado Blue Spruce**

To 100', Zone 2. Foliage bluish-green or silver. Broad dense narrow pyramid with horizontal stiff branches to the ground. Is more drought tolerant than other *Picea*. Native to the southwestern states.

***Picea schrenkiana*/ Schrenk Spruce**

Zone 4. Introduced from Central Asia in 1877. Height: 80 ft Spread: 20 ft. Annual growth rate less than 12 inches. Schrenk Spruce is native to Asia and it is relatively rare in landscapes. The crown is pyramidal to somewhat oval. The horizontal branches do not develop the drooping habit that is typical of other spruces. The bark is purplish-gray and flakes off to reveal orange-brown new bark.

***Pinus edulis* / Piñon or Pinyon Pine**

Up to 35'. New Mexico's state tree. Growth is very slow, trees 6-10 inches in diameter may be 100 to 150 years old. Small cones produce one of the largest and tastiest nuts, prized by both humans and wildlife. The wood is popular for pitchy, fragrant firewood. Pinyon is native to the southern Rocky Mountain region, predominantly in the foothills, from Colorado and Utah south to central Arizona and southern New Mexico.

***Pinus flexilis*/Limber Pine**

To 60'. Zone 2. Young trees conical becoming rounded with age. Bark dark gray, deeply furrowed with age. Native range from Alberta to Texas. Five needles per cluster, densely crowded on the ends of branchlets, pointing forward, dark green to a slight glaucous dark green. Very adaptable species. The seeds of Limber Pine are large enough to be of value as food.

***Populus x acuminata*/Lanceleaf Cottonwood**

25' to 45'. Zone 3. Upright form with broad spreading crown. Introduced into cultivation in late 1800's. Good alternative to Aspens for lower elevations. Greenish, yellowish bark. Fairly fast growing, hardy, cottonless shade tree.

***Populus tremuloides*/Quaking Aspen**

To 50', Zone 2. Beautiful, fast growing native tree. Extremely cold hardy. Green, heart-shaped leaves flutter in the slightest breeze. Brilliant yellow, rarely red fall color.

***Prunus americana*/Wild or American Plum**

10'-25', Zone 3. Small graceful tree or shrub. Beautiful fall color. Fragrant, white flowers bloom profusely. 1" red and yellow fruit. Excellent food for wildlife. Good for jams and jellies. Drought tolerant, and not soil specific. Excellent pollinator. Good choice for screening and wildlife habitat.

***Prunus besseyi*/Western Sand Cherry**

Zones 3-6. 4'-6' tall and wide. Suckering, spreading shrub. Pure white ½" diameter flowers in late April/early May. Purplish black ¾" fruit in July and August. Tolerates hot, dry conditions. Prefers well drained soil. Introduced 1892.

***Prunus tomentosa*/Nanking Cherry**

To 10', Zone 2. Bark is shiny, reddish-brown and exfoliating. Leaves are dark green, flowers are pinkish in bud, changing to white and fragrant. One of the earliest flowering prunus species. The fruits are scarlet, ripening June through July. Good windbreak filler, drought tolerant.

***Prunus virginiana*/Chokecherry**

20'-30', Zone 2. Small suckering tree or large shrub with oval crown. Flowers are white 3"-6" long racemes. The fruit is red, ripening to dark purple. The fruits can be used for making jams, jellies, sauces and wines. Good screening and habitat plant.

***Quercus gambelii*/Gambel Oak**

20'-40'. Zone 5. Drought tolerant native oak of the Rocky Mountains. Shrubby to tall, rounded crown. Excellent wildlife food, browse and acorns. Nice fall color.

***Rhus trilobata*/Skunkbush or 3 Leaf Sumac**

To 6', Zone 2. Medium, informal shrub, clumping habit makes a natural low hedge. Brilliant yellow to red fall color. Very drought tolerant. Refreshing drink can be made from the berries.

***Ribes cereum or inebrians*/Wax Currant**

Hardy to Zone 5. Grows to six feet tall on dry sites. Stems are gray and woody without spines or prickles. Flowers are numerous and white, pinkish, or light yellow. Leaves are small, rough, shallowly lobed, and have a pleasant spicy aroma. Berries are edible but not flavorful.

***Ribes sp.* 'Jonkheer Van Tets' Currant**

Clusters of large red fruit. Fine flavor. Good for eating fresh, jellies or sauces. Bush has spreading growth habit. Best to be trained on a cordon or fence. Excellent for espalier. Heavy producer. Mildew and aphid resistant. Appears somewhat less tolerant of summer heat than other reds. Zones 3-9. Imported from Holland in 1941.

***Ribes sp.* /Hinnomaki Red Gooseberry**

Dark red medium size fruit with tangy outer skin and sweet flesh. Upright plants are adaptable to various growing systems. Favorite with home gardeners. Good mildew resistance. Self-fertile. Ripens in July Zones 2-9. Originated in Finland.

***Ribes rubrum* 'Pink Champagne'/Pink Champagne Currant**

Zone 3-8. Red x white currant cross. Compact bush produces large clusters of light pink berries. Not as tart as red currants. Good for fresh eating, cooking and preserving. Resists mildew, rust and aphids. Easy to grow. Sun or part shade. Ripens in July.

***Ribes rubrum* 'Red Lake'/Red Lake Currant**

Zone 2-6. Superior strain of *Ribes rubrum*. Compact clusters are medium to large, 4" long with 8-10 berries. Long stems for easy picking. Large ½" diameter dark red berries. Excellent for jellies, preserves, tarts and muffins. Makes sparkling red jelly. Strong, vigorous, upright bush with dense foliage; 4'-6' tall and 2'-5' wide. Early bearing; produces fruit on two-year and older wood. Long ripening season; holds well on the bushes. Remains productive in partial shade. Excellent bird forage and windbreak plant. Ripens during July.

***Ribes rubrum* 'Rovada' Currant**

Bears abundant long clusters of translucent red berries. Delicious eaten fresh and in jams and jellies. Vigorous and disease resistant. Late flowering escapes most frost. Ripens late July. Zones 3-7. Developed in the Netherlands.

***Rosa rubiginosa* (also known as eglanteria)/Sweetbrier Rose.**

6', Zone 4. Erect with unequal hooked prickles. Rose pink single flowers. Sweet spicy apple scented foliage. A pleasant vigorous informal hedge.

***Rubus sp.*/ Prime Ark® Freedom Blackberry**

Zones 6-9. Released from Dr. John Clark and University of Arkansas primocane breeding program. For floricanes fruiting, it ripens fairly early and has very large fruits, with excellent flavor. Freedom is a great choice for local commercial distribution and home gardens. It is not recommended for the shipping market. Prime Ark® Freedom requires "tipping" to achieve the highest yields and performance. Fall-bearing or primocane blackberries respond favorably to tipping. As the primocanes reach 12-15" in height, break or cut ¾-1" off the tip of each cane to force branching. Tip again when branches reach 30". This process stimulates earlier fruit development, keeps plant height in check, and increases yield.

***Sambucus canadensis*/ American Elderberry**

Zones 3-9. Heavy clusters of edible, purplish black fruit. Rich aroma. Full-bodied flavor. Good for pies, jellies and wines. Fast growing, short-lived shrub. Tiny white blossoms form huge flower clusters up to 10 inches across from June to July. Flowers used in teas. Plant two varieties to ensure pollination. Likes full sun and slightly acid soil. Does well in wet sites. Ideal shrub for attracting song birds. Ripens late summer.

***Sambucus nigra*/Samdal Black Elderberry**

Zones 3-8. This is one of several newer elderberry varieties from Denmark. Plants are vigorous, producing long shoots from soil level one growing season and bearing fruit the next. These are removed after bearing and replaced by the current year's growth. This makes the plant easy to prune and manage as a bush. Large fruit clusters with good flavor ripen in August each year. Berries have high anthocyanin content. Both varieties, or another *S. nigra* cultivar, are required for cross pollination.

***Sambucus nigra*/Samyl Black Elderberry**

Zones 3-8. This variety will provide good cross-pollination when paired with the Samdal variety. Samyl has particularly high-quality flowers.

***Symphytum x uplandicum*/ Comfrey**

Typically grown in borders and shade gardens for its attractive foliage and Virginia bluebell-like spring flowers. Commonly known as Russian comfrey, a naturally occurring hybrid, typically grows in an upright clump to 18-24" tall. From pinkish buds, flowers open up rose but mature to purple. Comfrey has been grown in medicinal herb gardens for several centuries for the purported healing properties of the leaves and roots when applied as a poultice to inflammations and wounds. It is also a dynamic accumulator which gathers minerals or nutrients from the soil and stores them in a more bioavailable form and in high concentration in their tissues, then can be used as fertilizer or to improve mulch. **LEAVES ARE POISONOUS TO HUMANS IF INGESTED.**

GRAFTED APPLES

We try to have a large selection of heirloom and newly developed grafted apples to offer you. We do much of the grafting here on the farm and select rootstocks and scion wood that should be productive in Southwestern soils and in this climate. These apples may be less well known, but merit attention in the trade. In addition to adding unique trees to your landscape, you help to preserve diversity and the unusual characteristics of these fruits by planting these trees. The majority of these apple trees are grafted on M7, EMLA 7 and EMLA 111 rootstocks. These provide long lived semi-dwarf trees that are well anchored and perform well in most sites. EMLA 7 and M7 will generally produce 12'-15' trees and EMLA 111 will be 15'-20'. We have a few varieties on Standard rootstock. Please enquire as they change from year to year. Mature tree size is a combination of the characteristics of the rootstock and the variety, as well as the quality of the soil and care given to the tree.

 Baking  Fresh eating  Processing  Cider  Storing

Chestnut Crabapple

Malinda x Siberian Crabapple. Large cooking and dessert crabapple. Attractive, reddish bronze fruit. Crisp, juicy, sweet flesh with a pleasing nutlike flavor. Excellent fresh. Vigorous tree is upright but a little weeping. Large white blossoms with good shape and aroma; medium pollen producer. Fruit hangs well and ripens over a long period. Annual bearer. Cedar apple rust resistant. Hardy to -50 degrees F.

Ellis Bitter Apple

Cider variety. Yellow skin. Blooms late. Precocious and productive tree is a tip bearer. Susceptible to Fire Blight. Short storage. Ripens in September. Zones 4-6.

Harrison Apple

Cider variety. Medium size fruit with round to oblong shape. Yellow skin with black dots. Coarse, dry yellow flesh. Ripens in October. Originated in New Jersey in the early 19th century.

James Grieve Apple

Speculated to be a seedling of either Potts Seedling or Cox's Orange Pippin. Medium to large, conical fruit. Almost solid crimson over yellow. Very juicy yellowish flesh. Excellent flavor. Poor keeper. Excellent cropper. Ripens in early September. Originated around 1890 from a seed planted by James Grieve of Edinburgh, Scotland.

Russell's Russet Apple

Chance seedling of unknown parentage. Excellent early fall dessert apple. Originated in Mt. Vernon, Maine. Discovered by Russell Libby. Brownish russet skin. Not a late keeper. Hardy to Zone 4.

Scott Winter Apple

Vermont seedling with red fruit. Flesh is tinged with yellow, sometimes stained with red. Very juicy. The slightly tart flavor in the early part of the season becomes more mellow later. Tree bears at a young age. Ripens November to December. Keeps until April. Hardy to -50 degrees F with occasional winter injury. Originated in Vermont in 1864.

Sops of Wine Apple

Old English cider and culinary apple. Medium to large fruit. Greenish yellow skin overspread with purplish red, mottled and splashed and sometimes striped with dark carmine. Soft, fine grained, juicy, yellowish flesh is often stained with pink or flecked with red. Aromatic, mild, subacid flavor. Highly regarded for cooking, cider and apple wine. Good dessert apple as well Fair storage ability.

Medium to large tree bears early and reliably. Requires cross-pollination. Mid-season bloom. Ripens August -September depending on location. Introduced 1832. Hardy zones 5-9.

Whitney Crabapple

Round to conic crabapple is often larger than a golf ball. Uniform in size and shape. Light greenish yellow with red blush or stripes. Sweet, juicy, yellowish flesh. Mildly subacid with slight crabapple flavor. Favorite for home canning, preserving, pickling and spicing. Fair keeper. Narrow, upright trees bear heavily, even when young. Pink and white blossoms. Ripens late July to late August depending on location. 600 chill hours. Zones 2-9. Described by Warder in 1869.

Wickson Crabapple

Newtown(Albemarle Pippin) x Esopus Spitzenburg. Excellent cider apple. Small yellow and red fruit up to 2 in. diameter. Very sweet, up to 25% sugar, but a pronounced acid tang. Highly flavored juice. More crab than apple. Hardy to Zone 3. Albert Etter named this fruit after E.J. Wickson, distinguished California pomologist. Introduced in 1944.

GRAFTED CHERRIES

Tart cherries are natural dwarves and can be planted on 10' centers. Sweet cherries will be quite large and should be planted on 15' to 20' centers.

Mesabi – Pie or Tart Cherry

Zone 4. Self fertile. Long stemmed, red fleshed fruits with sugar content half way between pie cherries and Bing. Pyramidal tree grows to 12'. Fruit resembles Meteor but pit is smaller. Blooms early May.

Meteor – Pie or Tart Cherry

Montmorency x Russian variety. Large, oblong, bright red fruit resembles Montmorency. Tart, juicy, meaty flesh, colorless juice and a small, free pit. Natural genetic dwarf grows 8' to 12' tall. Moderately spreading with large, heavy, dark green foliage that shields fruit from sun scald and birds. Leaf spot resistant. Spur-type. Self-fruitful. Bears quite early. Blooms and ripens a week later than Montmorency in late June. Hardy to -50 degrees F.

Montmorency- Pie or Tart Cherry

Sweet cherry x Prunus tomentosa. The standard for pie cherries. Medium large, bright red fruits with firm, yellow flesh and clear juice. Rich, tart, tangy flavor. Does not get mushy during processing. Spreading, self-fruitful tree grows to 15 feet. Requires good drainage and aeration. Ripens late June to early July. 700 chill hours. Hardy to -40 degrees F. Zones 4-9. Originated in France in the 17th century. Introduced to the US in 1760.

GRAPES (not grafted)

St. Theresa Grape

Zone 4-9. Vigorous woody vine produces clusters of purple grapes which are mostly seedless. St. Theresa is an early season table grape with excellent flavor that will tolerate alkaline soils and can be used for juice or jellies. Well suited to arbors. Bred by Elmer Swenson of Wisconsin.

GRAFTED PEACHES

Cresthaven Peach

Medium to large, nearly round, golden yellow fruit with bright red blush. Very smooth, tough skin. Firm, juicy, clear, bright yellow, freestone flesh with considerable red around the pit. Resists browning. Hangs well on tree. Good canner and freezer, and shipper. Vigorous, medium large, productive tree. Tends to over set. Fair tolerance to bacterial spot. Ripens in August. Requires 850 hours of chilling. Above average bud hardiness. Zones 5-8

Reliance Peach

Medium sized fruit has dull red blush over yellow background. Bright yellow, medium soft, juicy, sweet flesh. Freestone even in the coldest, driest season; small pit. Good for canning, freezing and fresh market. Vigorous, fast growing tree; self-fruitful and bears when young. Showy blossoms. Very bud hardy. Best choice for severely cold winters and springs. Requires 950 to 1000 hours of chilling. Hardy throughout zones 5-8; withstands temperatures of -25 degrees F. From the New Hampshire Agricultural Experiment Station. 1964.

Sugar Giant Peach

Large, very firm fruit with nearly full, solid red color. White freestone flesh. Requires 800 to 900 hours of chilling. Trees are vigorous and very productive. One of the largest fruited varieties of the sub-acid white fleshed selections.

GRAFTED PLUMS

Mt. Royal Plum

Zone 3. 13'x13', ripens mid September. A blue European plum, excellent for fresh eating or canning, very hardy. Self-pollinating, benefits from cross pollination. Considered to be the best blue cultivar.

PRICES AND DELIVERY

Everything described in the catalog but not listed here, including fruit trees, is priced by caliper. All the grafted fruit trees listed in the catalog are available at this printing, although some quantities are very limited. We try to keep our website www.tooleystrees.com, up to date. Delivery is \$3.00 per loaded mile at this printing. Prices and availability subject to change. Wholesale prices are reserved for nursery and landscape professionals. All plants are in fabric root bags or 3 gal. Rootmaker pots.

WE DO NOT ACCEPT CREDIT CARDS. PAYMENT IN CASH OR CHECK ONLY PLEASE

Wholesale Caliper prices:

Under 1/2" One year whip . \$42.
 1/2" -3/4" \$55.
 3/4"-1" \$64.
 1" + \$112

Retail Caliper prices:

Under 1/2" One year whip . \$42
 1/2" -3/4" \$55.
 3/4"-1" \$78.
 1" + \$129

<u>Latin Name/Common Name</u>	<u>Wholesale</u>	<u>Retail</u>
Acer ginnala/Amur Maple	\$24	\$28
Amelanchier alnifolia/Smokey Serviceberry	\$24	\$28
Crataegus douglasii/Douglas Hawthorn	\$24	\$28
Crataegus monogyna/Singleseed Hawthorn	\$24	\$28
Juniperus scopulorum/Rocky Mtn Juniper	\$28	\$40
Morus alba tatarica/Russian Mulberry	\$24	\$28
Picea engelmannii/Engelmann Spruce	\$75 or \$80(in grnd.)	
Picea pungens/Blue Spruce or CO Spruce 7 gal	\$50	
Picea schrenkiana'tianshanica'/Schrenk Spruce	\$80	
Pinus flexilis/ Limber Pine	\$75 or \$80(in grnd.)	
Pinus edulis/Pinyon pine	\$24	\$28
Populus x acuminata/Lanceleaf Cottonwood	by caliper	
Populus tremuloides/Quaking Aspen	\$45	\$55
Pr. americana/Wild Plum	\$24	\$28
Pr. besseyi/Western Sand Cherry	\$24	\$28
Pr. tomentosa/Nanking Cherry	\$24	\$28
Pr. virginiana/Chokecherry	\$24	\$28
Quercus gambelii/Gambel Oak	\$24	\$28
Rhus trilobata/Skunkbush,3 leaf Sumac	\$24	\$28
Ribes/ Currants and Gooseberries	\$24	\$28
Rosa rubiginosa/Sweetbrier Rose	\$24	\$28
Rubus sp./ Blackberries	\$24	\$28
Sambucus sp./ Elderberries	\$24	\$28
Symphytum x uplandicum/Comfrey	\$16	\$20
Vitis/ St. Theresa Grapes	\$24	\$28

The Basics of Keyline Planning

The keyline design is unique to each property and will be formulated from evaluation of water movements over the land, with the idea of controlling and making use of this resource in the management of the land.

The keypoint occurs at the base of the steepest part of the slope in the center line of a valley. This is the fall line path that water currently follows.

The keyline of a valley is a contour line that runs through the keypoint. The ends of the keyline are where the contour changes direction from the valley to the ridge.

Water movement over the land and the land's features are directly related to each other, and water resources can only be used if they can be controlled.

Other factors such as climate, geology and rainfall patterns historically determined the land's topography. Controlling water is the main focus in keyline planning as this is one variable which can be manipulated.

Keyline Cultivation

Once the keypoints and keylines have been identified, the control of water movement over the land can be achieved through a keyline pattern of cultivation.

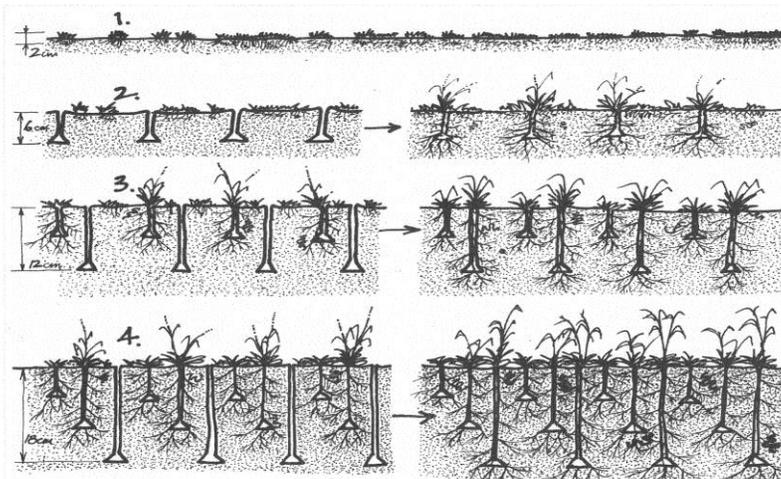


Figure 1. Soil development – mechanical method (Illustration adapted from the Permaculture: A Designers' Manual).

By cultivating parallel to identified keylines, both above and below the line, a cultivation pattern is developed which spreads the runoff evenly across the uplands and does not allow the water to follow its natural path and concentrate in the valleys. This aids in the stabilization of the valley and increases its ability to resist erosion.

The Long Term Benefits of Keyline Design

- Build resiliency into permanent landscapes
- Improve infiltration of precipitation
- Increase moisture retention
- Support habitat by increasing diversity
- Improve perimeters
- Break up hard pan and compaction
- Improve root zone and capillary activity
- Encourage soil building and reduce loss through wind and water erosion
- Reduce salinity problems
- Increase soil productivity by increasing soil biology. Biologically fertile soil has better structure and reduces runoff
- Stabilize soils and perimeters

Description of Tools Used

New Holland TM 175 Tractor and Yeomans plow with 5 26" shanks, coulters, crumble roller and 5 shank pot seeders for cover crops. A laser level will be used to locate keypoints and keylines.

Truax No Till Drill with 3 seed boxes to meter fluffy seed, large or heavy seed and tiny seed. 18 coulters incise the soil before the seed drops into 18 planter wheels. 18 packer wheels close the seeded openings making for good contact between seed and soil. The seed is effectively and efficiently metered with this tool which can also be used for interseeding to increase diversity in established grasslands.

Dixon Imprinter and V Ditcher also available.