



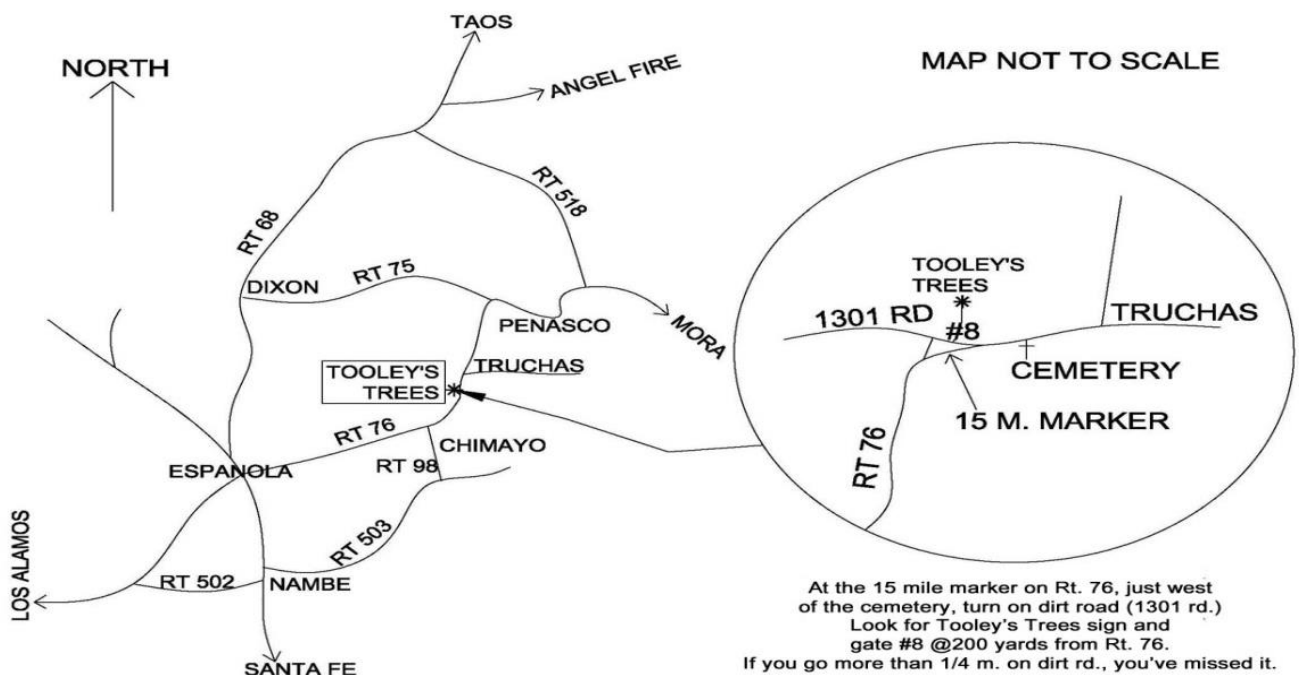
www.tooleystrees.com

2022 AUTUMN CATALOG

We offer a unique alternative to large commercial growers at great prices.

Quality Beauty Toughness

SUPPORT LOCAL AGRICULTURE



TOOLEY'S TREES & KEYLINE DESIGN
P.O.BOX 392 1301 RD. #8
TRUCHAS, NM 87578
(505) 689-2400 E-mail: info@tooleystrees.com
NM Nursery License # 6241
www.tooleystrees.com

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 have a limited selection of heirloom and uncommon varieties of grafted apples, plums, pears and tart cherries this fall. 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.

Fruit trees are cultivated plants. They need regular water as well as protection from predators large(cows, horses, deer, elk, bear...)and small(rabbits, gophers, mice, voles...) Drought tolerant means just that. It doesn't mean trees will thrive without irrigation. 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:

April 1 through May 29- Fridays, Saturdays and Sundays from 8-5.

Closed Easter Sunday.

We will be closed for the summer, re-opening on September 9 through the end of October unless we sell out sooner.

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 ¼" 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-dominate 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. Also check out and support: www.GrowOrganicApples.com for a wealth of helpful information- not just on apples.

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 Orchardng'- 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>

SPECIES TREES & SHRUBS

***Acer tataricum*/Tatarian Maple**

Zone 3. 15'-20'. Width comparable to height. A large multi-stemmed shrub or a small rounded wide-spreading tree. Dark green in summer, yellow and red in fall. Tolerant of adverse conditions including drought and high pH. Good where a small tree is desired. Local beekeepers tell us that the bees love its early season flowers.

***Amelanchier alnifolia*/Saskatoon Serviceberry**

Edible berries that look and taste similar to blueberries. Small tree 10 to 18 ft. Produces many suckers. Pretty white flowers in early spring. Adaptable to moist or dry or alkaline soils. Hardy to Zone 4-5.

***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.

***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*'tianshanica'/ 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 ponderosa*/Ponderosa Pine**

60'-100'. Zones 3 to 6. Narrow, pyramidal when young, with time develops an irregularly cylindrical and narrow crown with numerous short stout branches. Prefers well drained soil, sunny, open exposure, intolerant of shade, resistant to drought, tolerates alkaline soils.

***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 armeniaca mandshurica*/Manchurian Apricot**

10'-12', Zone 2. Compact, bushlike tree. Pinkish-white, frost resistant blossoms appear in early spring before the glossy green foliage. Vigorous, thrives almost anywhere. Bears young and heavily. Self-fertile, but more fruitful in groups of two or three. Small, plump, golden yellow fruit. Sweet freestone flesh, good for fresh eating, preserves and drying. Cultivated in Manchuria since 2000 BC.

***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.

***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.

***Ribes rubrum* /Mixed Currants**

Zone 2-6. Compact clusters of red or pink berries. Long stems for easy picking. Large ½" diameter berries. Excellent for jellies, preserves, tarts and muffins. 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. Productive in partial shade. Excellent bird forage and windbreak plant. Ripens during July.

***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.

***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.

***Rosa rubrifolia* (also known as *glauca*)/Red-leaf Rose**

5'-7', Zone 2. High erect cane shrub of good density. Beautiful purplish hue. Canes covered with a purplish bloom, armed with small prickles. Flowers single clear pink, hips are red. Fine shrub border. One of the hardiest of roses.

***Rosa xanthina*/Manchu Rose**

To 9'. Zone 5. Yellow single flowers, some semi-double. Purple to black upright arching canes and twiggy rounded habit. Can have stout broadbased interesting thorns. Scarlet turning blackish red fruit. Introduced from China in 1906. Very rare, highly recommended.

***Rubus sp.*/Nova Raspberry**

Medium sized, dark red fruit. Mild flavor. Medium height, nearly thornless canes. Good for fresh eating and freezing. Resistant to most cane diseases. Bears early in the season. Zones 3-8. Developed in Canada. Introduced 1981.

***Rubus sp.*/ Polana Raspberry**

Zones 3-8. At least three weeks earlier than Heritage, Polana raspberry allows you to grow fall varieties in more northern locations and still produce a great crop. Released from Poland, its berries are highly productive, medium/large, glossy in appearance, cohesive, with good flavor. This variety has short canes that are vigorous. Ripens early August in southern New England and late July in southern Wisconsin. In most cases, helps fill in the gap between summer and fall raspberries. A great choice for early fall raspberries. Polana needs extra fertilizer in May and June.

***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 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 or another *S. nigra* cultivar. 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 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 EMLA 111 rootstocks. These provide long lived semi-dwarf trees that are well anchored and perform well in most sites. EMLA 111 will generally produce 15'-20' trees. We also have some varieties on Standard rootstock; Malus Antanovka. 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

Annie Elizabeth Apple

Deep maroon blooms. Green-gold skin flushed orange-red with many short red stripes. White flesh has sharp flavor with an underlying sweetness. Excellent for stewing and baking. Highly vigorous. Ripens early to mid-October. Originated in England around 1857.

Brown Snout Apple

Cider variety that produces a sweet, slightly astringent juice and a mild to medium bittersweet cider. Small fruit with green to yellow skin color with patches of russet and a brown russet eye at the calyx end of the fruit. This distinctive brown eye is how the fruit got its name. Self fertile. Susceptible to fire blight. Ripens October to November depending on location. Discovered in 1850 in England.

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.

Claygate Pearmain Apple

Good size, brown russeted fruit with beautiful splash of crimson in the sun. Crisp, juicy, yellowish flesh. Rich sugary flavor like the Ribston Pippin. Good keeper; excellent bearer. Ripens late. Zone 6. Fine old English apple found growing in a hedge in the hamlet of Claygate in Surrey before 1820.

Crimson Beauty Apple

Fameuse family. Red striped fruit. Juicy, white flesh. Nice tart flavor. Good for sauce and cooking. Productive, early bearing tree. Ripens very early, about 8-10 days ahead of Lodi. Hardy to -50 degrees F with occasional winter injury.

Crimson King Apple

English Cider apple which is also excellent for fresh eating. Bright crimson skin. Tart flavor. A light fruity cider is produced from the acidic, non-astringent juice. Triploid. Ripens very late. First propagated by John Toucher of Bewley Down, Somerset, England, late in the 19th century.

Deacon Jones Apple

Possible seedling of Yellow Belleflower. Yellow skin with red. Yellow, firm, juicy flesh with mild flavor. Stores well. Late season ripening. Zones 3-6. Originated in PA around 1892.

Maiden's Blush Apple **& drying**

One of the oldest American apples. Flat, perfectly round fruit. Thin, tough, smooth, waxy, yellow skin with crimson blush. Crisp, tender, white flesh with maybe a slight yellow tinge. Fine for cooking, eating fresh, drying or making cider. Vigorous grower; bears early and annually. Subject to scab. Long harvest period. Ripens from mid-August to mid-September depending on location. Hardy to -50 degrees F with occasional winter injury. Original tree traces back to New Jersey prior to 1817. Susceptible to Fire Blight.

Orleans Reinette Apple

Round, flattened, green-yellow fruit, somewhat netted with slight russet, usually reddish in the sun. Fine, crisp, yellow flesh. Rich, nutty flavor. Ripens in October. Zones 6-9 but is doing fine in our orchard in Truchas (zone 5b). Originated in France. Introduced prior to 1776. Susceptible to Fire Blight.

Starkey Apple

Thought to be a seedling of Ribston Pippin. Not to be confused with Stark. Large fruit striped and splashed with bright red over a yellow background. White flesh. Among the best for winter storage. Hardy, regular bearer. Ripens in early October. Reaches its best flavor near Christmas. Zones 4-5. Originated in Vassalboro, Maine on the farm of Moses Starkey around 1820.

Summer Sweet Apple

Round-conic, yellow-green fruit with beautiful golden apricot-orange blush and occasional russet splash at the stem end. Yellow, firm flesh. Sweet distinctive flavor. Vigorous, upright, productive tree. Zones 4-6. Rare. Originated in Sidney, Maine about 1800.

Sweet 16 Apple

Malinda x Northern Spy. Red striped, conic fruit up to three inches. Aromatic, moderately acid, firm, crisp, cream colored flesh with high sugar content. Unique, pleasing, faintly nutty flavored cooking apple. Rates high as a pie and sauce apple; also an excellent dessert apple. Handles and stores well. Early bearing, late blooming tree with moderately spreading, vigorous habit. Dependable, annual bearer. Resistant to scab and fire blight. Extremely cold hardy variety. Can withstand -50 degrees.

GRAFTED PEARS

Allow for at least 15'-20' diameter spacing for mature Pear trees. These pears are on either OHxF 333, or OHxF 87 rootstock -12' to 18' at maturity.

Clapp's Favorite Pear

Very large, elongated, long necked, lemon-yellow fruit with dull red cheek and russet specks. White flesh is high quality, fine grained, very sweet and highly flavored. Dessert and fresh eating pear that is also good for canning. Not a keeper. Should be picked when full size but still green; do not leave on the tree. Fruit will break down at the core if picked too late. Strong, sturdy, very hardy, vigorous tree. Susceptible to fire blight. Ripens early August. Annual bearer. Hardy to Zone 4.

Comice Pear

Large, broad based, narrow necked, greenish yellow fruit with red blush and light russet. Rich, juicy, firm, sweet, finely textured flesh. Premium dessert pear. Too delicate for cooking. Needs a month of cool storage for good ripening. Large, very vigorous tree comes

into bearing slowly. Erratic cropper. Requires cross pollination. Matures one month after Bartlett. 400-600 chill hours. Outstanding winter pear that originated in Angers, France around 1849.

Staceyville Pear

Round, teardrop-shaped fruit is light yellow with a beautiful orange to solid gray-red blush. Delicious citrus aftertaste. Self-pollinating. Disease resistant. Extremely hardy. Zone 3. Rare.

Summercrisp Pear

Recognized for many years as the hardiest in the collection at the University of Minnesota Research Station. Free of fire blight. An annual bearer. Fruit is pyriform in shape, 2 1/2 to 3" in diameter and 3 to 3 1/2" long. Blooms early in May. The fruit should be harvested in mid-August when crisp and still green with a red blush. Fruit harvested at that time is sweet and crisp and may be stored up to two months. Zone 4.

Tyson Pear 

Known as Early Sugar Pear. Medium size, yellow fruit with juicy, spicy-sweet flavor. Excellent for early eating and local market. Short storage. Hardy tree is a heavy producer and fire blight resistant. Ripens in early August. Zones 4-8. Known since 1794.

Warren Pear   

Medium to large, long necked, drop-shaped fruit is faded green with an occasional red blush in full sun. Varies in size and shape. Sweet, very juicy, buttery, smooth flesh with no grit. Self-fruitful tree is spreading with pyramidal shape and thick, smooth branches. Doesn't blight in extreme heat or humidity. Cold hardy to -21 F. Discovered by T.O. Warren in Mississippi.

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. All plants are in fabric root bags.

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

Caliper prices:

1/2"-3/4" . \$50. 3/4"-1" \$65.

Latin Name/Common Name

Acer tataricum/Tatarian Maple	\$34
Amelanchier alnifolia/Serviceberry	\$34
Juniperus scopulorum/Rocky Mtn. Juniper	\$34
Picea pungens/Blue Spruce or CO Spruce 7 gal	\$60
Picea pungens/Blue Spruce or CO Spruce 15,20 gal	\$80
Picea schrenkiana'tianshanica'/Schrenkiana Spruce	\$90
Pinus ponderosa/Ponderosa Pine	\$60
Populus x acuminata/Lanceleaf Cottonwood	\$40
Populus tremuloides/Quaking Aspen	\$70
Prunus/ Sand cherry, Manch. Apricot	\$34
Quercus gambelii/Gambel Oak	\$28
Ribes/ Currants, Gooseberries	\$34
Rosa sp/Manchu, Redleaf, Sweetbrier Rose	\$34
Rubus sp/Raspberries, Blackberries	\$34
Sambucus sp./ Elderberries	\$34
Symphytum x uplandicum/Comfrey	\$24

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.

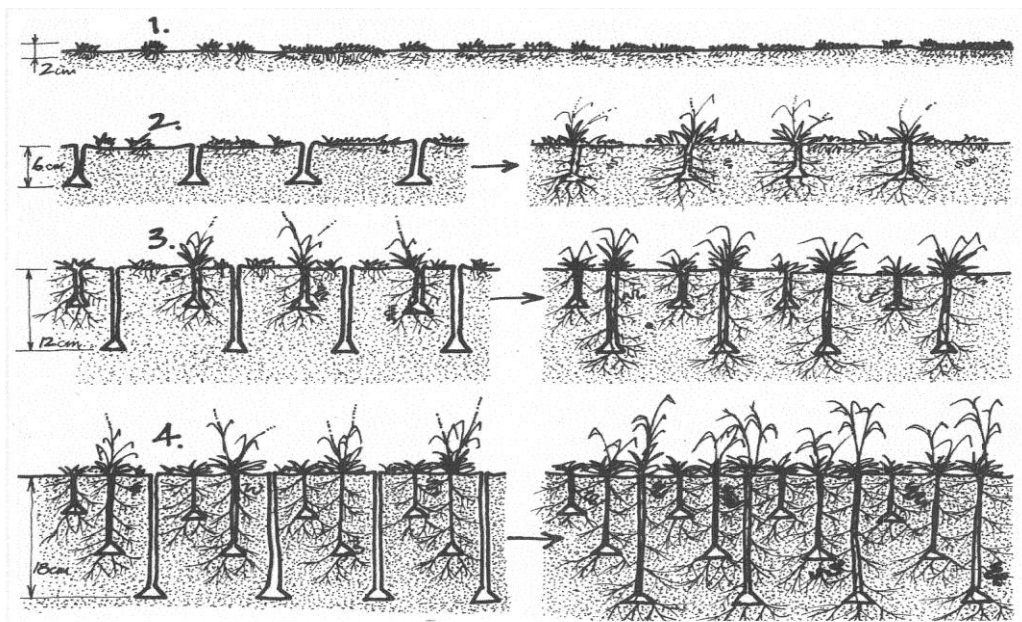


Figure 1. Soil development – mechanical method (Illustration adapted from the *Permaculture; A Designers' Manual*).

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.