

Field Windbreaks

What is a field windbreak?

A field windbreak is a belt of trees or shrubs established within or adjacent to a field. Field windbreaks reduce blowing soil, control snow deposition, conserve moisture, protect crops, orchards, wildlife and livestock, or simply increase the natural beauty of an area.

How it helps the land

Reducing wind speed will reduce soil loss and damage from the wind to a level which will permit crop production to be sustained economically and indefinitely. Field windbreaks also provide wildlife food, cover, nesting sites and travel lanes.

Where to get help

For assistance and additional information on planing and establishing a field windbreak, contact the local Natural Resources Conservation Service or Conservation District office. Additional information relating to tree planting can be found in Oklahoma Job Sheet JS 612 01.

Requirements of a field windbreak

To protect crops which are highly susceptible to wind erosion and keep soil loss within tolerable levels, plan to plant tree rows at right angles to the prevailing wind direction.

All areas in need of protection should be located within 10 times the height of the tallest tree row. Since the height will change until

the tallest tree row reaches maturity or becomes ineffective, it is suggested that the estimated height of the tallest tree species at 20 years of age be used for planning purposes. If this distance is too close to meet your goals and objectives, other forms of wind control will need to be considered such as strip cropping, grass barriers, or residue management, to stay within tolerable limits beyond this distance.

Generally a three to five row windbreak will be adequate.

- The first row from the windward side should provide a low growing, dense barrier. A species such as Honeysuckle or American plum spaced three to five feet apart should be considered for this row.
- The next row should consist of an evergreen type species to provide high density to the mid-height area as well as providing year round protection. Species to be considered in this row might include Austrian pine or Eastern red cedar. Evergreen trees should be spaced 6 to 12 feet apart.
- The third row should provide density at the highest level of the windbreak. The taller species may include such deciduous trees as Hackberry, Pecan, Ash, Honey locust, Mulberry or Osage Orange. These trees should be spaced from 12 to 18 feet apart.

Space the rows to allow for cultivation between the rows plus an additional four feet (usually 12-20 feet). Stagger or alternate the

position of trees in adjacent rows. Do not alternate species within the row.

Applying the practice

Site Preparation

Trees have a much better chance of survival when the planting site is properly prepared. Site preparation on medium or heavy cropland soils should include summer fallowing. When planting trees in sod or alfalfa crops, prepare the ground by subsoiling with a ripper or paraplow, leaving the surface rough over the winter and disking or harrowing in the spring to provide a clean, firm seedbed for tree planting.

Sandy soils which are subject to wind erosion should not be summer fallowed. A cover crop of Sudan or Haygrazer should be seeded the summer before planting the trees. The area may require chemical treatment if annual winter weeds or grasses present a problem, before tree planting. If chemicals are used, follow the label recommendation.

If weed barrier is to be used on sandy soils, disk and clean only the row area which the material will cover.

No tree planting can be made in Bermudagrass. Steps to destroy or control bermudagrass must be applied prior to the planting of trees and shrubs.

Planting The Trees

- Only high quality, dormant trees will be planted.

- ☑ Plant bareroot seedlings in early spring as soon as the ground thaws. Only containerized seedlings should be planted after April 15.
- ☑ Plant when there is good soil moisture but not when the ground is saturated with water.
- ☑ Avoid planting under dry, windy or very warm conditions.
- ☑ Exercise extreme caution while planting bare root seedlings, to keep the roots from being exposed to open air.
- ☑ Do not plant when the ground is frozen or during periods of freezing weather.
- ☑ When taking the seedlings to the field, transport and store the seedling bags in cool, shady locations and protect them from temperature extremes.
- ☑ Only open one bag at a time and close it immediately after taking only one handful of seedlings or what will be used in a short period of time. Transfer trees from shipping bags to planting bags quickly. Do not hit tree roots to remove excess peat moss or dirt.
- ☑ Keep seedling roots covered with moist burlap, moss or in buckets of water. Expose only the single

tree being planted, at the time, to the elements when planting.

- ☑ Plant the tree one inch deeper than they grew in the nursery. Roots must extend down and out naturally and not crimped in the hole or furrow.
- ☑ Do not force roots into too shallow a hole or furrow. Avoid "J" or "L" rooting."
- ☑ With hand planting use your shoe to pack the soil firmly around the roots. If planting with a machine, make sure the packer wheels have the proper tension and are in the proper alignment in relation to the tree.
- ☑ Check to see if the roots are packed tightly by gently pulling the top. The seedling should not be loose.

Other considerations

Installing a drip watering system on a newly planted windbreak will help insure tree seedling survival the first year, and provide supplemental water during the critical three year establishment period. Installing a drip system is highly recommended, but not required.

Where drip watering is not practical, polypropylene woven fabric can increase the survivability of tree

seedlings by retaining soil moisture and acting as a weed barrier. The fabric comes in widths of six feet and is rolled over the newly planted trees. The trees are then pulled through openings cut in the fabric. The fabric lays flat over the soil with the edges secured by covering with soil or stapling.

If a danger for wildfires exist, consideration should be given to establishing a firebreak to protect the windbreak.

Maintenance

Just like any other crop, weeds must be controlled in a new windbreak planting. The first three years are the most critical. If a woven fabric weed barrier is not used, the area should be cultivated shallow, less than three inches deep, to avoid injury to the tree roots. Some hand work may be necessary close to the trees. If herbicides are used, apply only approved herbicides and according to the manufacturer's recommendation--READ THE LABEL.

Livestock must be excluded from the windbreak. A dependable barrier such as a permanent four or five wire fence should be used and maintained.

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