

# Designing Windbreaks

## Field Windbreaks

The objective of a field windbreak is to reduce wind speed that goes across a field. By reducing the wind we can decrease soil erosion, soil moisture evaporation, and increase crop production.

**Number of Rows:** 1 or 2 rows. From a cost stand point, I recommend going with one row.

**Row Location:** As a minimum, plant one row on the northern boundary, and one on the west boundary. Another way to do it would be to plant one on the north with additional rows about every 200 feet or so, the spacing would depend on the T factor of the soil. The more the soil is likely to blow, the closer the rows should be planted.

**Species:** Plant tall deciduous trees such as Honeylocust, Hackberry, and Bur oak. Do not plant elm or cottonwood trees, because their root system will compete heavily with the crops for available soil moisture.

**Notes:** When you design the windbreak, make sure you discuss the location and the design with the producer. His input will give you insight as to how much space he will need to operate the farm machinery near or around the windbreak.

## Wildlife Plantings

The objective of wildlife a planting is to increase wildlife habitat and therefore increase the amount of wildlife in an area.

**Number of Rows:** You want to make thickets for wildlife. As a minimum, I would recommend 3 rows. A good thicket would have around 10 rows. It is nice if you can plant 2 or 3 rows of juniper on the north and west sides, forming an L shape, to act as a windbreak. You would then plant the thicket behind it.

**Row Location:** Plant the thickets away from houses, you want them near a source of food and/or water if you can. A good place to plant is along creeks, near ponds, pivot corners, places on the farm that are waste ground (*not in production*), and places in the landscape that would be a good place to ride out a storm (*the side of a hill or in a depression*).

**Species:** Plant Rocky Mountain Juniper, Eastern Red Cedar or Ponderosa pine, Austrian pine, Pinyon pine, or Scotch pine, in your L shape windbreak. You could plant any of the recommended shrub species behind the first two or three rows of the L shaped windbreak. I recommend the following shrubs: Sumac, Plum, Chokecherry, Buffaloberry, Honeysuckle, Nanking cherry, Woods rose, New Mexico forestiera (*privet*), and Cotoneaster.

**Notes:** The CDOW does not recommend planting tall deciduous trees or pine trees around thickets when you desire pheasants. They say hawks roost in the trees and eat the pheasants. To make a good thicket, you want shrubs that will sucker. Plum, Chokecherry, Buffaloberry and Woods rose. Wood rose is less drought tolerant than other species. Sumac will sucker out a little and is the most drought tolerant. However, don't limit yourself only to plants that will sucker. I think it is best to have 2 different species of shrubs in a thicket.

## **Shelter-belts**

The objective a shelter-belt is to provide shelter to a home site from the elements such as wind, snow, and sun. Another objective can be to provide wildlife habitat around the home site.

**Number of Rows:** The more rows that you can plant the better. A good windbreak has at least three rows, and as many as seven or more. Usually the limiting factors that do not allow for several rows are space and money.

**Row Location:** I would recommend three rows on the north and on the west as the highest priority. A row of deciduous trees on the south side is something to consider, it provides shading in the summer and in the winter the leaves fall off and allow the sun to shine and heat the house.

**Species:** Juniper and Eastern red cedar make great shelter-belts. I recommend having at least one row of them in every shelter-belt. Species selection is mainly left up to the preference of the landowner. I would recommend the following species: Cotoneaster, Honeysuckle, Chokecherry, Lilac, Plum, Sumac, Nanking cherry, Sandcherry (*it is fast growing and fast dying*), Woods rose, privet, buffaloberry, Siberian elm (*fast growing, trashy*), Hackberry, Honeylocust, Bur oak, Austrian pine, Ponderosa pine, Colorado blue spruce (*needs to be watered during the summer and tree shelters are highly recommended*), Eastern red cedar, Rocky Mountain Juniper, Scotch pine, Pinyon pine, and Bristlecone pine (*slow growing needs protection*).

**Notes:** You may want to plant the shrub row on the inside row so that the homeowner can enjoy birds, and other wildlife.

## **Living Snow fences**

The objective of a living snow fence is to reduce the drifting of snow on roadways.

**Number of Rows:** Two or three rows.

**Row Location:** 150 feet from the edge of the road on the north or west side.

**Species:** Rocky Mountain Juniper, Eastern red cedar, and if you want, plant a row of shrubs for wildlife. For the correct shrub species refer to the recommendation in the wildlife section. Another option would be to have one or two rows of Rocky Mountain Juniper and or Eastern red cedar and one row of Ponderosa pine.

**Notes:** You may want to refer to a technical guide that the NRCS has on living snow fences.

## **Living Barns for Livestock**

The objective of living barns is to provide shelter from the elements for livestock. In the summer they can provide shade during a hot day and in the winter they can provide shelter from a cold windy day or a life threatening blizzard.

**Number of Rows:** Three rows or more.

**Row Location:** For a windbreak planted out in a pasture, plant an L shaped windbreak with a row on the north and a row on the west. Locate the windbreak in the Southeast corner of the field as this is where the cows will end up during a winter storm when the wind comes out of the Northwest. You should always talk to the rancher to get their thoughts on the location. If you are going to plant around a feed lot, plant the rows on the north and the west. You may want to plant a tall deciduous tree on the south to provide shading in the summer.

**Species:** A good livestock windbreak would consist of two rows of juniper on the outside rows with one row of Ponderosa pine on the inside row. A tall deciduous tree could be planted in place of the pine. Tall deciduous trees to plant would be Hackberry, Honeylocust, Bur oak, or Siberian elm.

## **Tree Spacing**

**Shrubs:** 4 to 6 feet

**Rocky Mountain Juniper, Eastern Red Cedar, and Pinyon pine:** 8 to 10 feet

**Other Pine:** 14 to 16 feet

**Tall deciduous ( Honeylocust etc.):** 14 to 16 feet

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