

How Wide is Wide Enough?

Over the past 20 years, weed control fabric has become a mainstay in many conservation tree and shrub plantings. The effectiveness of different fabric widths is one issue that needs to be addressed. Many landowners have installed 3-foot by 3-foot pre-cut fabric squares. Although they are readily available and reasonable in price, research has shown they provide little weed control benefit to the tree.

All tree planting practices in Section IV of the North Dakota Field Office Technical Guide refer to the "Tree Care and Management" document. Within this document, specifications state "Individual fabric pieces shall be 6-foot square or 6 feet in diameter."

A 1990 study by McDonald and Helgerson evaluating the effectiveness of different types and different sizes of mulching material states, "Best results appear to be obtained from durable, permeable polypropylene mulches at least 6 feet square for grasses and 10 feet square for sprouting forbs and shrubs. With only a few exceptions, mulches ranging from a few inches to 3-foot



Inadequate fabric weed control

square were too small to keep roots of weeds from growing in from the side, under the mulch, and usurping site resources." A 1988 study by Davies observed, "In each experiment survival or growth or both increased the further weeds were kept from the trees."



Adequate fabric weed control

These studies support what has been observed in a five-year pine study in North and South Dakota. Even though the site had excellent site preparation and the trees were planted in ideal conditions, the 3-foot x 3-foot mats did not prevent smooth brome grass from growing across the prepared site, flourishing along the edges of the mat, and depriving the trees of water and nutrients. So many trees had died by the end of the fifth year that the study was abandoned. Only 25% of the trees in the study survived.

Wider weed control around the plant has proven to be a better choice. The 3-foot x 3-foot mats may be adequate if additional weed control methods (herbicide, tillage, organic mulch, etc) are applied around the mats, producing

an effective weed control of at least a 6-foot width. In the absence of other weed control, use the wider fabric. This may be a good way to get rid of partial fabric rolls.

References

Davies, R.J. 1988. Sheet mulching as an aid to broadleaved tree establishment II. Comparison of various sizes of black polythene mulch and herbicide treated spot. *Forestry* 61(2):107-124

McDonald, P.M. and O.T. Helgerson. 1990. Mulches aid in regenerating California and Oregon forests: past, present, and future. Gen. Tech. Rep. PSW-123. Berkeley, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 19 p.

New Tree and Shrub Species?

Have you ever heard of anyone planting a tree or shrub species that was not officially on the list in the Field Office Tech Guide? If you know of someone who has done that, we are interested in hearing about the success or failure of the planting.



Numerous nursery catalogs are distributed every year. The catalogs are great at extolling the merits of a wide assortment of plant species. Many landowners have ordered and planted some of this material. Unfortunately, some of the plants, though cold hardy, do not withstand the conditions found on the conservation planting sites of the Northern Plains.

A species does not get listed in the Tech Guide until it has been tested for many years on a wide array of sites. For trees and shrubs, this testing period could run 15-20 years. In order to shorten the testing period, we are looking for data on species that have grown well for nearly 20 years or more (even though the Tech Guide says the species "will not grow here" or the species is not listed at all).

We recommend 20-year-old plantings because:

- That is the lifespan requirement of the common tree practices.
- Generally speaking, if the trees are alive and performing well, onsite data could be collected.
- A 20-year-old tree has demonstrated that it can survive many of the environmental conditions of North Dakota.

If enough plantings of the same species are performing well and spread over a wide geographic area, it can shorten the evaluation period before it can potentially be added to the Tech Guide. Generally, we are looking for groups of a particular species (for example, a single silver maple is nice, but a 500-foot row of a 30-year-old planting of 40-foot tall silver maples tells us more about the potential of that plant as a conservation species).

Generally, the information needed is: species, age of planting, size of planting, and the apparent health and vigor. Field offices may be asked to collect data or take photos of the promising species. Those species that have potential will likely be visited by PMC or state staff at a future date.

If you have questions, contact craig.stange@nd.usda.gov or call 701-250-4330 ext. 2.