



Forestry Fact Sheet 08  
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MICHIGAN STATE  
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EXTENSION

## Thinning Red Pine

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### Why Thin A Red Pine Stand?

A forest manager controls the development of a tree stand by removing injured, diseased, or unwanted individuals. This selective removal of tree stems is referred to as thinning.

The trees which remain after thinning should be the best trees. These are the ones which are growing the best, or have the best potential for future growth. These remaining trees are your "crop trees."

Trees grow in response to the amount of competition from other individuals in the stand. As the trees in a stand become more crowded, they all begin to slow their growth. Thinning, because it removes the least productive trees, provides room for the remaining trees to grow more rapidly. If thinnings are properly timed, the stand will have a more uniform growth rate through the years. This will result in greater total wood yields and will shorten the time needed for the trees to become mature. According to an old definition, the object of thinning is to provide the remaining trees with "room to grow but none to waste."

### When Should My Red Pine Be Thinned?

Age alone is not a good indicator of when a stand needs to be thinned because trees grow faster on good sites and slower on poor sites. Here are some rules of thumb—

Thin when:

1. The live crown is less than one-third of the tree's total height, **or**
2. Tree height is more than five times the average spacing, **or**
3. The average tree diameter (in inches) at 4.5 feet (DBH) equals or is greater than the average tree spacing (in feet) (e.g. DBH = 6" and the spacing is 6').

If the average tree spacing is greater than six feet between trees, do not thin before merchantable products can be harvested. If the average tree spacing is less than six feet, a thinning will be needed before merchantable products can be harvested.

### Thinning Method and Intensity

There are several methods of thinning. The one most applicable to a first cut in a Michigan red pine stand is row thinning. Row thinning removes entire rows of trees at a predetermined interval. The first thinning in a woodlot should provide an access system that will be useful throughout its life. The row thinning method will accomplish this.

There are several variations on row thinning that are commonly used. The biggest difference between them is the amount of wood remaining following harvest. If the red pine stand has a average tree spacing of six feet or less, then removals of up to one-half are acceptable. If the tree spacing is greater than six feet, the first removal should not exceed one-third of the existing stand.

Some common thinning variations are: 1) remove every third row, 2) remove every other row, 3) remove two rows and leave two rows, and 4) remove every fourth row with with the selective removal of individual trees in between the cut rows.

Schedule thinnings whenever the stand meets the rules of thumb given earlier.

Although most Michigan red pine stands are in need of a first thinning, some stands are ready to be thinned a second time. The second thinning is a selective thinning in which individual trees in the remaining rows are removed, rather than entire rows. It is at this point that crop trees are selected to carry to when the stand is mature.

### **Thinning Regimes**

Thinning regimes can be customized by a forester to meet landowners' individual needs. For example, where large trees are desired as soon as possible, a thinning regime that cut the smaller trees and left the minimum number of stems per acre would be used. If timber products with quality requirements based upon taper or knot size, such as utility poles, are desired, a thinning regimes that cut both large and small trees and left a medium number of stems per acre would be used. A thinning regime that cut the larger trees and left the maximum number of stems per acre would provide piece products and a long period of time for the trees to become mature.