



## IMPROVEMENT THINNING OF NORTHERN HARDWOODS WHEN SUGAR PRODUCTION IS THE MAIN OBJECTIVE

---

This “rule-of-thumb” guide will work best when an owner or manager is already familiar with some basic forestry principles and can recognize a good actual and potential sugar maple sap producer. Without some understanding of forest growth and dynamics, this guide might actually introduce some problems into the stand.

Basal area (stand density) should not be dropped below 70 square feet per acre (this is the typical low-end density target when managing northern hardwoods). The spacings in this table are based on a simple formula . . . dbh x 1.8 feet. For most stands this will yield final basal area density in the 70 square foot range.

dbh	Spacing		dbh	Spacing
4	8		18	32
6	11		20	36
8	14		22	40
10	18		24	43
12	22		26	47
14	25		28	50
16	29		30	54

When trees of different sizes occur in a stand (like most stands), average the distances for the trees in question. For example, how far about should a 20-inch tree and an 8-inch tree be?

$$(36 + 14) / 2 = 25 \text{ feet apart}$$

Of course, it’s not necessary to get exact distances. The real test is to look up into the tree crowns and make sure the crown has sufficient growing space on all sides (5-10 feet). Thinning can occur gradually over the years, always keeping an eye on the crown closure around your crop trees. Thinned trees can be used for fuelwood stock during the boiling season, or be managed for sawlog production.

Try not to create a stand of pure sugar maple. Encourage other tree species whenever possible. Sugar maple leaves are highly acid when dropped in the fall. Having a mix of fall leaves, especially a basswood component, will enhance soil quality and productivity as well as overall diversity in the stand.