

MARKING BY FRANCOIS MERGEN

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My marking was made with the idea in mind of having another cut 10 to 15 years hence. The objective is to grow both pulpwood and trees for other products. I removed some of the defective and deformed trees at the present time so that these would not serve as a seed supply for future generations.

From a geneticist's point of view, it is rather difficult to mark in this stand because it has been, what you might call, "high-graded" to an 11-inch diameter. The best trees and the most rapid growing trees were removed during that operation. Therefore, the trees of the present stand are those which were initially slow-growers. If during the present cut the smaller trees, let's say in the 4-, 6-, and 8-inch diameter classes are left so that they may come into the canopy later on, one is actually defeating one's purpose if one is aiming at having a rapidly growing growing-stock. This stand is very even aged, so a 4-inch tree has exactly the same age as possibly a 12- or 16-inch tree. So by cutting out all the large trees and leaving the smaller ones, one is lengthening the rotation and thereby giving a chance to these slower growing trees to catch up. Therefore, I marked quite heavily and cut out about 55 square feet of basal area.

Also, with the evidence of heavy wind-throw in the past, which is characterized by the large number of mounds and depressions, there is a good possibility that some of these trees which appear to be in a row originated from a tree which was blown down, and are of sprout origin. I have no evidence that this is so. However should this be the case, it would not make any difference from a genetic point of view whether one leaves a large tree or a small tree. If we are dealing with sprouts which originated from the same stump, one is dealing with trees which have the same genotype. A 1-inch sprout has exactly the same genetic makeup as a 15-inch sprout. By removing the smaller ones during intermediate cuttings and selecting the larger ones for future seed trees, one is not improving the genetic composition of the future stand.

I left most of the larger cherries and the larger soft maples. As Dr. Heiberg mentioned before, I have to agree with him that when Ernie Schreiner first sent me the stand tables, I thought that I would favor cherry quite heavily. But once I saw the stand and looked over the condition of the cherry trees and compared their quality with that of the surrounding trees, I got the impression that soft maple trees are doing as well if not better than some of the so-called high quality trees. If we want to grow a maximum amount of fiber per acre which is apparently the coming trend in intensive management, I feel very much inclined to favor so-called inferior weed species and obtain more rapid growth, which means more tons of fiber per acre. Since pulpwood is one of the objectives of my marking, I left a good number of rapidly growing soft maples. Some of the larger trees will be cut out in the next cutting and they were left now so that they will have an opportunity to grow into the veneer class. I think this about completes my comments.

Discussion

Ehrhart Why do you refer to high-grading here when you can see only the stumps that are left and not the form of the stem which was cut?

Mergen I mentioned the word high-grading because during the previous cut all trees having a diameter above 11 inches d.b.h. were cut out irrespective of quality or form. Therefore, all the best and most rapidly growing trees have been removed from this stand. In a diameter-limit cutting operation which is not flexible, the deformed trees, the diseased trees, and the wolf trees, as well as the best trees, are felled.

Zeedyke Do you go on the assumption that a tree that looks good is genetically excellent?

Mergen No, not completely. This refers back to the same matter I mentioned before about taking chances. If you have a choice between a deformed tree and a good tree you should save the better one as a seed tree. There is plenty of evidence that form, branchiness, and disease resistance is inherited, so why gamble and take chances on a poor individual when the odds are unfavorable?

Bramble Have there been any ecotypic studies with red maple?

Schreiner I believe there was such a study at Cambridge, isn't that correct Hugh?

Raup At the Harvard Forest we had a man who made a study of the behavior of red maple on an array of sites that we had at the forest from the top of one of our hills down through various stages into one of the larger swamps. He found quite a variety in the times at which these maples came out in the spring and when they started their growth, etc. Some of this may have been due to the sites, but he thought, if I remember rightly, that he had sorted out some of the probably inherited tendencies in the local races we have there. We probably have some local races of red maples.

Mergen Was that Chi-Wu's work?

Raup Chi-Wu had something to do with that, but this student was Sam Clark who did the study on red maple. I think Chi-Wu is using some of the ideas that came out of that in part. We have not published on the work of Clark.

Gabriel With reference to Bill's question on ecotypic studies in red maple, about the only one I know of where there has been an effort to collect red maple sources from various places is one that was started about 5 years ago. It is outplanted at the Quabbin Reservoir in Massachusetts. It is not too big, about 14 sources, and the result of that is not as yet forthcoming.