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Is the timing of cleaning important for the suppression of aspen resprouting?

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There is a common belief that late spring is the best time for brush-saw cleaning of aspen from juvenile plantations of pine and spruce. It is thought that immediately after leaf flush root carbohydrate reserves of aspen are at a minimum. In this study we tested if cutting aspen in late May (after leaf flush) will reduce re-suckering and sprouting compared to cutting in late summer or winter. We also tested the effect of leaving different amounts of residual stems.



Nine sets of replicate blocks were established in dense (~20,000 stem ha⁻¹ (sph)) 10-year-old aspen stands. Four were located near Peace River and five near Calling Lake, Alberta.

Each block had 10 plots (50×50m) from which three were cleaned either in late summer, late winter or in late spring after leaf flush. One plot was left as an uncut control. At each cleaning time, one of the three plots was thinned to 1500, 500 or 0 residual sph.

Findings: Timing of cleaning had no effect on the numbers stump sprouts or suckers. However, plots cut in spring had about 20% shorter sprouts and suckers, and less leaf area than plots cut at other times. Root carbohydrate reserves in the juvenile stands were low even before spring, which supports an earlier notion that large amounts of root reserves are used in the late summer and early fall when root growth occurs. However, timing of cleaning did have an effect on the root carbohydrate reserves. After the first growing season only root systems of winter-cleaned plots had recovered their root reserves to control levels.

Leaving residual saplings during cleaning significantly reduced the number of suckers and stump sprouts – up to 40% reduction for 1500 sph residual trees.



Also, root carbohydrate reserves in plots containing residuals recovered more slowly in the first growing season after cleaning than in plots that were completely cleaned.

Implications: There was a slight benefit to cleaning aspen stands in late spring compared to winter, but overall the effects were small. Not cutting all of the aspen stems had some benefit in reducing aspen resprouting but likely not enough to reach usual desired levels of aspen control in these high density stands. As most of the aspen regeneration was from stump sprouting, cleaning might have negative effects on future wood quality of the aspen if they become part of the inventory. Longer-term data will be needed to determine whether of the aspen sprout/suckers will be suppressed or killed by the shading of the overtopping residual saplings.

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Further Information:

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