Hack and Squirt versus Basal-Bark for Controlling Woody Encroachment of Grassland Quail Habitat

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Trees and brush are invaders of grasslands that seriously reduce the value of grassland for grassland wildlife, including bobwhite quail. A small percentage of grasslands should be in colonies of dense shrubs for summer thermal cover for prairie chicken and bobwhite quail broods and hardcore winter cover for bobwhites. Left unchecked, shrubs spread to encompass more and more of the grasslands at the expense of nesting and brood cover. Methods for control include summer, fall, and spring burning, however burning alone is not adequately effective unless done annually, which eliminates nesting cover. Fire may never have solely controlled woody cover because Indian populations were historically quite large and probably could not rely on bison chips alone for campfire fuels.

In order to maintain nesting and brood cover, other means of controlling woody species need to be used. Frequent mowing and broadcast spraying of selected herbicides help, but mowing eliminates nesting and brood cover, while broadcast spraying kills broadleaf plants that are important for insects and seeds for broods and adults. Two methods that work exceptionally well with little collateral damage are basal-bark treatment of selected herbicides and hack and squirt, or frill injection of herbicides. Although considered slow and laborious, these methods are effective and lasting and can affect significant areas with diligence and early recognition of the problem.

We use 1-3 gallon hand sprayers to apply 15-25 percent herbicide solutions in diesel or crop-oil to the lower 6-18 inch of trees and shrubs up to 4-inches dbh. Cost varies from $.50 to $1.00 per tree and is 85-98 percent effective on most deciduous species. Treatment mixes cost $25-$30 per gallon and include 15-percent triclopyr, 3-percent imazapyr, and the rest diesel. Imazapyr settles to a gel in the bottom after a few hours so the hand sprayer is frequently agitated. Any unused material is returned to a storage jug at the end of each day. There is concern that imazapyr can transfer to non-target plants through roots, so this component should be left out of mixes on sensitive sites and the triclopyr percentage should be increased to 25 percent.

Hack and squirt involves making ‘hacks’ into the cambium around the tree and pouring concentrated herbicide into the hacks. A hatchet is modified for the task by grinding the edge to create a 1-inch—1.25-inch ‘tooth’ that creates a cup for the herbicide. Using a hatchet or axe without a ‘tooth’ creates a frown from which herbicide readily drains out before it can penetrate into the cambium. The herbicide mix is similar to the one used for basal treatment except the Garlon 3 is the only triclopyr labeled for the hack and squirt method and water is used instead of diesel for a carrier. I prefer putting the herbicide mix in quart bottles like Tordon RTU bottles. Trigger squirt bottles also work, but the herbicide will often splatter the applicator and imazapyr will eventually dissolve rubber gaskets in the trigger mechanism. A quart of this mix costs about $5. As many trees can be treated per quart with this method as with a gallon of basal treatment mix, significantly reducing the cost per tree treated, especially on trees larger than 4-inch dbh.