



Grazier

► by Kindra Gordon

Combining trees, forage and livestock

At first, the thought of grazing livestock among a timber operation may sound taboo. But when you consider the large forage area surrounding trees, the potential to graze that land and have income from both timber and livestock production becomes apparent.

Win-win relationship

Sid Brantly, a grazing specialist with the Natural Resources Conservation Service (NRCS), calls this type of dual enterprise management a win-win situation.

Based in Alabama, Brantly reports that he is seeing growing popularity in integrating timber production and livestock grazing on the same land. It's a management practice called silvopasture, and it works in regions like the Southeast or Pacific Northwest, where livestock producers may also have good timber-growing and marketing potential.

"Often, a landowner may have both enterprises, timber and livestock, but he runs them on separate land," Brantly says. "By merging the two enterprises together and grazing land used for timber production, the efficiency of both enterprises can be increased."

Jim Robinson, an NRCS agroforester based in Fort Worth, Texas, echoes Brantly's comments, saying research has shown that, with proper management, the economics are there to make such dual systems work. Robinson cites a Louisiana study that reported a 12% boost in rate of return on a silvopasture system compared to a timber site and pasture grazing system that were each operated separately.

But Robinson emphasizes that intensive management is required to make silvopasture systems successful. "Just grazing your cattle in the woods is opportunistic grazing. Silvopasture needs to be planned grazing with a rotational system that manages for the forage, the timber and the livestock."

In addition to the economic advantages, Robinson points out that a properly managed silvopasture system can also produce environmental benefits. For instance, establishing forages among the timber can reduce weed infestations and reduce soil erosion.

Moreover, silvopastures provide an

attractive landscape with an aesthetically pleasing, park-like setting and may also help reduce fuel loads that contribute to fire concerns as well as improve wildlife habitat. "By managing the livestock to produce the desired understory composition, landowners can attract quail, turkey or deer and other wildlife to their silvopasture," he says.

Will it work for you?

If silvopasture piques your interest, the first consideration is to determine if a market exists for the trees. Silvopasture systems can work with conifers and some select hardwoods raised for timber, or even Christmas trees and nut and fruit orchards. Robinson says pine is a popular species to use in the South, and Douglas fir and ponderosa pine are common candidates for silvopasture systems in the Northwest. In the Midwest, pecan and black walnut plantings have also been used.



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When establishing trees for a silvopasture system, Robinson recommends about 200 to 400 trees per acre for conifers, and only about 100 trees per acre for hardwoods. While these plantings are less dense than systems managed solely for timber, they allow for that dual component of income from eventual timber production with short-term cash from livestock grazing.

Typical planting arrangements include block planting of equally spaced trees to optimize growing space and light for both trees and forage; or the linear planting comprised of one or two rows of closely spaced trees with a wider area or alley for the

primary forage production. Both systems will work and are generally applied based on landowner preference, Robinson says.

Trees will need to be pruned regularly to increase light penetration to forages in the understory and to produce quality wood products. "Silvopasture is a management-intensive system, and the objective is to keep both trees and forages producing, so some thinning will be necessary," Robinson says.

He advises trimming trees to a 25%-45% canopy cover for warm-season forages in the understory and a canopy cover of 35%-60% for cool-season forages. "Cool-season forages can tolerate a denser canopy because of their growing time and shade tolerance," Robinson says.

As the tree seedlings get established, livestock grazing will need to be deferred. "As a guideline, we recommend waiting to graze a timber area until the terminal bud on the tree is above what the grazing animal can reach," Brantly says, and, depending on tree species, that may be two to six years or more. But, he adds, if trees are planted in wide rows or group plantings, the forage can be hayed to produce some value while waiting for the tree species to grow.

Once tree species are well-established, Brantly and Robinson say cattle will usually leave the trees alone. "If good forage is available, cattle, especially mature cows, won't browse the trees," Robinson says.

They caution that yearling heifers,



► Typical planting arrangements include block planting or linear planting. Here, linear planting of the trees allows for an alley for forage production.

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stockers or bulls may do more damage to seedlings. Robinson says observation is key. "If silvopasture is a new system for the livestock, watch them closely when you first introduce them to a combined forage and timber area," he recommends. "Make sure they are adapting to it and the trees aren't being damaged."

"Consider scheduling grazing on timber areas before or after the breeding season, when bulls are not with the herd," Brantly suggests.

Robinson adds, "With good management, silvopasture works. You still need proper stocking rates and a planned rotation system

that keeps the animals, forage and trees in good condition. Obviously, if you just dump the cows in and graze it until the forage species are damaged, you'll damage the trees too."

Brantly suggests producers try it on a small scale to start. "I've seen several producers thin a timbered area, seed forages and graze it. Pretty soon, it's a standard practice and they are silvopasturists."

He adds, "Silvopasture does require more management and more knowledge, but it is yet an untapped potential. Producers may not maximize both timber and livestock production with this system, but because

they have multiple enterprises, they are getting more economic and environmental return out of two than they would from one."



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Editor's Note: For more information on silvopasture, visit the National Agroforestry Center's (NAC's) Web site at www.unl.edu/nac/silvopasture.html.