

ONA REPORTS

published in

THE FLORIDA CATTLEMAN AND LIVESTOCK JOURNAL

September 2002

Pine Production from Silvopasture in South Florida

Dr. Rob Kalmbacher, Dr. Ike Ezenwa, and Butch Mallett

University of Florida

Range Cattle Research and Education Center and Florida Division of Forestry



For questions or comments regarding this publication contact

[Dr. Rob Kalmbacher](#)

Silvopasture, the combination of trees and pasture, has received considerable attention worldwide, if not in practice at least from a research standpoint. Unlike forest grazing, which involves natural stands of trees and native forages such as Florida cattlemen have been doing for generations, silvopasture is the deliberate combination of planted trees and forages and their management for multiple products. There may be several advantages of silvopasture over raising trees or cattle separately including diversification of income with returns from timber, cattle, and wildlife, and perhaps greater profitability. Although timber may be reasonably profitable in north Florida and the rest of the Southeast, the situation may be quite different in central and south Florida. Pine growth in our region is limited by our flatwoods soils, and we are far from markets for wood products. While marketing issues can change, the potential to produce timber or cattle is basically a fixed function. We felt it was important to commit to a long-term project to determine how much wood and beef could be grown together on silvopasture in central and south Florida.

In December 1991, bare-rooted, south Florida slash pines were planted in a 40-acre Pensacola bahiagrass pasture at Ona. We planted 450 trees/acre in double rows, 8' apart with 4' between pines in the row. Double rows were 40' apart, and this provided sunlight needed to maintain the grass and provide grazing. Cattle were kept off the pasture for 14 months after planting. We made the decision at the start that we would minimize the period of deferment of grazing because we intended to operate with the same constraints as a rancher who needed to make a return on his land. Beginning in March 1993 (and every year since), 50 to 60 cow-calf pairs were rotated off native range onto the 40-acre silvopasture. Cows were rotated between this and another 40 acre bahiagrass pasture until late September of each year.

In March 2002, 11 years after planting, pines averaged 28' tall, and there were 200 trees/acre (44% survival). We knew that grazing at 14 months after planting pines would reduce tree survival, but due to inexperience we made other mistakes which affected pine survival, such as grazing during the March to May breeding season. During this time we had limited grass, presence of bulls, and molasses supplementation which further reduced tree survival.

Actual measurement of pines in 2002 indicated there was 1.8 cords/acre. On-site commercial value of the pines, based on \$2/ton for pulp and fence posts (2.8 ton/cord) is currently \$10/acre. Using production curves for slash pine in south Florida, pine production was projected for 15 and 20 years after planting. Using the above value for pulp, \$17.50/ton for chip and saw, and \$25/ton for veneer, pines will have an in-field value of \$60 and \$400 in the year 2006 and 2011, respectively.

Our silvopasture has been stocked at an average 1.2 cows/acre, and we have had a 76% weaning rate with calves averaging 450 lb at 230 days of age. During the first 11 years, there has been little effect of the trees on forage and cattle due to shading. As indicated earlier, the cattle have impacted the trees (44% survival) more than the trees have affected the cattle. Now in the next 9 years, the situation may be reversed because trees may reduce the carrying capacity of the pasture. To off-set this, we will thin pines this winter on 20 acres keeping only the dominant trees (125 /acre). This should help maintain grass and calf production while maintaining higher-value veneer trees. On the other 20 acres, we will graze without thinning pines, and at 20 years compare calf production and timber value on thinned and not thinned stands.

Although the present day value of our pines does not seem encouraging, ours is a worse-case situation reflecting our mistakes and depressed timber market values. If the trees do not seriously limit the carrying capacity of the pasture during the next 8 years and timber prices improve, then revenue from cattle plus pines could make it interesting. Not considered is the improvement in wildlife habitat created by the pines, and it is very difficult to put a dollar value on this.