



Fall 2006

Don't Delay - Reforest Today!

By Tim Albritton, State Staff Forester, USDA-NRCS, Auburn, AL

Delaying reforestation because cost-share is not available is not a wise financial decision. In a recent study in Virginia, the financial impact of delaying reforestation for one-year versus prompt reforestation with or without cost-share was explored. Three cases were developed and analyzed:

1. Prompt reforestation with cost-share
2. Prompt reforestation no cost-share

3. Delaying reforestation one-year with cost-share

In each case, all site variables were the same: site index 60, southern piedmont loblolly pine plantation, site prepared and planted, 600 trees per acre were planted, two thinnings prior to final harvest, and rotation length 35 years.

The results show that prompt reforestation with and without cost-

share achieve better financial results than reforestation with cost-share delayed one year. The key factor in the equation is the increase in establishment costs. Stand establishment costs usually increase proportionally up to three years after a harvest. A landowner's best financial result will be achieved with prompt reforestation during the planting season immediately following a harvest.

Table				
CASE	NPV (\$/ac)	LEV (\$/ac)	EAE (\$/ac)	IRR (\$/ac)
Case 1. Reforestation without c/s	470	540	32	10.5
Case 2. Reforestation with c/s	518	595	35	11.6
Case 3. Reforestation with c/s delayed 1 yr	354	404	24	8.8

Results for Case 1 & 2 are comparable since the investment horizons are of equal length; but Case 3 is one year longer and adjustments must be made before it can be compared directly with Case 1 & 2. Use LEV and EAE to compare results among the three cases since these criteria have a common investment horizon – infinity.
 Net present value (NPV), land expectation value (LEV), equal annual equivalent (EAE), an internal rate of return (IRR) for reforestation scenarios with and without cost-share.

This is a summary of the article entitled: "Reforestation in the Absence of Cost-Share: Does It Pay?" Published in the September/October 2003 issue of **Forest Landowner**.

Calendar

- Nov 27, 2006** - Inter-agency Waste Management Team Meeting, Auburn, AL
- Dec 6, 2006** - Soil, Stormwater, and Watershed Protection: Tools for Managing Erosion Workshop, Delta Resource Center, Spanish Fort, AL
- Dec 10-13, 2006** - Third National Conference on Grazing Lands, St. Louis, MO
- Jan 17-18, 2007** - RC&D National Conference on On-Farm Energy Audits, Huntsville, AL
- Jan 24, 2007** - Quarterly Meeting Wiregrass RC&D
- Jan 25, 2007** - Conservation Tillage Workshop, Dothan, AL
- Jan 25, 2007** - Quarterly Meeting, Alabama Mountains, Rivers, and Valleys RC&D
- Jan 27, 2007** - Tri-State Forum (FL, GA, AL) Houston County Farm Center, Dothan, AL
- Jan 31, 2007** - Tennessee River Basin Clean Water Partnership
- Feb 1, 2007** - Conservation Tillage Workshop Wheeler Wildlife Refuge Visitors, Center, AL

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Thinning Pines: Dollars or Sense?

By Joel D. Glover, Certified Wildlife Biologist. Alexander City, AL

Many times I have met with landowners who, while discussing the management of the timber on their property, have made a statement to the effect, "I know I'll never see any return from it in my lifetime." I believe there may be several reasons why landowners would make such a statement. One reason may be the fact that the majority of landowners I meet with are 50 years of age or older. However, this fact would not be such a factor except for a widely held misconception that it takes a lifetime to grow a stand of timber. Many people are simply relying on their experience of observing their family or other landowners who did little, if any, timber management on their property. I have had several landowners tell me they would just allow the timber to regenerate and grow naturally like their parents did, and then their children can cut it in 50 years like they did.

Fortunately, many landowners have now made the transition to replanting harvested areas rather than allowing unmanaged, natural regeneration to take place. This is a giant step in the right direction; however, landowners need to understand that proper management of these planted pines will afford them many benefits.

Landowners must realize that many of the benefits they can achieve are not financial in nature. Landowners must realize that you should thin pines for both dollars and sense.

A normal loblolly pine plantation in Alabama will contain from 400-700 seedlings. However, at maturity probably less than 100 saw timber sized trees will remain. The paring down of the number of the trees in the stand can be handled by Mother Nature or by the landowner. If nature is allowed to take its course, then the weaker trees in the stand will eventually succumb to competition and die. The larger dominant trees will then respond to the increased amount of nutrition and light available and will increase in diameter. Before you know it, in 50 years or so, the landowner, or whoever is surviving, will have a stand of saw timber-sized trees. Although this method is often employed, it is loaded with pitfalls. First, the weaker trees that die offer basically nothing but hazards to the landowner. The weak, slow growing crowded trees prior to death are an invitation to infestation of southern pine beetles (SPB), the most destructive insect pest in Alabama.

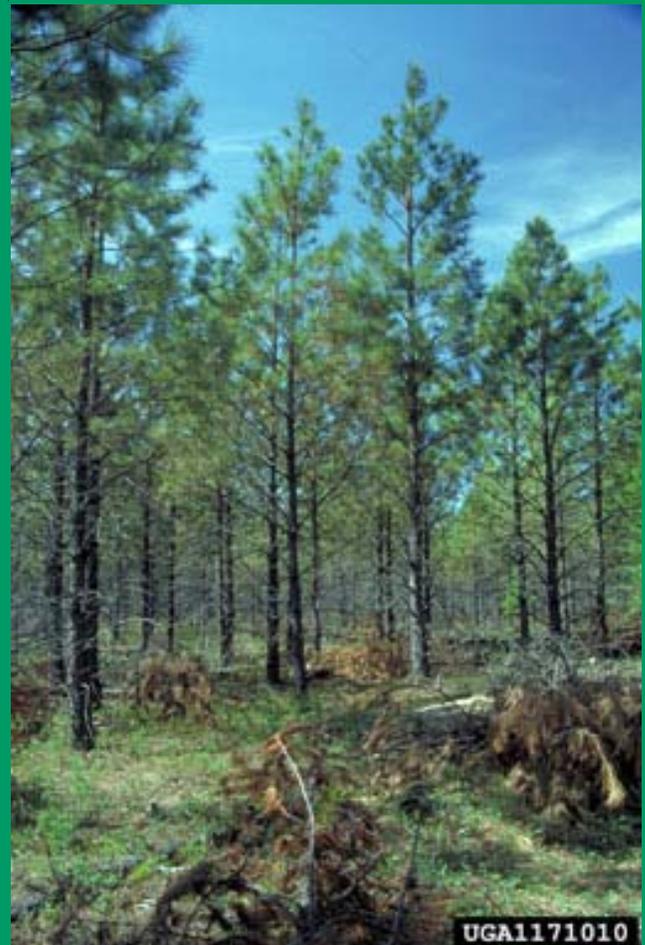
Many foresters actually describe such a stand as "beetle bait!" If a

stand escapes a SPB infestation, it is still in danger. Once the trees die and fall to the forest floor, they contribute to the build up of hazardous fuels. This condition is ideal for wildfire that can damage or destroy the stand.

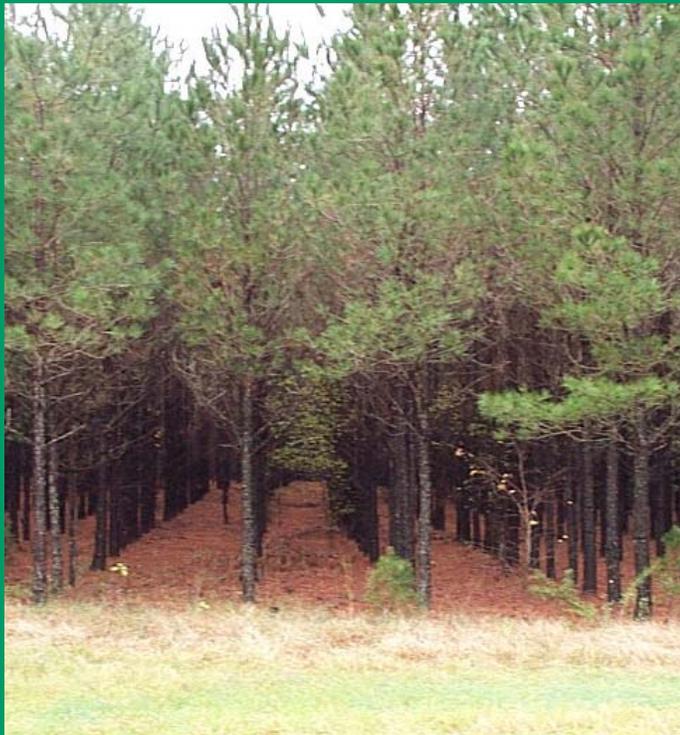
Normally, in an unmanaged stand, crown closure is reached rather quickly. The crowns of the trees grow into one another and effectively block the sunlight from reaching the ground. This

results in a forest floor that is basically devoid of any beneficial wildlife food plants. Lastly, allowing nature to take its course on a stand equates to the landowner receiving no monetary return from the stand until the final harvest.

On the other hand, a landowner can decide to actively manage the trees. This means that around the age of 12 to 15 years, depending on the site index, live crown ratio and/or basal area of the stand,



Residual pine trees respond to the increased light



Dense pine stand before first thinning



Same stand one year after first thinning

the landowner will have a first thinning. Thinning is simply the removal of certain trees from the existing stand to reach an objective. **Removing trees that have diseases, poor form, or slow growth releases nutrients that can be put to use by the remaining fewer, faster growing trees.** Thinning should be performed early in the life of the stand since height growth, vigor, and the ability of the crown to expand declines with age. Vigorous tree growth promotes a natural resistance to southern pine beetles. Following a thinning with prescribed burning at regular intervals will remove hazardous fuels, return nutrients to the soil, deter the growth of hardwoods, protect stand from wildfire, and promote the growth of beneficial wildlife food plants. With these practices in place,

the landowner has moved from growing trees to actively managing trees. In addition the weaker, crowded trees are turned into income for the landowner.

These multiple benefits are normally enough to get a landowner interested in thinning their pines. They understand the “why” but are still somewhat confused about the “when” and “how.” Terms such as site index, live crown ratio, and basal area are often lost on the majority of landowners. Site index is a measurement of the height pines will grow on a particular site in 50 years. Live crown ratio is the percentage of the length of the stem that has live branches. Basal area is a measurement of the number of square feet of trees per acre. Now, do

your trees need thinning?

If you still don’t understand, then you are in the same category as most forest landowners. This is a great time to consider using the services of a registered consultant forester. Alabama Forestry Commission (AFC) foresters can provide excellent advice on forest management, and I highly recommend them; however, they cannot handle a timber sale for private landowners. I agree with the AFC when they recommend that you use a registered consulting forester to handle your thinning. These resource professionals can explain the significance of and determine the site index, live crown ratio, and basal area of your stand of trees. They understand local wood markets and other factors that influence the value of a timber stand.

They can inventory and mark the stand, contact and solicit bids from potential buyers, develop a harvest contract to protect your interests, advise landowners as to what type of thinning method should be used, and oversee the thinning operation for satisfactory performance. Their job is to work for the landowner. It is in their best interest to get the best possible price while keeping the landowner’s objective in mind. Consultants may charge a percentage of the timber sale income, a flat per acre fee, or some other compensation arrangement. However, studies have shown that using a consulting forester often results in higher revenues.

Let’s say that after listening to the many great advantages of thinning a pine stand espoused by

both the wildlife biologist and forester, the landowner takes the professional's advice and contacts a consultant about having the stand thinned. He explains to the consultant that he wants to improve and accelerate the growth of his timber and improve the wildlife habitat on the tract. The consultant agrees that a thinning followed by a prescribed burning regime will do just that, and the plan is set. The consultant receives bids for the timber and shares them with the landowner, then things come to a screeching halt! The landowner is insulted by the price that isn't half as much as his brother-in-law had received for a thinning only 6 years ago. His first impression is that he'll just hold on to the trees before he will practically give them away. And now he is back to growing trees instead of managing trees.

Unfortunately, in this time of low pulpwood prices, this scenario is played out frequently. I understand that after having paid for site preparation and planting and investing 12 to 15 years in a stand of timber, it goes against the grain to "practically give the wood away." However, in this time of low prices, it is time to think long term. Landowners need to understand that you thin for management and not necessarily for profit. A properly performed thinning by a reputable crew done at the proper time can change the amount of wood that will grow to become more

valuable timber down the road. These trees will increase in value as they move from pulpwood to chip-n-saw and eventually to saw timber. Although your thinning may produce little revenue, you are setting the stage for a lucrative final harvest, benefits from a healthy stand, and improved wildlife habitat along the way. As a matter of fact, a Georgia study showed that if a landowner received no income from a first thinning, the final rate of return would be greater than if the landowner did not thin the pine stand! That's not mentioning the many other benefits of thinning that we have earlier documented.

Hopefully, we have made the case for thinning and burning your pines early and often. The inspiration for this article was to promote the idea that you "thin for management and not only for profit." However, there is now yet another incentive to persuade landowners to thin their pine stands. Beginning in 2006, the Environmental Quality Incentive Program (EQIP), administered by the Natural Resource Conservation Service (NRCS), developed a new resource concern for forest health. The forest health concern, among many other things, promotes the thinning of both pine and hardwood. Thinning in pine stands is promoted through the payment of a cash incentive to qualified landowners who will thin their pine stands to a basal area of 40 or 60 sq. ft. and

place the property on a prescribed burning program. Reducing the pine stand to these basal areas, coupled with regular burning, will provide good habitat for many wildlife species. Landowner's properties are evaluated based on several factors and practices are funded on the highest-ranking properties.

Now, what is your excuse for not thinning your pines? In my way of thinking, there are many benefits and very few drawbacks. Thinning promotes a healthy stand that will become more profitable at a quicker pace. It helps protect against insect damage, and when coupled with burning, helps prevent wildfire damage. The combination of thinning allows sunlight to reach the ground and the burning returns nutrients to the soil, scarifies seeds, and controls hardwood encroachment yields for a much improved wildlife habitat. And now there is even the possibility of cost-share assistance to implement the thinning. On the other hand, I saw many thinned stands that took it tough due to hurricanes. No practice is without some risk, but when placed on the scale in my mind, thinning wins every time.

Thinning a pine stand is more than simply removing some of the trees. There are many methods of thinning which give varying results. William Gardner, a forester with the North Carolina Extension Service, hit the nail on the head when he

"Thinning promotes a healthy stand that will become more profitable at a quicker pace. It helps protect against insect damage, and when coupled with burning, helps prevent wildfire damage."

said that not all partial cuttings are thinnings, nor are they all good investments. "Cutting the best and leaving the rest" or "leaving those small (young?) trees to grow" is "high grading" not thinning. Proper thinning requires that an adequate stand of "crop" trees remain. Consult a registered forester and look into thinning your pines. Initially, it may not mean a lot of dollars, but it makes a lot of sense!

If you are interested in finding a consulting registered forester, contact your local AFC office at www.forestry.state.al.us. They maintain a list of foresters that work in their county. The AFC will also provide free management advice. If you are interested in applying for cost-share assistance, you should contact your local NRCS district conservationist. The service center in your area can be located at www.al.nrcs.usda.gov.

Get started thinning your trees today. You're not getting any younger!

Working Trees Could Add to Your Profit Margin

by Tim Albritton, State Staff Forester, USDA-Natural Resources Conservation Service, Auburn, AL

Diversification is the name of the game. One expansion concept that Alabama cattle producers might consider is silvopasture. Private cattle producers and forest landowners who combine timber, forage, and livestock into one production system increase the benefits they might receive from their land compared to management for just one of these commodities. This intentionally integrated and intensively managed system, known as silvopasture, can diversify revenue, enhance environmental benefits, and boost aesthetics of agricultural or forestry operations.

For years, Alabama cattle producers have allowed cattle to graze in woodlots. Woodlot

grazing relies on native forages, where there may or may not be any real forage available to the cattle—the cattle just glean the existing vegetation. Silvopasture, on the other hand, is different in that the land is intensively managed for both improved forage and timber.

Establishing a silvopasture system requires a number of management steps, depending on previous land use. Perhaps the easiest way to start the system is to plant trees in an existing improved pasture. Another possible scenario is to thin an existing pine plantation and establish forage species among the remaining trees. A third option is to convert cropland to silvopasture

and plant both trees and forage crops.

Silvopastures can be established on any land capable of simultaneously supporting tree and forage growth. No matter how the land was previously used, there are several considerations to be determined in establishing silvopasture. When making tree and forage crop selections, consider potential market for the timber, the soil type (will the selected trees perform well in the soil), climatic conditions, and species compatibility. Selected trees should be marketable, high quality, fast growing, and deep-rooted. Consider the planting/harvest patterns. Select and use trees and planting/harvesting patterns that are suitable for the site, compatible with planned silvopasture practices, and provide desired economic and environmental returns. Establishing a silvopasture system within a timber operation can be convenient and effective. For some Alabama timber producers, a typical timber management cycle involves site disturbance prior to replanting after a clearcut. This may be a good opportunity to convert the land to silvopasture.

The forage component of the silvopasture

system should be a perennial crop that is suitable for livestock grazing or haying, compatible with the site (soil, temperature, precipitation), productive under partial shade and moisture stress, and responsive to intensive management.

Silvopasture provides multiple benefits to landowners. If managed properly, trees in a livestock operation can reduce stress on the cattle, while at the same time allow adequate forage production. Furthermore, by adding trees to forage systems, a landowner can receive additional income on the same land from timber products, Christmas trees, nut/fruit crops, or from commercial wildlife or recreational opportunities.

Wildlife habitat is a benefit that Alabama landowners should not overlook. Minor modification can be made to silvopasture management to greatly improve its value for wildlife, while still retaining most of the timber and forage production potential. A side benefit to a silvopasture system is aesthetics. A well-maintained silvopasture system is very pleasing to the eye. It's a pretty sight to see cattle grazing amidst a well-managed stand of pine. Silvopasture is an alternative concept for a producer who prima-



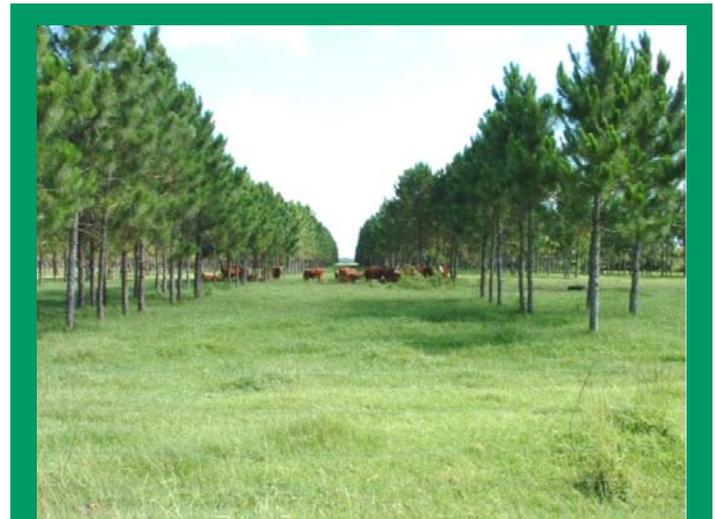
Planting trees within an existing pasture is one way to establish a silvopasture system.

rily focuses on either cattle or timber.

One might think of the concept as working trees. A silvopasture system uses the same land to produce both forest and agricultural products, while at the same time conserving natural resources. Using working trees simply means planting the right trees, in the right place, and in the right design to get a specific job done. “A successful silvopasture system requires understanding forage growth characteristics and managing the timing and duration of grazing to avoid browsing of young tree seedlings,” says Eddie Jolley, NRCS Agronomist. “Light is a key component. Both trees and forage need adequate light to thrive. In a silvopasture system, the trees are planted in rows and pruned. Pruning accomplishes two benefits—it allows adequate light for forage growth

and it helps create high quality sawlogs. The space between the rows is then intensely managed as pasture for the cattle. Any good cattle producer is used to managing the forage. Silvopasture adds one more potential economic advantage to that management concept.” Jolley says, “The key to improved cash flow of silvopastures is the annual income derived from forage and livestock, which supplements long-term, periodic income from timber sales. The goal in silvopasture systems is to optimize production of all three components— forage, cattle, and timber—rather than maximize on only one product.”

According to Zona Beaty, NRCS coordinator of the Environmental Quality Incentives Program (EQIP), “Cost share assistance through the EQIP program is available to encourage pro-

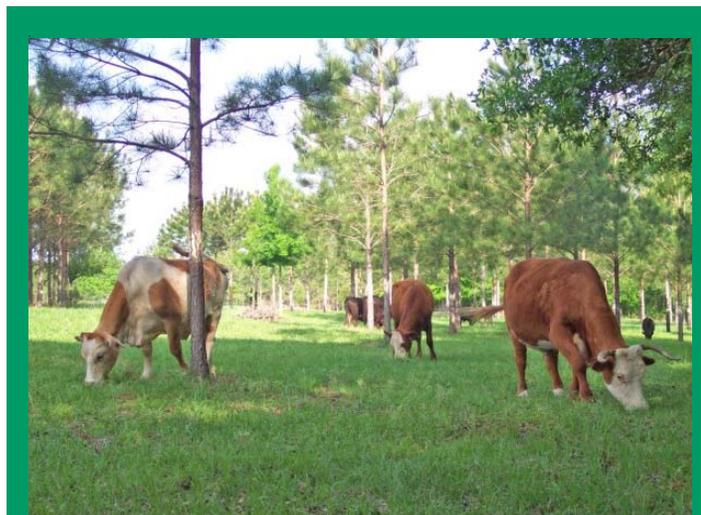


Aesthetics is an added dimension to a silvopasture system. Cattle grazing among trees is a pretty sight.

ducers to install silvopasture systems. Funds are available for all scenarios—help with tree planting, grass planting, cross fencing, and livestock watering systems to convert cropland, planta-

tion, or pasture to a silvopasture system.”

A silvopasture system could become an important economic component for your cattle operation.



Silvopasture system management and understanding forage growth characteristics and managing the timing and duration of grazing is important.

Irrigators Pocket Guide

Alabama NRCS is working with the National Center for Appropriate Technologies to develop and print an *Alabama Irrigator's Pocket Guide*. *The Guide*, sized to fit in a pocket or on the dash board of a truck, should be a valuable tool for those involved in irrigation.

The book is divided into two parts. One part is for *Water Management* and focuses on conserving and protecting water, soil, energy, and other natural resources, as well as providing information on soils, water application and crop needs, efficiency of irrigation system, and water quality. The *Equipment Maintenance* part of the book gives specific instructions for keeping irrigation systems running properly. Topics include recommended installations, pumping plant maintenance, distribution system maintenance, and saving energy.

After printing, the Guide will be available to field office staff and a supply will be available for cooperators in the state who are involved with irrigation. The Guide should be a very useful field tool for NRCS field personnel and cooperators.

Temporary Storage of Poultry Broiler Litter Study

In Alabama, when making a nutrient management plan for using poultry litter, it is not practical to plan each nutrient application with fresh litter, nor is it practical to plan the immediate use of all the litter as soon as it is cleaned from the houses. Usually, some type of storage is included in the nutrient management planning process. While dry stack structure storage is the method of choice, many situations call for a more temporary (and cheaper) method of litter storage. The question is often asked can the litter piles remain uncovered for short periods of time without harm to the nutrient value

of the litter or to the environment. This article describes a study that was conducted to determine the effects of litter treatment on covered and uncovered piles of poultry litter exposed to the weather in central Alabama from December 2004 through May 2005. Also studied was a claim that coned piles will naturally shed rainfall and allow for short-term field storage without covering.

The study was conducted by Charlie Mitchell, AU Department of Agronomy and Soils; Allen Torbert, USDA-ARS Soil Dynamics Laboratory; and Ted Tyson, AU Department of Biosystems Engineering.

The objectives of the study were to:

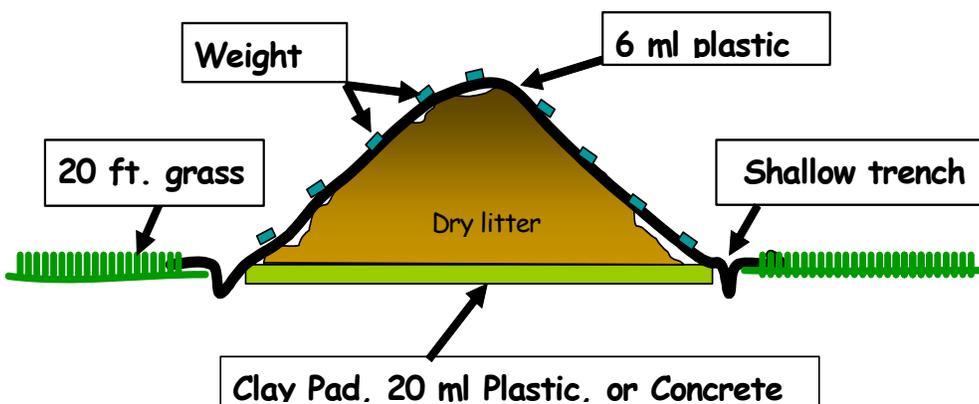
1. Evaluate conventional and alternative methods of temporary field storage of dry poultry litter on litter quality and potential runoff and leaching.
2. Demonstrate to local producers the benefits and/or problems associated with temporary winter storage.
3. Encourage the transportation, proper storage, and use of litter in areas where litter has traditionally not been used.

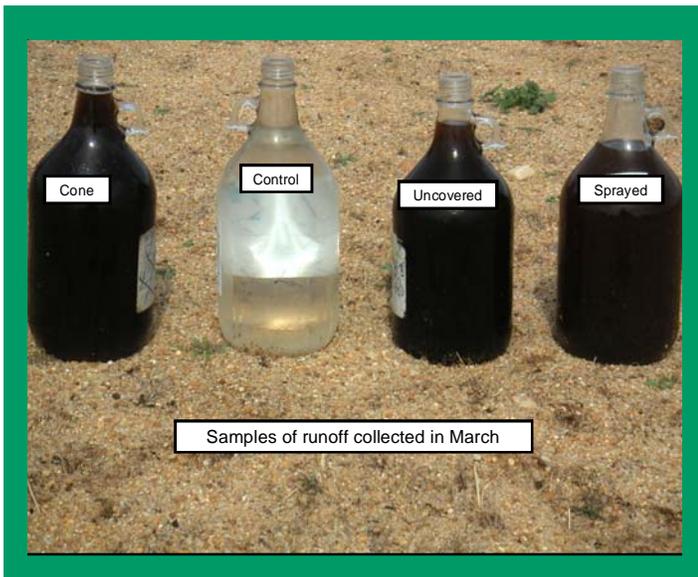
“Exposed piles, regardless of shape or treatment, absorbed rainfall during the first few weeks and resulted in excessive nutrient runoff”

Mini-piles of dry poultry broiler litter were placed inside wooden frames designed to collect all runoff and leachate. The frames were lined with 6-mil polyethylene with a drain attached at the lower corner to collect runoff. Each pile contained 140 kg (308 lb) of dry litter. In addition:

- Electronic moisture sensors were placed near the surface and near the center of each pile to monitor moisture.
- Runoff was collected after each rainfall event from December 10th until May 10th and analyzed for ammonium, nitrate, and total P.
- Litter quality was determined at the beginning and at the end of the storage period.

USDA-NRCS Guidelines for Temporary Field Storage of dry poultry litter





Moisture within the piles, runoff, and litter quality were monitored. From the very first rainfall event, it was apparent that none of the exposed piles would shed water. Exposed broiler litter absorbed moisture like a sponge! Exposed piles, regardless of shape or treatment, absorbed rainfall during the first few weeks and resulted in excessive nutrient runoff (N and P) during the rest of the 6-month storage period. While nitrate-N in runoff was relatively low, mean ammonium-N and P concentrations in runoff were high from all of the exposed piles of poultry litter. Litter quality deteriorated rapidly in all exposed piles.

should not be left exposed to rainfall, even for short periods of time. Rainfall is rapidly absorbed into the exposed litter resulting in degradation of the fertilizer value of the litter and potential nutrient runoff. Current USDA-NRCS guidelines for temporary litter storage seem adequate to protect both litter and surface water quality. This test is being repeated in a demonstration using larger piles more typical of what producers will experience. Results to come later.

This test demonstrated that poultry litter

This project was supported by the Alabama Mountains, Rivers and Valleys Resource Conservation and Development Council.

The different treatments for the test piles were:

1. Polyethylene covered. Standard recommended practice (see figure) using 6-mil polyethylene for cover (not replicated, no runoff expected).
2. Western Hay Gard® covered. Same as above, but covered with a heavy duty, breathable, water-resistant fabric (not replicated, demonstration only).
3. Uncovered pile. The worst way to store litter. Litter is dumped on the site and left with a somewhat flattened top (four replications).
4. Cone shaped pile. An uncovered pile that is purposefully shaped into a cone to shed as much water as possible, sometimes called the “Delaware Cone” (four replications).
5. Latex polymer sprayed-on. A cone-shaped pile sprayed with a commercially available polymer and allowed to dry (four replications).
6. Control. An empty frame that collected runoff water and any dust or particulates that blew into the area (four replications).

