

THE USE OF ANNUALS IN VIRGINIA'S FARM GAME PROGRAM

By WILLIAM P. BLACKWELL

District Game Biologist

Virginia Commission of Game and Inland Fisheries

In the southeastern states farm game projects have gained major importance in Pittman-Robertson programs since the close of World War II. The projects throughout this region have at least one thing in common, namely, bicolor lespedeza. Most of the states have a rubber stamp recommendation for quail management which is the planting of bicolor and serica lespedezas, and in late years, multiflora rosa. The combination of these plants seemed, eight years ago, to be our panacea for quail management problems. We were told these multiple purpose plants would stop soil erosion, improve land, stop woods encroachment into croplands, provide a turnrow for machinery, produce a heavy crop of seed which would be dropped slowly through the winter and thereby guarantee quail a source of quality feed even during periods of prolonged snow. We were told that these plants would grow well on that strip of land between crops and woods where crops ordinarily produce little or nothing. Armed with this meager knowledge and an almost inexhaustible supply of bicolor and serica, the farm game biologists of the Southeast launched themselves into an enormous campaign to sell these management tools to the farmers of their respective states, and end forever the food and cover shortage for quail. The race was on, bicolor nurseries were established, production and distribution grew in a matter of a few years into the millions of plants which were delivered in wholesale quantities to the farmers.

Virginia was swept along, with others, on this tidal wave of bicolor popularity, but apparently our project differed in one respect from the other states of the Southeast. Since the inception of the farm game project in 1948, Virginia has included the use of certain annual seeds which for years had been used successfully in game management work on our state forest lands. The most popular seed furnished in our project has been the annual game bird mixture which includes soybeans, cow peas, German millet, brown top millet, milo, rape, buckwheat, and Korean lespedeza. The latter, of course, will reseed itself for three or four years. In some few instances where the planter was primarily interested in turkey or deer he was furnished with combine milo. Thus the 1948 biologist in Virginia was selling bicolor and serica for use on areas that could be permanently devoted to wildlife, and as a relatively minor part of the program the annual mixture and milo were made available for use on locations that could not be permanently set aside for game.

In the beginning farmers were a bit skeptical about planting anything that grew as tall as bicolor and had a woody stem, but when assured that it absolutely would not spread, it was planted on many farms throughout Virginia. Subsequent visits to these farms by our biologists showed us that a relatively small percentage of the bicolor was being planted according to our specifications. Those cases that were properly planted were, as a rule, not making the growth and producing seed as well as we had told the farmer it would. These were high priced plants and their failure to produce the desired results was a great disappointment to us. Our selling program did not let up but the farmers became increasingly hesitant about planting bicolor plants and within a few years the demand for plants had largely shifted to bicolor seed. This change from plants to seed resulted in a material saving in the cost of producing and handling and since every farmer knows how to properly plant seed it was found that he did a much better job that he had ever done with plants.

It is of interest to review the experiences that we have had in demand for seeds and plants over the past eight years in Virginia:

<i>Year</i>	<i>Bicolor Plants</i>	<i>Bicolor Seed</i>	<i>Serica Seed</i>	<i>Annuals</i>
1948	825,000	1,800	5,575	10,000
1949	575,000	2,700		8,000
1950	1,122,000	2,100	2,970	13,900
1951	1,872,000	2,500	8,700	20,200
1952	1,719,000	3,500	10,000	29,000

<i>Year</i>	<i>Bicolor Plants</i>	<i>Bicolor Seed</i>	<i>Serica Seed</i>	<i>Annuaals</i>
1953	828,000	4,200	9,200	39,000
1954	127,000	3,900	8,700	43,500
1955	22,000	3,300	9,600	49,300

In 1948 there were only two biologists assigned to the farm game project and they distributed 825,000 bicolor plants. The following year, 1949, saw a failure in our bicolor nursery project and a shortage of plants resulted in a total distribution of only 575,000 plants by four biologists. This plant shortage probably was a prime mover in our gradual conversion from plants to seed. The following three years, 1950, 1951, 1952, found our plant distribution between one and one and three-quarter million annually. Since 1925 the demand for plants has declined sharply to only 22,000 last spring. *Serica lespedeza* has always been recommended as a cover plant and in this capacity the demand has remained fairly constant over the past few years at near 9,000 pounds. The most remarkable thing about our project is the continued increase in demand for annuaals from a start of 10,000 pounds in 1948 to almost 50,000 pounds in 1955.

The continued increase in demand for annuaals reflects the faith and satisfaction of the people who plant it. Over the years there continues to be a very high percentage of "repeats" on our county lists of cooperators. We feel that this is a very healthy condition since they would not continue to plant annuaals year after year unless they were obtaining the results that we claim and they expect.

We are all cognizant of the advantages of perennials over annuaals in a farm game program but at this time we are not getting the results that we desire from our present perennials. Studies conducted over a six-year period in Virginia by Mr. George Gehrken on 14 demonstration farms planted extensively with bicolor lespedeza showed no measurable increase in quail. We have been able to demonstrate that quail can be substantially increased on areas planted with annuaals. This fact was well illustrated on Hawfield, a 2,800 acre farm, where quail were increased from 15 coveys in 1949 to over 64 coveys in 1953. This increase in quail can be attributed only to habitat improvement with annuaals since no restocking or predator control was undertaken during this time. Hawfield is one of the only cases in which we have carefully kept records to substantiate the facts but there are other instances known to all our farm game biologists where similar results have been achieved with annuaals. The latter part of August we were attempting to evaluate the damage done to our quail by hurricanes Connie and Diane. One of our biologists was making a census of the annual food plots on the Cumberland State Forest. In the first six plots he found seven coveys of quail. Before the day was over he found ten coveys, three pairs and one single, and found fresh scratching and droppings in four patches where no quail were found while making the census of twenty-three patches. This was done on an area where the quail population is not considered high.

COSTS OF BICOLOR

The feature more often criticized about an annual program is the cost. We do not feel that this criticism is justified.

There are many of you here in this room that are better qualified than I to give a cost figure to buy or produce 1,000 bicolor plants. We roughly estimate this cost to be \$3.00 to \$5.00 per thousand. In Virginia we distribute plants by truck from our nursery to the county in which they will be planted. The plants are lifted, loaded, transported and heeled in at a central point in each county. Then they must be again lifted, loaded, transported and heeled in on the farm where they will be planted. With the size plants we use in Virginia only about 200,000 can be transported on a ton and a half truck, while this same truck can easily handle five tons of seed. To draw another comparison a truck load of bicolor plants will plant 200 one-eighth acre patches while a truck load of seed will plant 3,333 one-eighth acre annual patches. In transportation alone there is great additional expense in a program using plants.

In one or more states in this region there has been a near one hundred percent follow-up on the planting materials distributed and it was found that from

80% to 85% of the bicolor was never removed from the heeling-in bed on the farm where it was delivered. If this is true, then only two in ten patches are ever planted and we are all aware that not every patch is a good one. We will not attempt to place a cost figure on each good bicolor patch for no matter what this figure might be it would be very high and also very controversial.

COST OF ANNUALS

The average price for the annuals used in Virginia over the past eight years has been eight cents per pound for milo and thirteen cents per pound for the annual mixture. These seeds are bought in bulk and bagged by our own labor into two- and three-pound bags which is the correct quantity to seed a one-eighth acre plot. In each bag is enclosed a set of planting instructions. Our records show that we can deliver to any county in Virginia a two-pound bag of milo for seventeen cents and a three-pound bag of mixture for forty cents per bag. We feel we can be most conservative and state that we can furnish a bag of annuals each year for ten years for less than the cost to deliver 1,000 bicolor plants to a farmer.

LIFE EXPECTANCY OF PLANTINGS

It is generally assumed that bicolor will live and produce for an almost indefinite number of years after it is established. We do not find this to be the case in Piedmont and Tidewater Virginia. In these sections of the state most of the land taken out of cultivation or away from grazing for a period of five years will revert to, or volunteer in honeysuckle. In most cases this invasion of honeysuckle is well under way by the fourth or fifth year after a bicolor border is established and by the eighth year the border is almost completely wiped out and its seed producing ability is reduced to almost nothing. We believe that the entire cost of this bicolor border must be amortized during its productive years, which would average four or five.

Our annual mixture which contains roughly 10% Korean lespedeza will reseed itself with Korean for a variable period ranging from three to five years.

UTILIZATION

In Virginia we find bicolor is used principally by quail and rabbits and does not benefit other species of game. Our annuals are utilized by quail, rabbits, turkey, dove, deer, and many songbirds.

Bicolor in Virginia is utilized most during January, February and March. Our hunting season opens November 20 and closes January 20 and during this time our hunters find very few quail using bicolor and find very little bicolor seed in the crops of the quail they kill. The annuals, however, are heavily utilized from September until Spring and the hunter finds many birds in or near these plantings and finds many of the quail crops full of the annual seeds. Nothing that any of us can say will sell any type of feed as quickly or as well as the quail itself. When a man plants these patches and can see results, can find game using them, you do not have to worry, he will plant again next year.

PREFERENCE

On an average farm where crops of corn, small grain, and hay are grown there seems to be a very low preference for bicolor. On these same farms game is found to heavily utilize annual plantings.

SEED PRODUCTION

In Virginia, it takes the average bicolor three years to produce seed from seed and two years to produce seed from plants. The annuals, of course, produce seed the same year they are planted. To the average sportsman and farmer this fact is *most* important. Many, many bicolor borders have been destroyed after one or two years because they did not produce to the satisfaction of the owner.

Early frosts often kill common bicolor and it fails to produce seed, especially at higher elevations. With the improved strains of lespedeza, intermedia, japonica, formosa, robusta, natob and others we have been able to beat the frosts

but these are all still vulnerable to invasion by honeysuckle. Early frosts may get some few annual plantings but only a very small percentage of those plantings made prior to July 1 are damaged by early frosts.

SUMMARY

It has been demonstrated to our satisfaction that annuals are superior to our present perennials for the following reasons:

1. Annuals are cheaper than perennials.
2. Annuals are utilized by more species of game than perennials.
3. Even in adverse years annuals will produce some seed.
4. Annuals are in great demand and are widely accepted by sportsmen and farmers. This popularity continues to expand annually.
5. The farmer will devote better land on his farm to plantings made on a temporary basis than he will to permanent ones.
6. The hunter finds more game utilizing annuals.
7. Annuals produce the same year that they are planted.

THE DEVELOPMENT OF PUBLIC HUNTING AREAS IN MISSISSIPPI

By ROLLAND B. HANDLEY
Federal Aid Coordinator

and

AUSTIN C. SHATTLES
*Area Manager, Red Creek Wildlife Management Area
Mississippi Game and Fish Commission*

I do not hesitate to say that the major concern of all Game and Fish Commissions should be the establishment and development of public hunting areas whereby wildlife can be managed on a sustained basis for the enjoyment of all our out-of-door-loving public and the generations of pseudo Davy Crocketts that will follow them. So much has been written and said concerning the value of the rest and relaxation gained by John Doe partaking of the pleasures provided by our woods, fields, and streams, that I feel I need not stress their value to you today but only mention the fact to remind you of the task before us and the responsibilities we as "wildlifers" have in the matter.

We in Mississippi have realized only during the past few years the urgency of providing well-developed and well-managed hunting areas for our public. Through the cooperation of sportsmen, landowners, both public and private, and Commission personnel, definite progress has been made toward providing our public with places to hunt and something to hunt on a sustained-yield basis. For that I am thankful.

All too often we in the wildlife field, realizing the wide gap between the theoretical and the practical, tend to become side-tracked in "hodge podges" of our own creation letting the sportsman and landowner go their worried way. No longer should this be the case; management for public hunting is our problem and we must face it.

In setting up our managed public hunting areas we drew heavily upon the experience gained by our fellow colleagues in Florida who most diligently assisted us and for which we will ever be grateful.

Our managed areas developed for the controlled hunting of deer and wild turkeys now comprise seven areas, add up to 397,000 acres, and are located principally in the delta bottomlands and coastal pine regions of Mississippi. Several other areas totaling an additional 500,000 acres are suitable and available for such a program at this time and are scheduled for similar development as soon as funds will permit.