



WARRIOR VETCH --

A New Variety for Alabama

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VETCH HAS BEEN a popular crop in Alabama for many years. Its use has been mainly for green manure, but it has been grown to a limited extent for grazing.

Seed production is a major problem with vetch in Alabama. Varieties that perform well in the State do not produce economical seed yields under Alabama conditions. Consequently, vetch seed must be shipped into the State for planting.

In 1958 Alabama farmers planted 6 million pounds of vetch seed², but saved only 324,000 pounds. In that one

year, \$1 million was paid for vetch seed produced out of the State. Considering needs of all states in the region, there is a good potential market for vetch seed in the Southeastern States.

Because of the seed problem, there is a need for good varieties of vetch that will produce seed in Alabama. In addition, better forage crops are needed to meet needs of the State's growing livestock industry. Both forage and seed production have been considered

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Title picture—Comparative growth of Warrior vetch (left) and hairy vetch (right).

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in the vetch breeding program of The Alabama Polytechnic Institute Agricultural Experiment Station.

A new variety of vetch that has been developed by the Experiment Station shows promise of filling the needs of Alabama farmers. Named Warrior, the variety produces high herbage yields, provides early pasture, and supplies nitrogen to summer grasses. However, its ability to produce good seed yields in the State is one of Warrior's outstanding characteristics.

DEVELOPMENT and DESCRIPTION

Warrior (*Vicia sativa*) is a composite of five lines selected for seed and herbage production and cold tolerance. These lines were selected in 1951 and 1952 and tested until 1954. They were then composited to form an experimental variety. The original source of these lines is not known.³

Warrior is similar to Willamette in appearance, cold tolerance, and herbage production, but produces higher seed yields under Alabama conditions. Warrior does not shatter readily. Although it produces some volunteer plants, it cannot be depended upon to reseed itself. Warrior and Willamette appear to be resistant to the vetch bruchid, an insect that does extensive damage to seed of susceptible varieties. Both varieties are sufficiently cold hardy for the southern two-thirds of the State and perhaps for the entire State except in unusually cold years.

SEED YIELDS

Warrior produces good seed yields. In 1955, 80 pounds of hand-harvested clean seed were produced on 1/10 acre on the Story Farm near Auburn (800 pounds per acre). The following year,

³ Original selections were made by former plant breeders in the Agronomy and Soils Department of the Station.

132 pounds were produced on the Agronomy Farm, Auburn, on 1/6 acre (792 pounds per acre). In small plot experiments at Auburn and Alexandria, Warrior produced considerably more seed of better quality than the other vetches tested in 1956 and 1957, Tables 1 and 2. More than 300 pounds of clean seed were combine-harvested from 1 acre at the Thorsby Foundation Seed Stocks Farm in 1957, an adverse year for vetch seed production. In 1958 at the same location, 3,500 pounds were combine-harvested from 5½ acres (636 pounds per acre). However, in small-plot experiments on a sandy soil at the Brewton Experiment Field in southern Alabama, seed production of Warrior, Willamette, and hairy vetch was unsuccessful.

TABLE 1. YIELD AND SEED QUALITY PRODUCED BY THREE VARIETIES,* ALEXANDRIA, 1957

Variety	Seed yield per acre	Seed quality
<i>Pounds</i>		
Warrior	526	Good
Commercial hairy	373	Fair
Willamette	335	Fair to good

*Grown with rye as a support crop.

TABLE 2. YIELD AND SEED QUALITY PRODUCED BY THREE VARIETIES,* AUBURN, 1956-57

Variety	Average yield per acre	Seed quality
<i>Pounds</i>		
Warrior	1,009	Excellent
Commercial hairy	195	Good
Willamette	177	Fair

*Cotton stalks used as support.

Except for the Brewton test, Warrior produced high quality seed. In the small plot experiment at Alexandria, a large percentage of hairy vetch seed was infested with the vetch bruchid. Bruchid infestation has not been observed in seed of Warrior.

Experience has shown that to obtain good vetch seed yields it is desirable to have a support, such as cotton stalks, grain sorghum stubble or rye, Figure 1.



Fig. 1. A field of Warrior vetch grown for seed production in a field following cotton. Cotton stalks serve as an excellent support for vetch.

USE for GREEN MANURE

Warrior produced as much herbage as hairy and Willamette in 3-year tests, 1956-58, at Tallassee and Brewton, Table 3. At Alexandria, Warrior produced as much as hairy, with the exception of the crop grown during the unusually cold winter of 1957-58. That year, both Warrior and Willamette produced less than one-half as much as hairy.

USE for PASTURE

Warrior is well adapted as fall and winter pasture when seeded alone or in mixtures with small grains. It is also valuable for improvement of perennial grass pastures on light sandy soils in southern Alabama. Seed of Warrior are large, giving it certain advantages over smaller seeded legumes. Seedlings are vigorous and stands can be obtained under adverse conditions, such as in sods too dense for emergence of smaller seeded legumes. The large seed may also be planted deeper, an advantage under dry conditions. Results from tests throughout the State show that Warrior generally produces pasture earlier than crimson clover.

Warrior shows good potential for improving the grazing program on sandy soils of southeastern Alabama where smaller seeded legumes frequently fail.

Mixtures of Warrior vetch and Coastal Bermudagrass or Warrior and Pensacola Bahiagrass were more productive than crimson clover-grass mixtures. Growth of these two legumes in Pensacola Bahiagrass and Bermudagrass sods at the Wiregrass Substation is shown in Figure 2. Forage yields of these grasses grown alone (with and without applied nitrogen), grown with Warrior vetch, and with crimson clover are presented in Table 4. Both legumes increased the yield of these grasses. Warrior vetch-grass mixtures without commercial nitrogen produced as much forage as grass grown alone and fertilized with

TABLE 3. DRY HERBAGE PRODUCED BY THREE VETCH VARIETIES, THREE LOCATIONS, 1956-58

Variety	Per acre yield of dry forage								
	Alexandria ¹			Tallassee ²			Brewton ³		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>
Warrior	2,560	3,679	1,266	2,331	1,725	4,020	1,562	2,390	3,620
Willamette	2,274	3,719	1,200	2,113	1,181	3,649	1,425	2,258	3,550
Hairy	1,826	3,836	3,515	887	1,761	4,202	1,379	2,524	3,693

¹ Northern Alabama.

² Central Alabama.

³ Southern Alabama.

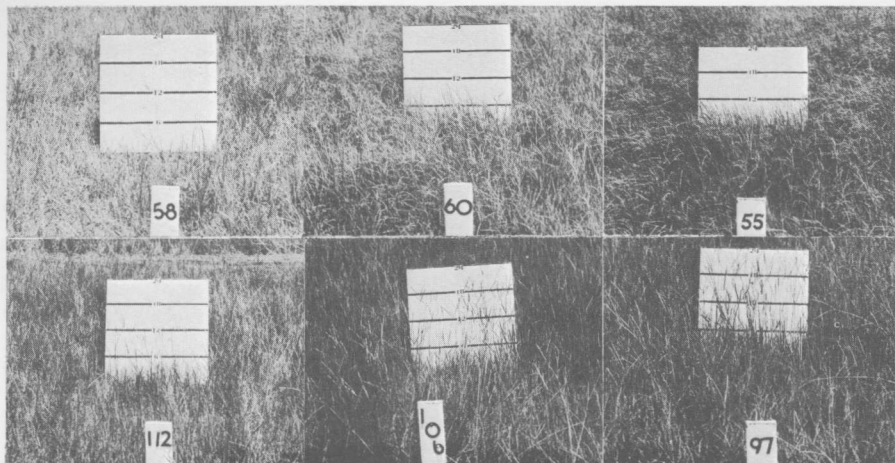


Fig. 2. Twenty eight-day growth of Coastal Bermudagrass and Pensacola Bahiagrass at the Wiregrass Substation is shown above. Top left, Coastal without commercial nitrogen or legumes, center, after crimson clover but no commercial nitrogen, and right, after Warrior vetch but no commercial nitrogen. Bottom left, Bahiagrass without commercial nitrogen or legumes, center, crimson clover sod seeded without commercial nitrogen and right, Warrior vetch sod seeded without commercial nitrogen.

160 pounds of nitrogen per acre. Crimson clover-grass mixtures were as productive as the grass plots treated with 90 pounds of nitrogen per acre. Nitrogen was applied to the grasses on March 15, May 1, and July 15. All plots were clipped at 28-day intervals during the growing season.

TABLE 4. DRY FORAGE PRODUCED BY SUMMER GRASSES WITH LEGUMES AND WITH COMMERCIAL NITROGEN, WIREGRASS SUBSTATION, 1957-58*

Treatment	Per acre yield of dry forage	
	Coastal Bermudagrass	Bahia-grass
	Pounds	Pounds
None (check) ----	1,698	1,548
+Warrior vetch	5,477	5,368
+Crimson clover	3,869	3,927
+160 lb. N/acre	5,382	5,401

*Yields include legume and grass forage.

Vetch-grass mixtures were ready to graze by March 1, 1958. Grass-crimson clover mixtures were 2 to 3 weeks later,

and grass alone made little pasturage before early May. Both mixtures could be expected to produce earlier grazing during winters less severe than 1957-58. Some late fall and early winter grazing can be expected from Warrior vetch on grass sods most years. Earlier grazing can be expected if the vetch is planted on a well-prepared seedbed during late September or early October.

SUMMARY

The performance of Warrior vetch indicates that it is easy to establish in grass sods and furnishes early grazing. It is sufficiently cold hardy for a grazing or green manure crop in the southern two-thirds of Alabama. The best potential uses for Warrior are (1) improving the grazing program on the sandy soils of southeastern Alabama, and (2) producing seed for planting grazing and green manure crops. Good yields of high quality seed have been made on all soils where tested, except on one very light sandy soil in the southern part of the State. No bruchid damage to seed of Warrior has been observed.