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'Shaw' Creeping Vigna

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Creeping vigna (*Vigna parkeri*) is a low-growing, viny, perennial legume native to east Africa. It produces many stolons that root vigorously at the nodes, thus it has the ability to spread, even in bahiagrass. Creeping vigna has three, thumb-size leaflets that are round to ovate-lanceolate. It was introduced into Australia in 1954, but did not gain much recognition there until 1975 when it was noticed that earlier-sown test plots had spread into pastures. The Australians tested and released the variety known as Shaw. Shaw was planted at the Range Cattle REC in 1981 by Dr. Buddy Pitman, who did all of the early evaluation work at Ona. Out of 19 legumes tested in that first study, Shaw was the most persistent under grazing in a mixture with bahiagrass. It was determined that a minimum of 1 plant in a 4' x 4' area would be necessary for an acceptable stand in 1 or 2 years. Such a plant density resulted in 52% ground cover after 4 months (no grazing) as a result of spread from stolons. Results of seeding the first small (1.25 acres) pastures, which was in March 1984 at 1.2 lb/acre, concur with earlier plot studies that 1 plant in a 4' x 4' area is adequate.

Shaw vigna flowers in December in Florida and frost often prevents commercial seed production here. In addition, seed does not ripen uniformly, and it shatters very easily. Limited and expensive seed is the main reason Shaw has not become more popular among cattlemen in Florida. We have had to rely on seed production in Australia, and it has been very expensive to import. Recently, a seedsman in Queensland, Mr. Phillip Carrick (pcarrick@spiderweb.com.au), has made changes in his Shaw vigna management and streamlined harvesting procedures to reduce risk of rain and frost. The result is a more reliable source of less expensive seed. This spring we bought 150 lb @ \$13.61/lb, door-to-door delivery. This may seem expensive, but seeded at 1 to 2 lb/acre, it compares

favorably to *aeschynomene* (in the hull) at \$1.50/lb and sown at 15 to 20 lb/acre.

The seed we purchased this year tested 60% germination (28 day) with an additional 18% hard seed. Drilled at 1.4 lb/acre into bahiagrass in May and with rotational grazing with cow/calf pairs, we have an average of 1 plant / yd² at 84 days after seeding, and plants were found in 60% of the 44 areas where we made counts in the 40-acre pasture. In another 10-acre pasture, Shaw was sown in a prepared seed bed at 2 lb/acre with *Suerte atra paspalum*, and there were 6 plants / yd² with plants found in 75% of the 20 count areas. Both these pastures have the potential to have good stands of Shaw.

What are the "pro's and con's" of Shaw? On the plus side, it seems to be very persistent under grazing. Areas initially seeded in 1984 still have stands today and Shaw has spread to other pastures by cattle. Like most legumes, Shaw is high in nutritive value. Australian literature has reported leaf and stem crude protein at 25 and 12%, respectively, with TDN at 61 and 55%, respectively. Under grazing with pangolagrass (equivalent of 1 steer with continuous grazing year-long) Shaw produced up to 1500 lb forage/acre. Another advantage is that germination is good between 46 and 77° F, which means we should be able to seed this legume during late winter in Florida and take advantage of soil moisture before spring drought. Shaw is relatively cold tolerant, but probably will not be adapted above Interstate 4.

On the minus side, seed production in our Florida pastures will be limiting, and this is of practical importance for cattlemen. In Australia, Shaw is known for its ability to develop large seed reserves in the soil, and these act a perpetual source for regeneration - just like *aeschynomene* does in our pastures. We might get seed to replenish the soil in 1 out of every 3 or 4 years. However, seed in the soil will remain viable for many years. Like all of our legumes, Shaw has poor seedling vigor, and seedling survival is not great. Even though it may persist, it produces poorly in dry years. Yield data from Australian studies shows great variation from year to year depending on summer rainfall. Our record drought in 2000 killed many Shaw plants at the Range Cattle REC, however, new seedlings have replaced them. Shaw may be prone to root-knot nematode on drier sites. On the other extreme, Shaw will tolerate saturated soil, but it will not take flooding.