

THE USE OF SERICIA LESPEDEZA (Smart Man's Lucerne) in South Africa.

H Botha, SL farmer

The first US cultivar of SL introduced to South Africa in the 1970's, the Interstate cultivar, was highly unpalatable and harmed the future research on Lespedeza by Agricultural Department Officials for decades after. The improved AU Lotancultivar was imported into South Africa in the early 1990's.

Poor germination of seed was the most significant contributor to cultivar failure.

Locally-produced seed was successfully established by us from 1996 onwards, initially on the first 70ha. Since then, more than 1100ha was established and there has been no replacement need since.

SL fares particularly well in the eastern summer rainfall areas of South Africa that has an average rainfall of 650 plus mm annually. Although farmers have established growing quantities of SL the past ten years, it remains a relatively new concept in South African farming. It should take another ten to thirty years for SL to be integrated into mainstream farming in South Africa, owing to the hesitancy of farmers in general to introduce new systems and break old habits. This problem is compounded by the decades it took pasture scientists to acknowledge the positive impact it had on marginal soil. To address these challenges in expanding upon SL-use and to address the limited information that was available to South African farmers, we initiated various on-farm trials from 2000 until 2010, with the assistance of the SA Wool Grower's Association and the Department of Agriculture at Cedara and Kokstad, and a request by the Faculty of Veterinary Science at the University of Pretoria regarding parasite resistance of Lespedeza on small stock.

The following trials were conducted:

- Carrying capacity, cutting at various stages, hay production, parasite resistance, adding unfertilised SL into a dairy TMR comparing fertilised Lovegrass in milk production and economics.
- Comparing beef animal production.
- Love grass versus SL.
- Grazing cows and calves or ewes with lambs in the spring when natural grazing is scarce, adding good quality food.
- A three year summer trial on parasite control comparing SL with natural grazing.
- As a bonus we observed that SL, like other legumes, supplies nitrogen after about four years to other pastures that grow well together in the same land, like love grass, smuts finger grass and many other pastures.

All above trials convinced us that SL adds significantly more value than we expected. It is difficult to determine direct monetary value on its successes, but the fact is that SL adds value to the nitrogen in soil, generates humus development, improving soil structure and requires no cultivation. Furthermore, it adds value to animal production in terms of direct grazing, especially in spring when natural grass contains insufficient protein value.

Grazing is only to be allowed when it is 20 cm (10") high and grazing must only be done until SL is "topped", the main reason being that it will stool better with more thin branches developing, giving

thinner stems and better quality hay. Tannin confers the non-bloating characteristic, but also decreases the palatability of the green pasture to a certain degree. Animals grazing on SL perform very well. If animals do not start eating it, allow them to graze also in another paddock with other pastures or grass and after a day or two, you will find that the animals increasingly return to the SL pasture and begin eating it.

Grazing should not be permitted in the first year of growth, as the tap root system needs to be established well before the winter season. Hay could be cut at the end of the first season, provided that this takes place before the winter season.

This pasture has become a solution to many years of expensive hay production and unstable fodder flow problems. It can be used as spring and / or autumn grazing for sheep, dairy and beef cattle and produces cheap, good quality hay. This pasture has changed old, unproductive and marginal lands in valuable and productive units, increasing the carrying capacity of our farm phenomenally. It has alleviated our fodder-flow problems and placed our sheep, beef and dairy enterprises on an economically sound basis. We try to cut hay every second year with two cuttings. Yield depends on rainfall frequency - the more rain, the better the yield. The best we have cut is 9.3 tons per ha, with two cuts. The average amount is approximately 5-7 tons per season. On alternate years we use the pasture for early grazing and may be cut later or grazed well and left to flower and seed. The main reason is that any legumes need to flower in order to feed its root system. Because we have so many pastures, we plan annually to only graze some pastures to uplift our grazing carrying capacity, but the most important factor is to suppress internal parasites. The most important factor determining the success of SL is that it needs to be managed (like any other pasture) and it is very sensitive to destruction when the plants are short.

Advantages include that once established, it is a long-term, low-cost pasture. Its self-seeding ability means that plant production increases on a yearly basis. If managed correctly, it provides good quality, early spring and autumn grazing for sheep and cattle. It is drought-tolerant and copes well under water-logged conditions. It makes for good quality and cost-effective hay that cures quickly. It results in less wear and tear on mowing equipment. It grows on most types of soil and seldom requires lime and / or phosphorus supplementation after planting. It converts marginal lands into productive ones and increases summer carrying capacity as well as hay production potential. It builds the soil by increasing humus build-up and improved earthworm activity and is organic - no pesticides are required and minimum use of fertilizers is required. Disadvantages include slow establishment - up to three seasons. In winter, standing hay cannot be used for foraging, due to its frost-sensitive nature.

For the purpose of this congress I need to briefly inform you about a three year summer grazing trial, as mentioned earlier, regarding parasite resistance on small stock. One Ha. divided into three paddocks SL, carrying 20 lambs average weight 35kg versus 20 lambs on natural grass veld 3 Ha. divided into 3 paddocks (the same carrying capacity). The end results showed quite a difference in parasiteload, more affected in the control group. No real measurable difference in production parameters, as said it appears to be some positive effect on wireworm in the SL grazing trial group.