

Constant Research Seeks New Grasses, Legumes for Southwest

L. P. Hamilton

Department of Agronomy and Range Management

One of the kinds of research being carried on at the University of Arizona deals with introduction of new plants from foreign countries or the improvement of species already in use.

The U. S. Department of Agriculture maintains a branch plant introduction center at Tucson as one of the functions of the University of Arizona plant materials center. Although plants of all sorts that may have economic value are tested, emphasis thus far has been on forage grasses and legumes.

In addition to their study of foreign introductions, plant scientists at the plant materials center keep a sharp lookout for promising strains of native species. These are brought to the center and propagated either by seed or vegetatively. The increases thus obtained are finally field-tested in cooperation with the Soil Conservation Service to see how they will respond under actual field conditions.

Selection of Blue Panic

A number of grasses have been selected for Arizona propagation in this way. Blue panic, a highly productive forage species, is one of these. This grass, native

to India, was only a promising row in the nursery at Tucson in 1937. Farmers have increased the seed from this original row until today it has been planted on thousands of acres in Texas, as well as on less extensive areas in Arizona and New Mexico.

Its value in well fertilized, irrigated pastures is likewise recognized. A perennial grass, it does not need to be replanted every year. Although rather coarse, it is well liked by cattle. Unlike Johnson grass, it has never been known to poison livestock through the development of prussic acid.

Another introduction that shows a great deal of promise is an early-growing Moroccan Harding grass. This grass promises to produce an abundance of spring forage in irrigated pastures. It responds particularly well to fertilization and is a heavy producer under the right combination of fertilization and irrigation. Studies are currently under way to compare this grass with promising new strains of Alta fescue that have recently been brought in from Israel, Uruguay and other countries.

New Range Grasses and Legumes

Range forage grasses are the primary concern of the center. Creeping drop-seed from South Africa is an example. This plant has been field-planted near Hereford, Arizona, where its Bermuda-like growth is spreading over a denuded dry-

land slope. Climatic conditions at Tucson do not seem to favor satisfactory seed production, but it has set seed satisfactorily near Snowflake in northern Arizona.

Cold-tolerant early-season grasses suited to the summer rainfall areas in central and northern Arizona are scarce. Karoo grass appears to be such a grass. The plant materials center is testing this leafy African grass and numerous native strains near Snowflake. Plants not suited to southern Arizona are tested at this Snowflake location with the help of Irving Gibson, a Snowflake rancher.

Needed — A Dryland Alfalfa

Another important phase of plant research at the center has to do with dryland alfalfas. The development of a dryland alfalfa that would grow in mixture with grass on our ranges would do much to increase the quality of range forage. A number of alfalfas have been introduced from the Middle East and are being grown in a 14-inch rainfall area on the Page Ranch near Oracle. Some of these have survived the drouth of two years ago and appear promising. They are being maintained at the center along with new ones still being tested.

Seedbed Preparation

Development of seeding methods which will result in more dependable stands on the range is often as important as the grasses that are used. Various methods of water conservation to accompany seeding, control of annual competition, seed placement and fertilizer application are studied as a part of the research program.

BELOW, Blue Panic grows in a depression where it receives a little runoff water.



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The office will be used for the keeping of breeding and production records and other records connected with research work. The small laboratory will be used in processing semen, blood and in making chemical analyses for experimental work. Quarters for two students are for boys employed by the department in caring for the herd or working on research projects.

The calf quarters are south of the milking barn. There is only space enough in these facilities to handle the calves until they are six months old. At a 90° angle and connected to the calf quarters is an experimental barn. This has a con-

crete floor and stanchions for 24 cows. The structure is used entirely for experimental work. East of the experimental barn are 10 maternity pens. These are enclosed with a chain link fence and the shade is of the same design as used in the corrals.

Design is Basically Practical

Two bull pens are located at the southeast end of the plot. Bulls kept in these pens will be used almost entirely for experimental purposes.

The basic design of this unit can be adapted by the commercial dairyman. In addition to a unit for practical management, the few extra features provide excellent research facilities.