Grasses have performed an important role in the economy of the Southwest since about 1500 when the area was first grazed by domestic livestock. Until very recently no attempt was ever made to improve the native grasses.

There are, however, great possibilities of improving the forage species by the use of plant breeding techniques and a program of this sort has been begun. This project is cooperative between the USDA Agricultural Research Service, and the University of Arizona.

**Black Grama Desirable**

Major emphasis will be devoted to the improvement of range species. One of those being considered is black grama, a native to the region. This grass possesses many desirable range grass characteristics such as seedling vigor and establishment, palatability, high nutritive value, digestibility, wide area of adaptation and forage production.

Unfortunately the use of black grama in range reseeding is hampered by the lack of seed. In most years it produces little or no seed under range conditions. Studies are being made to learn the factors responsible for poor seed set. Results obtained in 1957 indicate that black grama can be made to produce seed consistently under controlled cultural conditions. Comparable results in 1958 will give additional information on the factors responsible for seed production by this valuable range grass.

Several thousand black grama plants are being planted this year from seed collected from a wide variety of southwestern locations in 1957. The plants raised from this seed will be observed and the best of them selected for further study.

**Boer Lovegrass Drought-Tolerant**

An introduced grass, Boer lovegrass, has many good characteristics and appears promising from the standpoint of further improvement. Mature plants have shown superior drought tolerance. They are sufficiently cold tolerant for most areas of the Southwest. The plants, which are palatable throughout the year, green up early in the spring and remain green until late fall.

They are adapted to a wide variety of soil conditions and produce valuable forage in Arizona from about 3000 to 6000 feet elevation. Temperatures at these higher elevations may drop to as low as five degrees below zero.

Seed yields of this grass are sufficient for economic commercial production. However, seedlings are subject to drouth, which makes it difficult to obtain satisfactory stands under range conditions. Improvement of seedling vigor and seedling drouth tolerance would make this grass very desirable for reseeding many areas of the Southwest. Studies on these limiting characters are being made.

**Other Lovegrasses Studied**

In addition to black grama and Boer lovegrass, several other grasses are being studied for range use. Some of these are: Lehmann lovegrass, weeping lovegrass, plains lovegrass, Bicolor lovegrass, plains bristlegrass, several species of bluestems and panic grasses.

Blue panic is the only grass being investigated for improvement as an irrigated forage grass. This species has a very wide range of conditions, yet produces outstanding yields under irrigation. Different strains may have to be developed for maximum forage production under these diverse conditions.

Several accessions of blue panic are being tested and an individual plant nursery will be established to permit more critical evaluation for both range and irrigated conditions. Research is also under way to evaluate irrigated blue panic for forage yield under various applications of nitrogen, phosphorus and potash, and under various amounts of soil moisture.