

consideration in the Hessian fly area.

In the durum growing areas, Mindum is usually satisfactory unless rust is severe. Stewart af-

fords rust protection and is recommended especially for the northern sections of the durum belt. Carleton is recommended where strong straw as well as high rust resistance is desired.

INCREASING THE GRAZING CAPACITY OF SHORTGRASS RANGE BY MECHANICAL TREATMENTS

A Review of Wyoming Agr. Exp. Sta., Bull. 273. "Mechanical Treatments for Increasing the grazing Capacity of Shortgrass Range." 1945.

In a series of tests begun in 1939 at the Archer Field Station near Cheyenne, Wyoming, the effects of various mechanical treatments on the plant cover of typical shortgrass range were tested. The implements used included an eccentric one-way disc for pitting the surface, a groover, a moldboard plow and a sub-soil chisel or Killifer implement.

The eccentric one-way disc applied as a continuous treatment leaves the surface resembling a waffle, with the pits about 16 inches apart. This treatment and grooving at 2-foot intervals proved most effective in increasing forage production. When grazed with sheep, the range subjected to these two treatments showed a 4-year average of 11% greater grazing capacity and 6 pounds more lamb gain per acre than untreated range. In the fourth year the two treated areas carried 36% more sheep per acre.

In additional tests it was found that the wider the spacing between treatments the less the effect on forage production. In general, treatments spaced wider than a 5-foot interval failed to produce significant results. Both plow and groover with a 5-foot furrow interval produced significant increases, but the Killifer chisel failed to be effective at any furrow spacing.

The principal effect of the treatments on the vegetation was to thin the cover resulting in an increase of the taller grasses such as western wheatgrass and needle-and-thread and a decrease in the short grasses including blue grama and buffalo grass. The increase in the taller grasses resulted in an increase in total forage production, an increase in feed available in the early spring, and an increase in the ability of the range to retain moisture. The pits and grooves also helped to retain excess precipitation on the range. (Reviewed by Warren Whitman)