Notes

RANGE PITTING AND SEEDING MACHINE FOR EXPERIMENTAL PLOTS

A pitting and seeding machine has been redesigned at the University of Wyoming Experiment Station to be used on experimental plots on the Big Horn Mountains. The project is carried on cooperatively with the Wyoming Natural Resource Board, the Big Horn Permittees Association, and the University of Wyoming Forest Service.

The machine was built around a John Deere P-75 3-point disk tiller. The disks are 22 inches in diameter, offset 2 inches at the center and spaced 20 inches apart. The pits formed are 7 inches wide, 4 inches deep and 5 feet 6 inches long, spaced 1 foot 5 inches horizontally and 8 feet longitudinally. An agitating cable-type seeder attachment was mounted on the tiller frame with grain tubes leading to the pits. The seeding mechanism receives its motion by V belt driven by a sheave mounted at the end of the arbor bolt. Calibration tests indicated accurate seeding at rates of 3 pounds per acre. Grain drill covering chains are used to cover seed that is dropped in the pits.

The machine has the advantage of being lighter, more maneuverable, and of lower cost than the conventional pull-type pitting machines used until this time.

It is believed that the machine, in addition to working out well for experimental plots, also may be practical for the farmer or rancher, for it requires only a two-plow tractor for power and should be able to cover 2 acres per hour.—Clarence F. Becker, assistant agricultural engineer, and Robert L. Lang, Associate Agronomist, both of the University of Wyoming, Laramie.

INOCULATION TECHNIQUES FOR CROWN RUST OF OATS

A STANDARD procedure for obtaining satisfactory infection from inoculation of oat seedlings with crown rust generally includes prior removal of the bloom from the leaves. This is done by passing the leaves gently between moistened fingers. This process is time consuming and seedlings often are damaged or broken. When large populations are tested, the amount of time required in preparing seedlings for inoculation is very great.

The use of a detergent solution and several modifications of procedure have been incorporated into the inoculation methods used in recent years at the Iowa Experiment Station to facilitate rapid handling of large populations. A brief outline of this procedure is presented herein.

Sterilized soil, sand, and peat mixture was placed in 14 by 20 inch wooden flats, thoroughly watered and allowed to stand over night. The following day, holes for planting were punched with a marking board made from five-ply wood with one-quarter inch diameter wooden dowel pins protruding outward one-half inch. Twenty-five rows of 17 holes each were marked by the board with a spacing of three-quarter inch. Seeds were covered with a light layer of soil and watered.

Flats with seedlings in the first-leaf stage of growth (approximately two weeks old) were placed in a walk-in moist chamber. The chamber was constructed with removable window sections, supplied with steam heat to control temperature, and fog nozzles connected to compressed air and water produced high humidity. Fifteen flats could be placed in the chamber at one time for inoculation.

Seedlings first were sprayed with a solution of water and Dreft (10 cc. per gallon) applied as a fine mist to the seedlings using the high pressure "Sure Shot" sprayer shown in figure 1. Small CO₂ cartridges provide pressure for producing a very fine mist. Seedlings should be completely covered with small droplets of the solution.

Seedlings were then dusted with a mixture of rust spores and talcum powder. A mixture of 1 cc. rust spores to 50 cc. talcum powder has given satisfactory infection, but unless


2 The "Sure Shot" high pressure sprayer is manufactured by the Milwaukee Sprayer Manufacturing Co., Inc., 2457 West Fond du Lac Ave., Milwaukee 6, Wis.