DURING the last few years many farmers and experiment station workers have realized that the amount of seed planted of many of the grasses and small-seeded legumes was far in excess of the number of seedlings obtained in the initial stand. Such experiences have probably been due to the effect of environmental influences, species of plant, depth of planting, soil type, and other less important factors upon the total emergence. Although these factors, with the exception of the environmental effects, may be controlled in part, the influences of any one of these factors or of the interactions among these factors have not been studied extensively by experimental methods.

Farmers have been sowing too deeply in some cases and some of the recommendations for depth of planting grasses and legumes found in the literature involve depths which were probably too deep for maximum seedling emergence. Since a good initial stand is necessary in the establishment of meadows and pastures, it was believed desirable to determine as definitely as possible the effect of the above variables upon the primary emergence.

REVIEW OF LITERATURE

Love and Hanson (2) were among the first to study the effect on stand of different depths of planting. Their investigations were conducted in the greenhouse with crested wheat grass. Two hundred seeds were planted at several depths in clay soil of good tilth. They observed that seed of crested wheat grass germinated well upon the surface of the soil when there was sufficient moisture. However, in the field, if the surface was dry, the best depth at which to plant was usually between one-fourth and one-half inch depending upon the dryness of the surface soil.

Love and Hanson (2) reported a similar experiment with brome grass. They concluded that the maximum depth at which emergence occurred was 3 inches. About 65% of the seedlings emerged from 1/2 to 1 inch plantings.

Kirk, Stevenson, and Clarke (1) report depth of seeding studies with crested wheat grass which were carried out in the greenhouse. A similar field test showed clearly that in both spring and fall seedings the best stands were obtained from the 3/4-inch depth of planting. They state that planting too deeply has been responsible for many failures with this crop in Saskatchewan.

McMichael (3), in a study to determine the most satisfactory depth at which to plant a number of species of grasses, found that brome grass gave good stands...