Annual losses caused by weeds have been estimated at 100 million dollars for the United States and 2 million dollars for the state of Idaho (1). Weed control is a very serious problem in the seed-growing sections of Idaho, as seed production has become one of the most important agricultural industries in the state. The screenings resulting from the cleaning of alfalfa and clover seed alone amount to over a million pounds yearly. Many dairymen have become interested in utilizing these screenings as a feed for dairy cows because they are a waste product, low in price and high in protein. These screenings, however, are composed primarily of weed seeds, which raises the question as to whether or not such feeds can be utilized without special preparation and still not infest the farms with weeds through the spreading of manure.

The purpose of this experiment was to determine whether or not the spreading of manure over fields caused weed infestation, especially when feeds containing large quantities of weed seeds were fed. Viability of weed seeds as affected by the digestion process of cattle was studied to determine possible weed infestation when manure was hauled direct from the stable to the fields. Likewise, the viability of weed seeds in manure which had been stored for several months was studied to measure the combined effect of the digestion process and manure storage.

In discussing this problem Henry and Morrison (5) state, "Untreated screenings will never be used by farmers who seek to keep their land free from noxious weeds, for many such seeds will pass through the animals uninjured and be carried to the field in the manure. Finely ground screenings are free from this objection."

Ayers, Hulbert, and Ahlson (1) state, "On the average farm many weed seeds are fed to animals in the various feeds, and often they are not greatly injured by passage through the digestive tracts. In the seed districts of Idaho, screenings from small seeded legumes are being fed to livestock with considerable success. Thus the danger of placing large numbers of weed seeds back on the land is increased."

Hills and Jones (6) as early as 1907 called attention to the large number of weed seeds found in some feeds. They reported 129 million weed seeds per ton in one sample of molasses feed. In later reports Hills and associates (7, 9) emphasized this problem. Attention was called to one sample of flax feed which was supposed to...