CONTAINERS FOR CORN MOISTURE SAMPLES

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Even though a sample of corn has been obtained with great care and accuracy, it will have little value for moisture determination purposes unless retained in a container which prevents the loss of moisture. Each fall many samples are obtained from different kinds of corn in yield comparisons, corn grown for seed, supplies handled commercially, or corn sealed for federal commodity loans. In some cases the moisture determination is not made for several days after the samples have been obtained. It is essential, therefore, that the container used be one which will prevent moisture losses from the time the samples are obtained until the moisture determination is made.

A study was undertaken by the Farm Crops Department at Iowa State College in the fall of 1938, and repeated in 1939, to determine the relative superiority of different types of containers for corn moisture samples.

METHOD OF MAKING THE COMPARISON

Five types of containers were used in the fall of 1938. One type consisted of a pint metal can with a double friction lid; the second, the same container without the lid; third, a pint cardboard ice cream container; the fourth, a double cellophane bag with the top given one fold and fastened with wire paper clips; and the fifth, a double cellophane bag with the top folded twice and fastened with wire paper clips. With few exceptions the study with each type of container and with each level of moisture was repeated five times. Three hundred grams of corn were placed in each container and these were weighed at 24-hour intervals through a period of 14 days. The moisture content of the corn used in the fall of 1938 was raised by wetting it and placing in a tight container until the moisture content of the entire lot apparently had become uniform. The experiment was repeated with corn at three levels of moisture, namely, 18, 23, and 31%. The containers were arranged on a table in a laboratory, the temperature of which varied from 70° to 75° F. The humidity was quite low.

Two lots of corn, one containing 19% and the other 28% of moisture, were used in the fall of 1939. These were used as they came from the field without drying or adding moisture. The containers with the corn at the 28% moisture level were stored in two places. One set was handled in a manner similar to that used in 1938, while the other was placed in a room where the temperature varied from 40° to 60° and which had a much more humid atmosphere. The corn containing 19% moisture was stored under the same conditions as that used in 1938.

Only three types of containers were used the second year, namely, a metal can with a double friction lid, a cardboard ice cream container, and a double cellophane bag with the top folded twice.

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