



Figure 2. Five-foot compartmentalized grain trier and equipment for deep grain sampling and grain temperature measurement.

face sample by pushing it horizontally about three inches below the grain surface. Caution should be followed when using the trier since the compartment doors have very sharp cutting edges.

The deep-cup or bin probe (Figure 2) allows samples to be taken from greater depths in the grain mass than are possible with the grain trier. The brass sample cup is inserted into the grain and additional 3-foot extensions are added to reach the desired depth. A short pull of the handle will open the top, allowing grain to flow into the cup. If the grain is too compact to flow freely, a sharp pull or jerk will start the grain flow. When the deep-cup is inserted, it is important for the sections to be properly locked to prevent their loss within the grain mass. Twisting the handle while the probe is inserted in the grain may unscrew a connection resulting in damage or loss of the cup. The temperature of the probe extensions should be noted as they are removed from the grain to locate areas of heating (hot spots).

Temperature samples can be taken with a shielded small diameter thermometer screwed onto 3-foot threaded pipe extensions (Figure 2). A threaded T-handle facilitates insertion of the probe through the grain mass. Extensions can be added until the desired probing depth is reached. The apparatus should be left in place for several minutes before being removed from the grain to read the temperature. Maximum probing depth with this equipment is between 12 to 15 feet.

Grain sample bottles or metal cans are necessary for holding grain samples. These containers must be filled to capacity with grain or there will not be enough to adequately determine test weight, insect infestation and moisture content.

Sample cards are used to record observations, sample sources, location of bottle samples, insects present, temperatures, and to diagram conditions. It is important that the card remains with the correct sample.

Sample bags hold a larger sample than the sample containers described above and are lined with plastic to minimize moisture changes and reduce insect escape. The bags must be sealed tightly after filling.

The equipment described above can be purchased from a number of agricultural and general supply catalogs and can cost several hundred dollars. When adequately maintained, the equipment has a long serviceable life. When compared to the cost of a lost storage bin of grain, the cost is well justified.

Other useful equipment includes vise-grip pliers, 50 feet of nylon rope, marking pens, flashlight, tape measure and leather work gloves (see Table 1).

All samples should be evaluated as soon as possible because insect infestation or mold growth status may change quickly in a sealed bag or container, especially if the samples are not kept cool.