Making Your Own Test Weight Apparatus

DR. JOE HENGGELER
PORTAGEVILLE, MO.

Test weight is an important component in corn yield. The "normal" test weight (TW) of corn is 56 pounds per bushel. It is good to have high TW values since they are generally associated with good yields. Low TWs can also lead to dockage on price received. There is also another

mine if you scored a field goal or made a touch down.

After the blister and milk stages as you move into first dent, kernel populations have pretty well been fixed. The sole component now to increasing yield comes from TW. Figures 1 and 2 show kernel population and test weights from a study currently going on. The data start about a week prior to dent. As can be seen, kernel numbers do not increase (Fig. 1). On the other hand, TW (adjusted to 15 percent moisture) continues to increase (Fig. 2). The current rate of increase
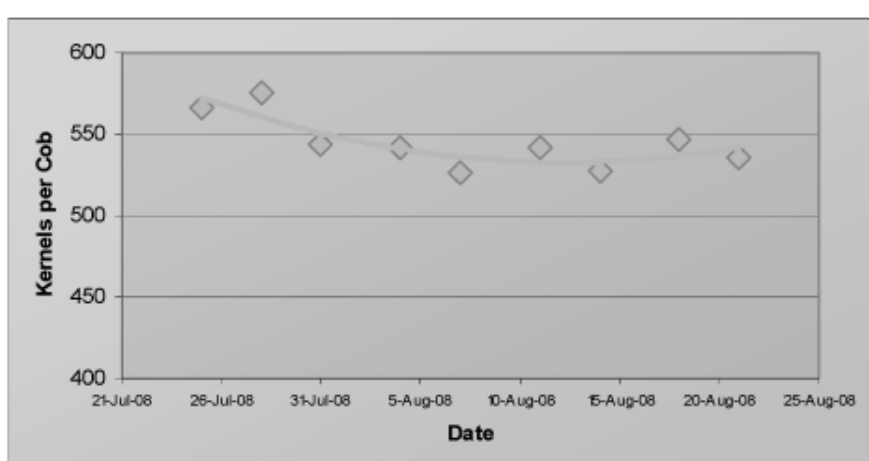

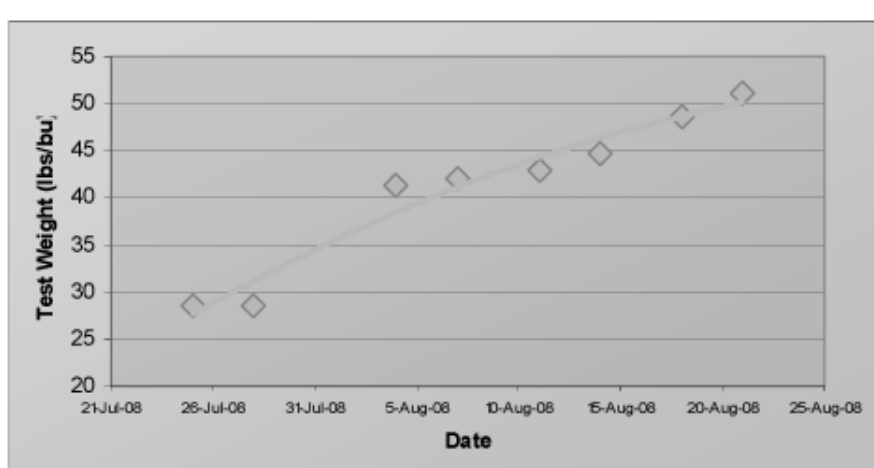Fig. 1. Average number of kernels per cob from three hybrids, Portageville, MO, 2008.

Fig.2. Average test weight from three hybrids, Portageville, MO, 2008.

Seed Moisture	Adjustment
25%	0.88
24%	0.89
23%	0.91
22%	0.92
21%	0.93
20%	0.94
19%	0.95
18%	0.96
17%	0.98
16%	0.99
15%	1.00
14%	1.01
13%	1.02
12%	1.04
11%	1.05
10%	1.06
9%	1.07
8%	1.08
7%	1.09

additional economic consideration involving TW. Here is what it is: if one field has corn having a TW of 54 lbs/bu, while the neighboring field has a TW of 62 lbs/bu (15 percent higher), then transportation costs are 15 percent higher for the low TW field.

Good TW is thought to come about through proper end-of-season management, including timely irrigation. The 2007 season had great TW values, which may partially explain the higher corn yields in southeast Missouri last year. The district average was 172.0 bu/acre, which was 11 percent higher then the average of the previous four years.

Although a number of factors are involved in final TW, including variety and population, TW is important, to use a sports metaphor, in scoring a touch-down with your corn crop. Good early season management has given you the potential number of kernels per acre to score, and has brought you within 20 yards of the goal line. Now that you are in what football fans call "the red zone", the test weight you receive will deter-

of TW in this study is about ½ lb/bushel per day, and with black layer about 2 weeks off, final TW here is projected to be about 60 lbs/bushel.

Having information on how TW is increasing as the crop matures in the last 40 days is nice, and will tell a complete story of late-season management, but this much measuring is rather tedious. One alternative is to just take TW after the crop is fully matured. If the TW is high, you probably did a good job with late-season irrigation. If it is low, then irrigation may have been cut off too early.

A home made TW apparatus can be constructed and when used with a simple kitchen or postage gram scales, will display TW in pounds per bushel. Any container with known volumetric content could be used, but this one keeps conversion math to a minimum. A moisture meter, which most farmers have, is also required. The following instructions show one how to make such a device from a 1-liter Mountain Dew bottle.

Step 1. Put a 1-liter Mountain Dew or similar bottle on a gram scale. Tare the scale so that it reads 0 grams. Fill the bottle about 3/4ths full with water. Put back on tared scale; add or pour out water until the scale shows 776 grams.

Step 2. Mark the water level with a Sharpie. (Alternatively, if a 1-liter Mountain Dew bottle had been used, you can measure up 15.8 cm from the bottom and marked the bottle there.)

Step 3. Carefully, cut the top of the bottle off along the marked line.

Step 4. Tare the container on your gram scale and fill with corn seed. Read the value in grams and divide by 10 to get pounds per bushel. For example, if the measurement is 602.5 grams, the corn has a TW of 60.25 pounds per bushel.

Step 5. Adjust this value to 15 percent moisture using the following table. For example, if our sample had a moisture of 17 percent then the actually TW would be 60.25 x 0.98 = 59 lbs/bu. Δ

Dr. Joe Henggeler is Irrigation Specialist with the University of Missouri Delta Center at Portageville.