Single–Kernel Characterization System (SKCS)

Method

1. A sample of wheat kernels (12 to 16 grams) is prepared by removing broken kernels, weed seeds, and other foreign material.
2. The sample is poured into the access hopper of the single-kernel characterization system instrument.
3. The SKCS instrument analyzes 300 kernels individually and records the results on a computer graph.

Results

- Wheat kernel characteristics are analyzed for: kernel weight by load cell, kernel diameter and moisture content by electrical current, and kernel hardness by pressure force.
- Averages and standard deviations of these parameters are reported as SKCS results in terms of values: kernel weight is expressed in milligrams (mg); kernel diameter is expressed in millimeters (mm); moisture content is expressed as a percentage; and kernel hardness is expressed as an index of –20 to 120.

Why is this important?

The single-kernel characterization system test evaluates wheat kernel texture characteristics by measuring the weight, electrical current, and force needed to crush the kernels. Kernel characteristics are related to important milling properties, such as conditioning (tempering), roll gap settings, and flour starch damage content.

Adapted from Method 55-31, Approved Methods of the American Association of Cereal Chemists, *10th Edition. 2000. St. Paul, MN.*

SKCS analyzer.

- **Kernel analysis**
- **Measures kernel characteristics**