One of Asia’s leading Agribusiness groups and one of the largest oilseed processors in China is using the DA 7300 to improve the efficiency and product uniformity in their soybean processing plants. They have purchased and installed 9 DA 7300 In-line units. The units are used in eight different soybean processing plants in China measuring soybean meal, full fat meal and separated protein powder. Measurements of moisture, protein and oil are used to keep production within specifications. Additional value is obtained by monitoring fiber, ash, soluble protein, color, and foreign objects. Color measurement and foreign object detection are accomplished using the DA 7300 built-in camera that acquires, displays, and stores images of the product stream as it passes the instrument.

Figure 1. Workflow of the soybean processing.
DA 7250 At-line and Lab Control in Soybean Processing

The final protein content is automatically controlled by adjusting the amount of hulls that are added back into the meal. The automatic control loop is based on the DA 7300 measurement that is integrated with the GE control system.

The benefits of keeping the moisture and protein at target and lowering its variations are very clear as even small deviations lead to large product give away. Return of Investment of the DA 7300 instruments are, in most cases, only a few months.

Having the measurements visible in the plant control system also lets the operators have complete control, substantially reducing the time for start-ups, the need for re-works, rejects and costly quality control investigations.

The automatic in-line control also reduces the need for laboratory testing, something that also contributes to further savings.

As a complement to the In-line NIR control, our customer also uses the DA 7200 lab/at-line instrument. The DA 7200 bench top instrument is fast, accurate and easy to use. The instrument can confidently be used by plant operators and measurements can be made without the need for grinding the product. Analysis of the Soy, hulls, flakes, meal and oil is done with the same instrument.

DA 7300 Installation Points in Soybean Processing

The DA 7300 In-line has a built-in camera that captures an image and video of the soybean meal as it is passing the instrument and is measured with NIR. The product image show colour, foreign particles and is a useful tool during production trouble shooting.

DA 7300 In-line installed on a transfer chute. Installation is done with the PerkinElmer mounting panel, allowing for fast and easy installation.