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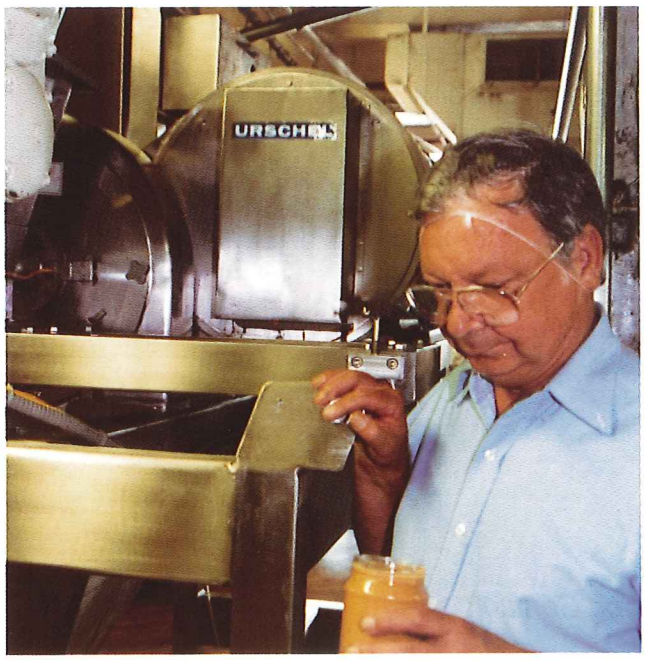
Mill reduces peanuts in single pass

Algood Food Co. (Louisville) eliminated three production steps encompassing eight pieces of equipment, reduced horsepower requirements by 58 percent, doubled production capacity, reduced maintenance costs, and improved the quality of its peanut butter—all by streamlining its milling system with a single-pass, two-stage size-reduction mill supplied by Urschel Laboratories. "We eliminated the primary grinder, two heat exchangers, two secondary mills, two cooling units, assorted pumps, two finishing mills and several hundred feet of piping," says Plant Manager Dick Shulhafer. "We also opened-up 400 square feet of valuable floor space. "Bottom line: "Product uniformity and particle size are as good if not better than before," he added.

Algood produces peanut butter for retail, food-service and ingredient markets both in the U.S. and abroad. On the retail side, the company produces more than 50 different private labels for supermarket chains and wholesalers. Food processors use Algood peanut butter as a functional ingredient, coating or filling for crackers, cookies, snack foods and breakfast cereals.



▲ Dick Shulhafer, plant manager at Algood Food Co., inspects a jar of peanut butter produced in a single pass on his new milling machine. (Source: Urschel Laboratories.)

Formerly, the amalgamation of peanuts and powdered ingredients was first reduced to 20-40 mil by a grinder equipped with 2-ft. diameter plates. The mixture was then pumped to secondary milling machines, and finally to finishing mills in order to achieve a particle size of 3-8 mil and the desired texture.

Size reduction is now accomplished in two stages on a single pass. After cleaning, roasting and blanching, peanuts are metered together with stabilizer, sweetener and salt to recipe specifications in microprocessor-controlled weight-loss feeders and then pumped to the new mill.

In the first stage, a rotating impeller breaks the product down into particles of random size. In the second stage, as the product reaches the rotational speed of the impeller, it moves outward toward the periphery of the processing chamber against a ring of closely-spaced knives (made of tungsten carbide or zirconium oxide), where bits of product are sheared-off and discharged between the knives.

Particle size is determined by the depth of cut and the opening between the blades. Algood uses a *Microcut* head that is equipped with 212 blades spaced .02183 inches (.554mm) apart, and a .0019-inch (.048mm) depth of cut.

Product exits the mill at 160°F with a particle size of about 2 mil, and is pumped directly to the appropriate filling line and subsequent packaging operations. (Granulated nuts for chunky peanut butter are introduced prior to fill.)

Because the new mill produces peanut butter of smoother consistency with less equipment, Algood is planning to purchase a second unit for its export production line.

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