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WHOLE BEAN
A FAMILY TRADITION SINCE 1897
PAPANICHOLAS
FRESHLY ROASTED COFFEE
HAWAIIAN ISLANDS
GROUND
A FAMILY TRADITION SINCE 1897
PAPANICHOLAS
FRESHLY ROASTED COFFEE
FRENCH VANILLA
GROUND
A FAMILY TRADITION SINCE 1897
PAPANICHOLAS
FRESHLY ROASTED COFFEE
FRENCH ROAST
1 2 3 4 5
DARK ROAST
OZ. (312g)
WHOLE BEAN
A FAMILY TRADITION SINCE 1897
PAPANICHOLAS
FRESHLY ROASTED COFFEE
HAZELNUT CREME
LIGHT ROAST
DARK ROAST
NET WT. 10 OZ. (284g)

Papanicholas
Coffee Grows in Chicago

Chicago-based coffee roaster, Papanicholas demonstrates how they evolve with the times, as well as how they are overhauling their facility as they grow in the Midwest. (Staff Report)

The Papanicholas Coffee Company is a family-owned and operated business that prides itself on fine quality gourmet coffees. Business is growing, particularly in the area of flavored coffees, and the company offers more than 50 varieties of whole-bean and ground coffees.

To expand from the Midwest into select markets in the Northwest and Mid-Atlantic regions, the company moved into new facilities housing both corporate headquarters and a roasting plant with a capacity of more than a million lbs. (454,000-kg) a year (Figure 4). At the heart of the plant is a new 2000-lb/h (905-kg/h) capacity Lilla roaster and two new Munson rotary batch mixers.

Heart of the Papanicholas plant is a 25-cu ft. (0.7-cu m) Munson stainless steel enclosed rotary batch mixer (left), a 50-cu ft. (1.4-cu m) Munson rotary batch mixer (right), and a 200-lb/h (905-kg/h) capacity Lilla roaster (not shown).

Roasting Creates the Flavor

The region and weather in which coffee is grown, determines its distinct flavor. Roasting the green beans brings out that flavor and develops the characteristic coffee aroma. The longer the roast, the darker the beans and the stronger the flavor until you reach the almost-burnt taste of a very strong roast.

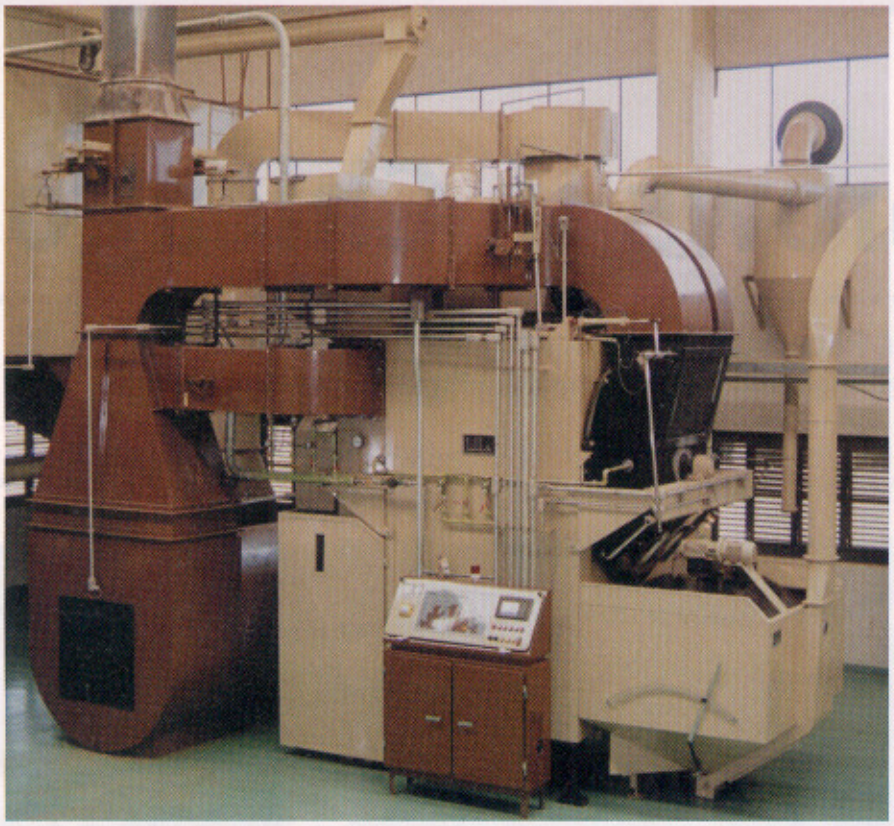
"There are many intricacies in the art of roasting coffee beans," says Vaughn Papanicholas, vice president, "and it takes tremendous experience to maintain consistency." The Brazilian Lilla roaster is designed to roast evenly and provide immediate cooling once the desired color and aroma are attained. With partial cooling in the drum itself and a cooling hopper to quickly drop the temperature of the roasted beans, the roaster protects the coffee's aromatic oils for better flavor and appearance.

Most coffee sold consists of a blend of several different types of beans to create a balanced coffee with the desired taste qualities. According to Papanicholas, different types of beans from different sources are best roasted separately and then blended to deliver the optimal taste. "Although it's easier process-wise to blend before roasting, some of the beans will be under or over-roasted. Blending after roasting gives much more uniform and consistent results."

Blending After Roasting Achieves Uniformity

In the old plant, mixing of the various types of beans occurred within the roaster, as vanes integral to the rotating vessel lifted and tumbled the beans. But variations in the density and moisture content of different types of beans produced corresponding variations in the degree to which each type was roasted.

Papanicholas overcame this limitation by roasting each type of bean separately, then blending roasted beans using a 50-cu ft. (1.4-cu m) capacity stainless steel Munson rotary batch mixer (Figure 2). "The rotary mixer has a gentle tumbling action that does not break the beans or cause damage," he says. The gentle blending is a result of low-rpm rotation of the mixing vessel, unlike stationary horizontal mixing vessels with rotating ribbon blades, plows or paddles that push through the mate-



Top: Lilla Roaster - 200 lb.lhour (905 kg/h) capacity.
Left: Figure 5: From its headquarters and roasting plant, the Papanicholas Coffee Company supplies gourmet whole bean and ground coffees in the Midwest and beyond.

rial, increasing friction, degradation and heat build-up.

Internal mixing flights of the rotary mixer alternate in direction for gravity-driven cascading of the material back and forth, producing a 100% uniform blend in three minutes or less. The flights also serve to direct the beans toward the discharge port, evacuating of the vessel in three to four minutes with no residual in the machine.

The mixer has a stationary intake chute fed by a mechanical conveyor, and is fully enclosed, containing dust and preventing contamination of the product.

Second Mixer Conserves Flavoring

Papanicholas also purchased a 25-cu ft. (0.7-cu m) Munson stainless steel rotary batch mixer (Figure 3) for flavor spray coating downstream, replacing a continuous process coater of a different manufacturer. The rotary batch mixer is fully enclosed, a significant improvement according to Papanicholas. The old machine was open on both ends, allowing the flavoring to mist out, so there was a substantial amount of waste. Profitability benefits from saving this expensive component. The enclosed design also prevents flavorings from wafting inside the building, invading the non-flavored area.

Previously it was impossible to accurately measure the amount of liquid applied to the beans due to the lost liquid. With the new mixer, the operator weighs the coffee beans and flavoring for an exact blend. "Every batch is exactly the same with the rotary mixer," says Papanicholas. A typical batch of 442-lb. (200-kg.) requires about 13-lb (6-kg.), or 3%, of liquid flavoring. Spray heads inside the mixer atomize the flavoring, and the gentle yet efficient tumbling effect ensures complete distribution without overspray or waste.

With a footprint of 7x10 ft. (2x3 m) the rotary batch mixer fits in the same space as the continuous mixer while tripling its output because of the short mixing time. The mixer can coat up to 6 batches per hour of a flavor, producing 2600-lb./h (1180-kg./h) versus 900-lb./h (400-kg./h) in the old machine. A Clean-in-Place (CIP) system eliminates hand washing, shortening downtime between flavors and further boosting production.

Batch size may be varied with demand to as little as 10% of rated capacity with no variation in mixing time or uniformity. "We can run full batches of French vanilla all day long, but only need half batches of toasted cinnamon pecan, a lower volume product. The machine is also quiet, further improving working conditions."

For information contact **Munson Machinery Company, Inc.**, 210 Seward Ave., Utica, NY 13503-0855, Phone: 800-944-6644, E-mail: info@munsonmachinery.com, Web: www.munsonmachinery.com.

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