



Sweet success with the

FIFTY YEARS AGO, D’GARI made flavored gelatin through a slow, crafty process with manual machines that produced only 25 kilos of gelatin powder an hour. Over the years, D’Gari formulators have perfected mixes that make firm, durable and tasty gelatin *every time*. (Only three people know the secret recipes.)

D’Gari’s recipes must be followed to the milligram, which is important since some of the ingredients are extremely concentrated. Anyone walking through the front door of the immaculate D’Gari plant will immediately taste sweetness.

Electronic Control Systems, led by Ruben Rabell, has designed, fabricated, and installed the automatic formulation system at D’Gari. Ruben recalls how his company was awarded the project with D’Gari. “Jose Delorius Vargas, the chairman of the D’Gari board of directors, analyzed D’Gari’s growth over the past three years and predicted where the company could be in five years. He tried to find a formulation system that was already manufactured. He looked in Germany and the USA and asked five companies, including ours, to present a solution—and we won!”

Ruben is clearly satisfied with the finished system. “We designed and built all of this—the robotic cart, the stainless steel enclosures, the bins, even this catwalk and these stairs. All was built by our engineering and programming team to handle 80 different ingredients within 20 formulas. It was perfected in 14 months from contract to start-up!”

Ruben and company have programmed the Rice Lake 920i to control a network of five PLCs with an industrial computer that supervises the process and the movement of the robotic cart. The mix recipes are stored in the computer database. The 920i receives the formula and instructions to control servo motors. The servos move screw augers as little as one degree, or one pulse, to dispense as little as seven

kilograms of an ingredient. The robotic cart travels a track below the hoppers. Ruben demonstrated the process: “This is the diagnostic screen. If there is an error, we can locate it on this screen. We can even calibrate the scales through the 920i.”

There are seven ingredients in most recipes, and Ruben’s team designed each hopper to dispense the ingredients precisely. Some of the hoppers dispense an ingredient more rapidly than others. Some of the ingredients are denser, so that hopper dispenses more slowly. If data from the scale indicates the mix needs another gram of an ingredient, the 920i sends a command to the screw auger to rotate as little as one degree. When the mix is complete, PLCs send data for the next recipe.

Raul Rocha, D’Gari chief engineer, notes another benefit of the formulation system, saying “We had been having problems with running out of ingredients and we didn’t know why. I wanted to improve our traceability.” The 920i-based system traces and controls the ingredients to mix 20 to 90 recipes. The automatic formula-



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Raul Rocha, D’Gari chief engineer



Ruben Rabell, Electronic Control Systems, clearly enjoys his work for D’Gari. “We designed and built all of this—the robotic cart, the stainless steel enclosures, the bins, even this catwalk and these stairs.”



Manuel Talancon, Rice Lake international regional director, far right.

920i[®]

tion system has ten scales and mixes a bag every two minutes, producing five million cartons annually, each containing 50 boxes of flavored gelatin.

Raul is very pleased with Ruben's group, "They're young, but they are very experienced and very cooperative. They did their research and they came up with the system we needed."

Electronic Controls Systems would like more projects like the D'Gari application. "We can design and build an automatic formulation system for any mix—liquid or powder. It's always a custom fabrication."

When Ruben discovers 60,000 people receive *Rice Lake* magazine, he rubs his hands together in anticipation of future projects. ■

