

# Beverages, Brazil, And Farm Bill At Grain Seminar

(Continued from Page A1)

took 15 months), it was moved on to consumer testing. The university's football team was picked as the group of consumers to try the product.

After practice, researchers asked the players opinions of the drink, which resembles a chocolate milkshake, according to Bordi. "The players actually developed the drink — they told us what they liked and didn't like," he said.

By NCAA rules, the drink could be no more than 30 percent protein. Pasteurized as Penn States Creamery, it has a shelf life of 30-45 days.

Besides taste, health benefits were also an important part of the project. Researchers gathered weight data, measured dietary intake, and took blood and urine samples. They also asked the players to rate their pain on a numerical scale.

Players gave positive feedback on the drink and reported lowered soreness and increased energy. They also did not experience the drastic weight drops that may characterize preseason workouts, reported Bordi.

Health benefits, said Bordi, go beyond soreness and body recovery. Oxidant stress during exercise may contribute to fatigue and muscle injury, and "we strongly believe soy really reduces this," he said.

As for the future of the drink, "we're looking to have it bottled and hope that

next year we can make it available to all the sports teams at Penn State," he said.

Ray Leiby, quality assurance, Wenger Feed Mill, Inc., discussed grain quality during his presentation.

Quality grains will not have a musty, sour, foreign odor, damaged kernels, or have foreign materials, said Leiby. This ensures the proper formulation of diets.

Grain accounts for 60 percent of the formulation, "so it can have a significant impact on the final ration," he said.

The business accepts 15.5 percent maximum moisture for corn and 14 percent for soybeans. A sieve is used to test for foreign material.

Random samples are taken to the laboratory for nutritional analysis. "We also test for molds and mycotoxins, and forward to another lab for amino acid profiles," said Leiby.

Grain spoilage is the result of microorganisms using a grains nutrients for growth and the reproductive process. However "molds don't tend to attack good, sound grain," he said.

According to Leiby, if sound grains are harvested and kept a low moisture and low temperature, they may retain their original processing quality and even original viability for many years.

Leiby also spoke about the advantage of genetically modified organisms (GMOs). He expects to see an increase in consumer confidence in GMOs.

Larry Hepner, department chair, development of agronomy and environmental science, Delaware Valley College, told the college's experience of growing corn for an unusual market: Hollywood.

The college rented ground to Disney for the movie "Signs," a movie about visitors from outer space that left crop circles in a cornfield.

Since the corn was valued for its aesthetic rather than productive value, this year's crop posed unusual challenges, according to Hepner.

The first challenge was that the film crew wanted to shoot the movie from September 15 to October 15 — a time when Pennsylvania's corn is traditionally already harvested.

Consequently, DeVal pulled up the year's already-growing corn and replanted in the first week of June so that it would be maturing and green for the movie.

"We were also trying to grow corn through the driest part of the summer," he said. Consequently, the DeVal team designed an irrigation system for the 80-acre farm.

"We worked for a month to get everything set up," said Hepner.

The system included a center pivot and drip tape. Effluent was taken from a wastewater treatment plant. Newly-installed pipe mains fed the 100 miles of drip tape that traveled down every other row of corn.

"The wastewater did a very efficient job for us in growing out the corn," said Hepner.

Employees from a firm in California took two-by-four boards to create the crop circle pattern in the field.

"Our other fear was killing frost," said Hepner.

In fact, in the final week or shooting the area had three days of frost. However with the addition of green paint for the first three-



Speakers during the conference included, from left, Larry Hepner, Delaware Valley College; Dr. Peter Bordi, Penn State, and Ray Leiby, quality assurance, Wenger Feed Mill, Inc.

rows of corn, the last scenes were completed.

"It was a fun summer," said Hepner, "but there are practical applications we hope we can take from it." DeVal purchased the irrigation system from Disney to look at wastewater use for irrigation.

Marcia Zarley-Taylor, editor, "Top Producer," presented "Brazil: The Competitor You Can't Ignore."

From her first trip to Brazil in 1998, Zarley-Taylor was impressed with the rapidly changing country.

She has since spent several years researching "how Brazil's production affects our competitiveness on the world market. Their production capacity will change the way we look at the world."

"It's not soil, it's water that is making crops," said Zaley-Taylor.

In addition, "over the last 25-30 years, their scientists have definitely proven that

it's not soil quality that counts. They're making soil in South America."

In the 1970s producers and scientists discovered that using phosphorus and other elements could correct the soil that has an organic content of one percent.

The southern part of the country, long considered the agrarian area, is now joined by the "Cerrado" savannah area in the middle — an area that was previously considered wasteland.

Recently the USDA released a scientific study that revealed that with improved transport, capital investment, and technology, Brazil could bring 420 million acres into production.

"What this means is that we have overlooked a continent — and this isn't marginally productive land," she said.

"The U.S. has been asleep at the switch,

(Turn to Page A24)

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