The whole enchilada

A&M professor adds 3 methods to tortilla production to lengthen the bread's shelf life and improve its quality

By Kyle Ross
THE BATTALION

A tortilla is a tortilla is a tortilla, right? Not if you are Ralph Waniska, professor of soil and crop sciences at Texas A&M, who has spent the past few years cooking up new ways to bring an improved tortilla to a hungry market. With three technologies already disclosed and a fourth one in the oven, Waniska's vision for tortilla development is staggering.

"There is always room for improvement," said Waniska, hinting at the unfulfilled expectations of current tortilla consumers.

The number of tortilla consumers in the United States is reaching record heights, according to the Tortilla Industry Association's 2002 market survey. Among Americans, tortillas trail white bread by only 2 percent as the most popular bread. In 2002, U.S. tortilla sales totaled $5.2 billion, with $6 billion in estimated sales for 2004.

So it is no small feat that Waniska and fellow researchers at the Texas A&M University System have designed new ways of processing tortillas that offer improvements in every aspect. Color, size, consistency, nutrition and shelf-life have all been enhanced in hope that consumers will sit up and take notice.

"Do we want to have high-fiber tortillas? Do we want low-carbohydrate tortillas? Do we want no trans-fat tortillas?" Waniska said. "I know we always want tortillas with a longer shelf-life."

And in the age of the low-carb diet, these can all be important concerns to consumers. Junior marketing major Kristi Saggard said she tries to stay away from carbohydrates.

"If the tortilla's taste was comparable to that of a regular one, I would buy the one with lower carbs — the healthier one," Saggard said.

These and other specific interests can be satisfied, Waniska said, while maintaining the fundamental characteristics of the tortilla such as stability, diameter, opacity and flavor.

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"We think we can offer a product that manufacturers will like and consumers will like," Waniska said. "It's the best of both worlds."

His first disclosed innovation introduced a dough conditioner that improved retention of air bubbles during processing. Particular levels of acids and bases were combined to create a stronger, more pliable tortilla with a larger diameter.

"The more acid used in the recipe gave us more days before molding would occur, but the more acid used also lowered the opacity," Waniska said. "Getting a balance is the trick. All I've done is found that balance."

Recently, Waniska disclosed a second technology that presents a method of using certain wheat flour proteins to improve the overall quality of the tortilla. Combining the wheat flour proteins and oxidizing agents allows once unsuitable flours to be used in tortilla production.

"The second technology had a positive economic impact on the tortillas we were making," Waniska said. "But it also did what the first one did, and that was improve shelf-life by 50 percent without sacrificing quality."

Shelf-life, defined by Waniska as the retention of fresh characteristics over a period of storage time, was once again improved dramatically with a third disclosed technology. He determined that by lowering the amount of sodium bicarbonate, the tortilla would exhibit longer shelf life. His third technology presented a method that did just that.

Each of the three technologies work independently, contributing their own method of improvement. A&M researchers are currently designing ways to combine all three methods.

Waniska tries to downplay his tortilla accomplishments, but the potential he has uncovered promises to change the tortilla market altogether.

"It's really pretty simple. I just kind of found the right formulas at the right times," he said. "But I think consumers will really enjoy what we've done."

One consumer, John Dearinger, a junior electrical engineering major, is already excited about the possibility of better tortillas.

"My family and I love tortillas. We eat them quite a bit, especially my two little girls," Dearinger said. "It would be great if they would last longer and be healthier for you all at the same time. Even if they cost a little bit more, I would probably buy them."

Embryonic cell use unethical, panel says

By Foster Klug
THE ASSOCIATED PRESS

BALTIMORE — A medical ethics panel said Monday it would be unethical and risky to treat people with the embryonic stem cells approved by President George W. Bush for federally funded research.

The approved cell lines, created for possible future disease treatments, were initially grown on mouse cells. That could expose humans to an animal virus their immune systems couldn't fight, the panel said. The experts said that safer stem cell lines now exist, but those would not be eligible for federal funding.

The ethics panel announcement was the latest sign of the friction between stem cell scientists and Bush, who two years ago set limits on the controversial research which destroys human embryos.

Earlier this year, the director of the National Institutes of Health called on the president to lift the restrictions. And a number of scientists note that research into stem cells is progressing overseas.

A spokesman with Bush's Health and Human Services Department said no one was available to comment on the ethics panel finding.

The medical ethics panel, which included scientists, philosophers, ethicists and lawyers from the United States and Europe, was formed by Johns Hopkins University to study the ethical questions arising as stem cells move from research to human trials and, possibly, to human therapy.

Embryonic stem cells have the ability to grow into all kinds of cells, and they are sought as potential treatments for victims of Alzheimer's and Parkinson's disease, diabetes and spinal cord injuries.

But because embryos discarded from fertility clinics are a major source of stem cells, the issue has sparked an ethical debate.

On Aug. 9, 2001, the president announced that federal money would be granted for research using only stem cell lines created by that date. That way, he hoped to stop the destruction of future human embryos.

Anti-abortion groups say stem cell research is tantamount to murder because it starts with the destruction of a human embryo to recover the cells.

And Pope John Paul II on Monday denounced as "morally contradictory" any medical treatment based on stem cells taken from embryo tissue. Vatican teaching holds that life begins at conception.

Bush has also called for a ban on human cloning — including the cloning of embryos solely to cull stem cells for research.