The Ruckus Over Ratites

Some farmers see big birds earning big bucks

By GIGI MARINO

At dusk in the east Texas town of Montgomery, the pale golden sky gives way to striations of pink and plum light. In the distance, on the Cartwright farm, cows converse in low baritones.

From somewhere farther away on this 246-acre spread comes a surprising sound: a gentle, jazzy timbre, resonating like a bass.

Music, yes, but not exactly strings. It's the love call of the high-stepping emu (pronounced ee-myoo), a large, flightless bird that is appearing with increasing frequency on farms and ranches not only in the United States, but around the world.

Duncan and Bitsy Cartwright have raised emus since 1989, when they first saw this odd bird at the Houston Livestock Show. Today, they have 33 breeder pairs and over 200 chicks.

"I got interested in agricultural diversification," says Duncan. "Products of the bird have a lot of potential. And agriculture needs all the entities it can to be profitable." As Duncan points out, birds can be raised on a fraction of the land required for cattle or hogs. His entire emu flock exists happily on 4 acres.

The emu belongs to an order of birds known as ratites (Strunthioniformes), which are characterized by their lack of a keel on the breastbone. There are four suborders of ratites: rheas, ostriches, cassowaries and emus, and kiwis.

Earth-bound and top-heavy, these birds look like primordial turkeys: tiny heads, big bodies, and skinny legs. Indeed, the ostrich has its origins in the Eocene epoch, about 55 million years ago.

Currently, ostriches, emus, and rheas are raised commercially in the United States. An adult ostrich can grow as tall as 8 feet and weigh as much as 450 pounds; the emu may reach 5 or 6 feet in height and weigh 110 to 150 pounds; and the rhea can grow to 5 feet with a weight of 60 to 80 pounds. Although their native habitats differ—the ostrich comes from Africa, the emu from Australia, and the rhea from South America—they are raised for similar products, namely, oil, meat, leather, and feathers.

B. McLaughlin

White rhea

All three of the birds can be eaten. Indeed, their meat offers a key selling point: It's lean, red, and tastes like beef. Margaret Craig-Schmidt of Auburn (Ala.) University has been conducting tests on the fat content of emu meat. "Preliminary results show it's as least as good as chicken [in its lean qualities] and probably better," she says.

According to Jack Haslam, a veterinarian at the Australian Embassy in Washington, D.C., the Aborigines have long used emu oil as a pain-relieving emollient. And, he adds, many members of the Australian medical community believe the oil has healing properties.

No scientific data from the United States support the oil's reputed anti-arthritic and anti-inflammatory powers. Even so, more than 40 professional U.S. sports teams (including one-fourth of National Basketball Association teams) use it as a "massage oil," says Michael Reeves of Outback Secrets, an Addison, Texas-based company that markets the substance in the United States.

Joe Haid, editor of several magazines about the ratite industry, says emu oil is an "inert ingredient" in sunscreens, shampoos, perfumes, and lotions. Also, says Haid, fashion designer Donna Karan uses the oil in some of her skin-care products, putting the aboriginal name, "kalaya," in the list of ingredients. The majority of emu oil used in lotions comes from Australia.

Though no one knows exactly how many ratites there are in the United States, industry insiders put the figure at between 100,000 and 200,000 birds.

Zoann Parker, a ratite specialist at the Penn State Cooperative Extension in Lancaster, Pa., says that the ratite industry of the 1990s reflects trends in the cattle industry of the 1800s, which also started as a breeder market.

As those early ranchers knew, rustlers can pose a problem. But unlike the solution of branding cattle, these avian livestock get "microchipped" instead. The chips emit a signal, "like a social security number," according to Parker, and are small enough to slip into a hypodermic needle. Soon after the bird's birth, the microchip is injected into its fatty tissue or muscle, "causing no harm to the animal whatsoever," he explains. The bird can then be identified with a handheld microchip reader.

"Every bird must be microchipped in order to be transported across state lines or be insured," says Parker. "You'd have to literally tear the bird apart to get the chip out."

Parker notes that the ratite industry is high-tech "and the technology is changing weekly." For example, it is impossible to discern the sex of birds visually. So the old-fashioned method of vent sexing—which involves turning the bird's cloaca inside out and looking for the male sex organ—is rapidly being replaced by DNA testing.

Zoogen, a Davis, Calif.-based private laboratory, conducts much of the DNA analysis for ratite ranchers; it also provides analyses for many zoos. Through DNA fingerprinting, Zoogen can advise bird owners not only of their birds' sex, but of their genetics—vital knowledge for those concerned with breeding programs and the creation of pedigrees.

Parker says that because of trade regulations, most ratites must be bred in the United States. Though available from other countries, live emus can't be exported from Australia, and the importation of ostrich chicks and eggs is highly regulated in the United States. This can cause headaches for breeders and owners.

For instance, the white rhea is more valuable simply because of its color. But white color is a recessive genetic trait that is often accompanied by other, less desirable features, such as leg problems, notes Parker. The North American Ratite

Registry, a service of Zoogen that lists more than 60,000 birds, may help owners control the genetic makeup of their animals.

DNA testing requires a drop or two of blood. But in West Jordan, Utah, Mark Rosenfeld, president of Ratite Reproduction and Nutrition Research, is developing a noninvasive DNA test that will require only a bit of feather.

Rosenfeld, who until last year worked as a molecular biologist at the University of Utah School of Medicine in Salt Lake City, left academia to pursue ratite research full-time. "In the industry, there isn't enough science about feeding and reproduction," he says. "First, we must work on nutrition: Healthier animals will reproduce better."

The ratite industry is a young one; formal research began only about 5 years ago. Indeed, according to an article in the Feb. 23 CHRONICLE of HIGHER EDUCATION, "the emu breeding craze is creating a small growth industry for colleges and universities."

A number of schools, among them Texas A&M University, Texas Tech University, Mississippi State University, and Louisiana State University, are investigating the nutritional and medical needs of ratites, as well as other factors related to the birds' viability as agricultural products. At Texas A&M, graduate students Shawn Harris and Craig Morris just completed a 2-year study of the fat content of ostrich meat—and consumer reaction to it.

Says Morris, "It was low-fat—2 to 4 percent—and worked well in [meat] products," such as steaks, hamburgers, and sausages. "The panelists testing the product had no problem with it," he adds.

Ratite products have also drawn the attention of independent laboratories. The Institute of Advanced Manufacturing Sciences in Cincinnati is currently testing rhea oil as a biodegradable alternative to "cutting oils," which reduce friction during the metal-cutting process. In the past, according to the institute's William Zdeblick, vegetable and animal oils have exhibited problems with rancidity, bacteria control, and shelf life.

"I'm happy and tentative," Zdeblick says, "because finding biological-based lubricants has become a major issue in industry. . . . We're looking for fluids that offer recycling benefits." The rhea oil tests will be completed in August.

The ratite industry has critics who warn that investing in "exotic" animals can prove a risky venture. George Greaser, an agricultural economist at Pennsylvania State University in University Park, says that those eager to jump into the ratite market should consider the difficulty of breeding relatively unknown birds. They should also remember the case of the Vietnamese pot-bellied pig. In the late 1980s, people invested thousands of dollars in these miniature porcine pets, only to discover later that they couldn't even give them away.

But you can't really compare a Vietnamese pot-bellied pig to an emu, counters Parker, because the pig doesn't produce any agricultural products.

Right now, the focus of ratite ranching is on breeding. And getting into the game is expensive. Parker warns that if prospective buyers can't afford to lose their money, they shouldn't invest. A pair of 3- to 4-month-old emu chicks sells for about $8,000. This, added to the cost of feed, insurance, utilities, and miscellaneous supplies, can quickly push an initial investment to $20,000.

These high costs and the risky nature of investing in a new agribusiness have led some to predict that ratite ranching has no future. Says Parker, "I'll be happy to prove them wrong."

In east Texas, Duncan Cartwright believes the industry represents much more than a passing fad.

"We have a co-op, Emu Ranchers of Texas, and we're harvesting products, slaughtering the birds for meat, leather, skin. I had boots and a billfold made. My wife's even got a cape made from feathers. . . . We're making headway in product development, and we haven't had any losses here." □