Modern Turkey: Modern Miracle

November 18 2009

(PhysOrg.com) -- Many of us will sit down with our families to a wonderful turkey dinner this Thanksgiving. But statistics increasingly show that Americans consider turkey a year-round staple.

The National Turkey Federation says that per-capita consumption in 2008 was 17.6 pounds per person in the U.S - up from 17.5 pounds per person just last year. Since 1970, turkey consumption is up 108 percent! The Turkey Federation says "Although 50 percent of all turkey consumed in 1970 was during the holidays, today that number is around 29 percent as more people enjoy delicious turkey year-round." Turkey is available in a wide variety of products these days. But few Americans give any thought about where their turkey really comes from.

In fact, today's turkey has been developed and bred to specifically meet the tastes of 21st Century Americans. It's a modern miracle of sorts, that

Maryland faculty expert Dr. Nickolas Zimmermann knows from start to finish.

An associate professor of animal and avian sciences at Maryland, Zimmermann can tell you everything you need to know about turkeys.

Q: Is the turkey we put on the table today at Thanksgiving considerably different than the one the Pilgrims found out in the wild?

Turkeys in the days of the Pilgrims were similar to the wild turkeys that are now abundant in most states of the nation. They have dark plumage and can fly. Modern turkeys have been bred to have large breast muscles, desired by consumers. Modern turkeys also have been bred to have white feathers, so that pigment from dark feathers does not blemish the skin. The selection process has been so successful that modern turkeys are too heavy to fly under most circumstances. That has also reduced their reproductive efficiency.

Q: Are wild turkeys smarter than today's farm-grown turkey?

Wild turkeys grow up in woodlands where only the alert survive. At any moment a fox or a hawk could threaten their life and they must constantly look for food. In comparison, modern turkeys are couch potatoes; food and water are always close and they are safe from predators.

Q: Is artificial insemination the only way farmers can really produce the "modern" turkey of today?

Not entirely. Modern large-breasted turkeys are able to mate in the traditional way. But this is a clumsy act for a large-breasted turkey, and insemination is hit or miss; mostly miss. This results in a high proportion of eggs not being fertile, thus fewer poults are hatched. Artificial insemination ensures that sperm are present to fertilize the hen's egg and increase the number of poults hatched.

Q: Despite the Swine Flu epidemic - Avian Flu continues to be a concern - will it ever have an impact on our Thanksgiving turkey?

All animals are subject to getting the flu, including turkeys. Hundreds of types of influenza virus exist and most are mild, but on rare occasions mutate into lethal strains. Flocks found to be infected are destroyed to prevent the possibility of lethal mutations that sicken other poultry. The "bird flu" scare is the result of a very rare mutation that infects not only birds, but sometimes people. That's why I'm so excited by the news of a bird flu vaccine developed in 2008 by my colleague Prof. Daniel Perez here at Maryland. The vaccine could be used to protect chickens, cats and humans against a flu pandemic.

Since 2006, Low Pathogenic AI H5N1 (LPAI H5N1 or "North American H5N1") has been reported in waterfowl in North America, including several states in the U.S., including Maryland, Illinois, New York and Michigan. The USDA has more information online (PDF file).

The North American H5N1 does not make waterfowl sick. To the best of our knowledge, no people have gotten sick from it either. Highly Pathogenic AI H5N1 (HPAI H5N1 or "Asian AI") is the avian influenza we fear because it could mutate into a human pandemic. Asian H5N1 has not been observed in North America.

As surveillance for Asian H5N1 in migrating wild waterfowl has increased throughout North America, we are also detecting North American H5N1 both in sentinel and hunter harvested waterfowl. This finding in not unexpected as North American H5N1 has been observed in America since 1975. Because it may take between 10 and 14 days to determine the type of AI, initial results are reported to the press, in the event Asian H5N1 is found.

Asian H5N1 continues to infect and kill people in the Eastern Hemisphere (262 people have died since 2003 out of a reported 442 cases), as well as most chickens and swans it has infected. Asian H5N1 has been spread by migratory birds and humans. This virus remains a threat throughout the world despite low media attention.

The greatest concern is that Asian H5N1, while infecting a person will change, allowing people to catch it from each other. This has not happened, it may never happen or it could happen today. See this poultry industry web site for more information. The key point is that our poultry supply is safe and wholesome to eat.

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