

AUBURN Veterinarian

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CALENDAR

Association of American Veterinary Medical Colleges (AAVMC) Annual Conference

March 8-11
Alexandria, Va.

105th Annual Conference
April 12-14

Open House
April 21

CVM Commencement
May 8

A woman with short brown hair and glasses, wearing a white lab coat, is working in a laboratory. She is holding a pipette tip in her right hand and a small vial in her left hand. The background shows laboratory equipment, including a fume hood and a computer monitor.

DR. TATIANA SAMOYLOVA

PIGS GONE WILD

RESEARCHERS FOCUS ON ORAL
CONTRACEPTIVE VACCINE TO
CONTROL INVASIVE SPECIES

BY JAMIE CREAMER

For Auburn University agricultural business alumnus David Pitchford, learning that researchers at his alma mater are working to develop an oral contraceptive for wild pigs is cause for celebration.

“That’s the most exciting thing I’ve heard in a long while,” Pitchford says from his Henry County farm. “Right now, there is no feasible way to get rid of them. Something like that (the contraceptive) would be the only way to have an impact.”

Pitchford speaks from experience. Since spying the first wild pig in a pasture on his southeast Alabama farm on Thanksgiving Day 2008, he has seen the population of the rooting, crop-ravaging animals explode, and neither shooting nor trapping puts a dent in it.

That’s largely because wild pigs are extremely prolific year-round breeders that can reach sexual maturity as early as six months of age and from that point forward bear two litters of, on average, six piglets each a year. With a gestation period of 115 days—“three months, three weeks and three days,” Pitchford says—a typical sow will have farrowed as many as two dozen piglets by age two. The current wild pig population nationwide is estimated at four million, and counting.

Enter the multidisciplinary research team at Auburn and its quest for an inexpensive oral birth control method that is highly effective in blocking fertility in wild pigs but not in other animals, says study leader Tatiana Samoylova. The associate research professor in Auburn’s College of Veterinary Medicine calls that “a species-specific immunocontraceptive.”

“An immunocontraceptive works in the same way a vaccine does





against a disease,” Samoylova says. “In this case, it would stimulate the animal’s own immune system to produce antibodies that interfere with certain events in the reproductive process.

“Current control programs that focus on wild pig eradication via trapping and shooting are expensive and ineffective,” she says. “Contraceptive vaccines can, over time, significantly reduce populations to manageable numbers and are more acceptable means of population control to the general public.”

In the project’s first three years—funded by grants from the Alabama Farmers Federation, the Alabama Ag Experiment Station and the veterinary college—the scientists developed and tested multiple antigens that can lead to infertility in wild swine. In lab testing, the most promising proved to trigger the production of anti-sperm antibodies.

“Those antibodies potentially could interfere with sperm delivery or genital-tract functioning, resulting in contraceptive effects,” Samoylova says.

Work on the project is ongoing, but Samoylova says new sources of funding will be necessary continue with the next phases of the study, in which the researchers will focus on development of a commercially viable species-specific immunocontraceptive in a bait that is highly attractive to wild pigs and conduct extensive testing of the product.

Samoylova’s co-investigators in the project are College of Veterinary Medicine researchers Nancy Cox, Valery Petrenko and Frank Bartol and, from the School of Forestry and Wildlife Sciences, Steve Ditchkoff.

For the record, “wild pigs” is the preferred term among wildlife ecologists such as Ditchkoff and, he says, is used to include both feral hogs, which actually are domesticated swine that have escaped captivity, and non-native wild boars that were first introduced into the U.S. from Eurasia in the early 1900s for sport hunting purposes. As an exotic species, wild pigs have no known natural predators here, a factor that exacerbates the wild pig problem.

And it is a problem, not only in Alabama, where the swine have strong-armed their way into all of the state’s 67 counties, but in at least 43 other states.

For Pitchford and other farmers statewide, these aggressive, highly intelligent and ever-ravenous creatures are a plague, causing an estimated \$44 million in crop losses statewide in 2009, mainly in corn and peanuts.

But the damage they inflict with their rooting, wallowing, trampling and gluttony extends far beyond the farm gate, to forests, water supplies, soils, turfgrass, native flora and fauna, reptiles, ground-nesting birds, young livestock and the overall environment. They also can transmit a number of serious diseases to livestock and to humans.

The use of immunocontraceptives as a nonlethal method for controlling the populations of nuisance or destructive wildlife species is not a brand-new concept. Such a vaccine has been approved for white-tailed deer, and, in addition, Samoylova and other scientists across the country are working on similar products for feral dogs and cats. Those vaccines, however, are not species-specific and must be injected into the animals.