Pigs, people may soon eat their way to flu resistance, say researchers

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(PhysOrg.com) -- A team of researchers from Iowa State University is putting flu vaccines into the genetic makeup of corn, which may someday allow pigs and humans to get a flu vaccination simply by eating corn or corn products.

"We're trying to figure out which genes from the swine influenza virus to incorporate into corn so those genes, when expressed, would produce protein. When the pig consumes that corn, it would serve as a vaccine," said Hank Harris, professor in animal science and one of the researchers on the project.

The project is a collaborative effort with Harris and Brad Bosworth, an affiliate associate professor of animal science working with pigs, and Kan Wang, a professor in agronomy, who is developing the vaccine traits in the corn.

The corn vaccine would also work in humans when they eat corn or even corn flakes, corn chips, tortillas or anything that contains corn, said Harris.

The research is funded by a grant from Iowa State University's Plant Sciences Institute, and is their Biopharmaceuticals and Bioindustrials Research Initiative.

The corn vaccine may be possible in 5 to 7 years if research goes well. Meanwhile, the team is trying to speed up the process.

"While we're waiting for Wang to produce the corn, we are starting initial experiments in mice to show that the vaccine might induce an immune response," said Bosworth.

Harris says the team still needs more answers.

"The big question is whether or not these genes will work when given orally through corn," said Harris. "That is the thing we've still got to determine."

One of the advantages to the corn vaccine is stability and safety.

Once the corn with the vaccine is grown, it can be stored for long term without losing its potency, say the researchers. If a swine flu virus breaks out, the corn could be shipped to the location to try to vaccinate animals and humans in the area quickly. Because corn grain is used as food and feed, there is no need for extensive vaccine purification, which can be an expensive process.

Traditional vaccines are made from animal culture or eggs that are in liquid form and last only 1 to 2 years.

The current outbreak of swine flu is affecting humans and has never been identified in pigs. If this swine flu crosses over into pigs, the scientists are hopeful that the corn vaccine would be effective to vaccinate uninfected pigs.

Provided by Iowa State University (news : web)

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