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## **New Study Shows Vegetables Fertilized with Manure are Contaminated with Antibiotics Given to Livestock, Pose Potential Human Health Threat**

St. Paul – Antibiotics given to livestock can end up in vegetables - posing a potential health threat to consumers who eat them - according to a groundbreaking study published online in the *Journal of Environmental Quality* (<http://jeq.scijournals.org/cgi/content/abstract/34/6/2082>). In the study, corn, cabbage, and green onions absorbed chlortetracycline from manure fertilizer obtained from pigs that were given this antibiotic.

Chlortetracycline is a member of the tetracycline class of antibiotics that are used in human medicine to treat upper respiratory tract infections and other illnesses. Tetracyclines and other antibiotics also are used as feed additives in poultry, hogs and beef cattle. Feed additives are not used to treat disease, but to promote slightly faster growth and to compensate for overcrowded and unsanitary conditions on industrial-scale farms. As the study points out, when antibiotics are ingested they can spur the bacteria naturally present in the intestinal tract, including types of bacteria that can cause serious disease, to become drug-resistant.

“Vegetarians may think the huge overuse of antibiotics in livestock and poultry will not affect them, but that’s not true for two reasons,” said Margaret Mellon, Ph.D, director of the Union of Concerned Scientists’ Food and Environment Program. “Consumers eating vegetables grown on soil fertilized with manure may be unknowingly ingesting antibiotics. Even more importantly, resistant bacteria that are created on the farm can contaminate air, water and soil that can travel significant distances.”

The new study, conducted by scientists at the **University of Minnesota**, included experiments using raw, uncomposted manure and soil to which antibiotics had been added. Manure is used as fertilizer in both conventional and organic agriculture. While raw and composted manure are used with little restriction in conventional agriculture, the U.S. Department of Agriculture’s National Organic Program *requires* that manure used in organic farming be composted or be applied at least 90 days before harvest. In this study, crops were harvested within only 42 days, so the study’s findings may not apply to organic vegetables.

“When the massive overuse of antibiotics in chickens, swine and beef cattle puts even the health of vegetarians at risk, it’s time to stop,” said David Wallinga, M.D., director of the Food and Health Program at the Institute for Agriculture and Trade Policy in Minneapolis. “Antibiotic resistance now threatens our ability to use antibiotics when we

really need them – to fight life-threatening infections in humans, pets and other animals. This is just the latest of many studies showing why Congress needs to act to keep our arsenal of antibiotics effective by passing legislation to phase out the routine use of antibiotics that are important in human medicine as feed additives.”

The Preservation of Antibiotics for Medical Treatment Act (S. 742/H.R. 2562), introduced by Senator Olympia Snow (R-ME) and Rep. Sherrod Brown (D-13th/OH), would phase out use of antibiotics that are important in human medicine as feed additives, unless the Food and Drug Administration concludes that this use is safe under modern scientific standards. The bill also requires drug manufacturers to report on the quantities of antibiotics produced for agricultural use and has been endorsed by more than 350 organizations including the American Medical Association, American Academy of Pediatrics and American Public Health Association.

The Union of Concerned Scientists estimates 70 percent of all antibiotics and related drugs used in the U.S. — about 25 million pounds annually — are routinely fed to poultry, swine, and beef cattle.

Previous studies show most antibiotics fed to animals are poorly absorbed in the animal gut and as a result up to 90% of these antibiotics are excreted in urine and feces. Land application of manure is a common practice in many parts of the world, including the United States, because of its value in supplying nutrients to crops as well as a means of disposing of unwanted waste.

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