Risk Assessment of the Potential Human Health Effect of Applying Continuous Inspection to Catfish

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This drug is FDA approved as an immersion for the temporary immobilization of fish. The approved dosage is 15-330mg/L and its use in fish intended for food is restricted to Ictaluidae, Salmonidae, Esocidae and Percidae. It has a withdrawal time of 21 days with no regulatory residue level.

Urea and Tannic acid

This is an FDA low regulatory priority aquaculture drug. The allowed use is to denature the adhesive component of fish eggs at concentrations of 15 g urea and 20 g NaCl per 5 liters of water for about 6 minutes, followed by a separate solution of 0.75 g tannic acid per 5 liters of water for an additional 6 minutes. This dose should treat about 400,000 eggs. There is no withdrawal time or regulatory residue level.

The following is a non-inclusive list of drugs used in foreign aquaculture. These drugs are currently not approved for use in aquaculture by the FDA.

Azamethiphos	Glucans	Nifurpirinol
Chloramphenicol	Isoeugenol	Nitrofuran
Dichlorovos	Ivermectin	Nitrofurantoin
Diflubenzuron	Josamycin	Nitrofurazone
Enrofloxacin	Kanamycin	Norfloxacin
Eugenol	Levamisole	Oxolinic Acid
Fenthion	Malachite green	Praziquantel
Flumequine	Methyltestosterone	Rifampicin
Furazolidone	Nalidixic Acid	Saponin

Sarafloxacin	Teflubenzuron	Tributyltin
Spiramycin	Testosterone	Trichlorfon
Streptomycin	Thiamphenicol	Trifluralin

AMDUCA prohibited drugs

The Animal Medicinal Drug Use Clarification Act (AMDUCA) of 1994 (21 CFR 530) allows veterinarians to use approved FDA drugs outside of there labeled species, indication, dose, frequency or route of administration so long as a valid veterinarian-client-patient relationship exists. This is called extra-label use. The following drugs are prohibited from extra-label use in food animals (21 CFR Part 530.41).

Chloramphenicol- broad spectrum antibiotic known to cause aplastic anemia in humans (U.S. FDA, 1992; Young, 2002)

Clenbuterol- β2 adrenergic agonist used as a growth enhancer and linked with acute poisoning of humans who consumed meat from animals given clenbuterol (U.S. FDA, 1991; Chan, 1999)

Diethylstilbestrol – synthetic nonsteroidal estrogen and a teratogen when given to pregnant women (U.S. FDA, 1999)

Dimetridazole – a nitroimidazole

Ipronidazole - a nitroimidazole

Other nitroimidazoles – antibiotic with mutagenic concerns (U.S. FDA, 2009)

Furazolidone – antibiotic and anti-protozoal whose residues in edible tissues are known carcinogens (U.S. FDA, 2002a)