Environmental Considerations for Animal Pharmaceuticals

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Animal drugs and feed additives are routinely used in high production agricultural animals. They can be used for therapeutic, production, or nutritional purposes and be administered for a short or extended period. Some drugs and additives may be completely metabolized to inactive components but some are excreted as active metabolites or parent substance. All of these residues are contained in the animal waste from cattle, swine, poultry, and fish facilities. Runoff and leaching from feedlots or aquaculture facilities can carry the remaining substances into surface and ground water. Manure and litter also are used or disposed of on land where it is incorporated into soil. Runoff and leaching to surface and ground water from land applications could also occur. The U.S. Food and Drug Administration, Center for Veterinary Medicine has conducted environmental reviews of many animal drug products. The reviews include information (for example, aqueous solubility and soil sorption) that can be used to determine the potential for a drug to enter surface or ground water. Additional information (for example, acute invertebrate toxicity and plant toxicity) often is collected that can be used to determine potential environmental toxicity. These data are used in environmental-risk assessments to estimate environmental impacts for the animal drug products.

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