PHARMACEUTICAL DOSAGE FORMS IN VETERINARY MEDICINE

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Chemical Residues in Foodstuffs of Animal Origin

Veterinary drugs are used routinely in animal production to manage diseases and control parasites, and crop protection chemicals are used in production of animal feeds.

Veterinarians must consider the implications of both possibilities when providing for the health and welfare of animals.

First, animals and animal products destined for human consumption must not contain residues of drugs that exceed legally permitted concentrations.

Second, pesticide residues in fiber have potential implications for public health, occupational health and safety, and environmental safety.

Chemical residues can be found in animal tissues, milk, honey, or eggs after administration of veterinary drugs and medicated premixes, application of pesticides to animals, or consumption of stock feeds previously treated with agricultural chemicals.

Extensive regulatory and monitoring systems have been established to ensure that chemical residues in food do not constitute an unacceptable health risk. The premarket approval process undertaken by regulatory authorities for new veterinary drugs and medicated feeds evaluates the quality, safety, and efficacy of these products.

The key parameters derived in the safety and residue evaluations

The acceptable daily intake (ADI) is the amount of a veterinary drug, expressed on a body weight basis, that can be ingested daily over a lifetime without an appreciable risk to human health.

The ADI is established based on a review of animal studies on toxicologic, pharmacologic, or microbiologic effects as appropriate.

The safe concentration is the maximal allowable concentration of total residues of toxicologic concern in edible tissue.

The safe concentration is calculated from the acceptable daily intake and considers the weight of an average person and the amount of meat, milk, honey, or eggs consumed daily by a high-consuming individual.

An maximum residue limits or tolerance, is the maximal concentration of residue resulting from the use of a veterinary drug (expressed in mg/kg or mcg/kg on a fresh-weight basis) that is legally permitted as acceptable in or on a food. It is based on the type and amount of residue considered to be without any toxicologic hazard for human health as expressed by the acceptable daily intake .

The marker residue is the parent drug, its metabolites, or any combination of these, with a known relationship to the concentration of the total residue in the last tissue to deplete to the safe concentration.

The withdrawal time is the period of time between the last administration of a drug and the detection of residues of that drug to levels below the maximum residue limits in food from a treated animal.

Regulatory authorities determine withdrawal times based on residue depletion data that has been generated using healthy animals representative of those typically treated with the specific product.

The drug formulation used in these trials is identical to the market formulation, which is administered at the maximal label rate.

The withdrawal time is usually determined statistically, taking into account variability among animals in drug disposition.

Why is the chemical residues in foodstuffs of animal origin form?

1.The period of purification from the remains
2.Pharmaceutical form
3.Application route
4.Drug type
5.Use of non-labeling drugs
6.The use of human medicines