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Antibiotic Residues - A Global Health Hazard

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Abstract

Use of Antibiotic that might result in deposition of residues in meat, milk and eggs must not be permitted in food intended for human consumption. If use of antibiotics is necessary as in prevention and treatment of animal diseases, a withholding period must be observed until the residues are negligible or no longer detected. The use of antibiotics to bring about improved performance in growth and feed efficiency, to synchronize or control of reproductive cycle and breeding performance also often lead to harmful residual effects. Concern over antibiotic residues in food of animal origin occurs in two times; one which produces potential threat to direct toxicity in human, second is whether the low levels of antibiotic exposure would result in alteration of microflora, cause disease and the possible development of resistant strains which cause failure of antibiotic therapy in clinical situations. A withdrawal period is established to safeguard human from exposure of antibiotic added food. The withdrawal time is the time required for the residue of toxicological concern to reach safe concentration as defined by tolerance. It is the interval from the time an animal is removed from medication until permitted time of slaughter. Heavy responsibility is placed on the veterinarian and livestock producer to observe the period for a withdrawal of a drug prior to slaughter to assure that illegal concentration of drug residue in meat, milk and egg do not occur. Use of food additives may improve feed efficiency 17% in beef cattle, 10% in lambs, 15% in poultry and 15% in swine. But their indiscriminate use will produce toxicity in consumers. WHO and FAO establish tolerances for a drug, pesticide or other chemical in the relevant tissues of food producing animals. The tolerance is the tissue concentration below, which a marker residue for the drug or chemical must fall in the target tissue before that animal edible tissues are considered safe for human consumption. Tolerances are established based on extensive toxicological studies of potential hazards of consumption to human.

Keywords: Antibiotic, Residues, Global Health, Hazard, Meat, Milk, Egg, Drug, Animals, Human, Toxicology, Treatment, Withholding period.