SECOND REPORT OF THE SCIENTIFIC COMMITTEE FOR ANIMAL NUTRITION ON THE USE OF NARASIN IN FEEDINGSTUFFS FOR CHICKENS

Opinion expressed 8 February 1984

TERMS OF REFERENCE (November 1980)

In reply to questions put by the Commission on the safety of use of narasin in feedingstuffs for chickens, the Committee, in its report of 14 April 1982 (*), considered that the proposed use could be admitted provisionally with a withdrawal period of at least five days before slaughter and that a reassessment would be envisaged when full data on the metabolism of narasin in chickens become available.

As additional studies have been carried out on the identity, the microbiological and biochemical activity of the major metabolites, and on the fate of tissue residues in chickens, the Committee expressed the following opinion.

OPINION OF THE COMMITTEE

1. Additional studies using narasin labelled with ^{14}C at several specific sites of the molecule confirmed that hydroxylation is the primary mode of narasin metabolism in chicken and that, among the six major metabolites isolated from chicken excreta, four are dihydroxy- and two trihydroxynarasins. Microbiological assays showed that these metabolites are 20 times less active than narasin on Bacillus subtilis. Individual biochemical testing of four of them (three dihydroxy- and one trihydroxynarasin) on rat liver cell mitochondria showed that they are much less effective than narasin in producing ionophorous effects.

(*) Reports of the Scientific Committee for Animal Nutrition, fourth series (1984), No EUR 8769, p. 41

2. Additional studies on tissue residues were carried out in chickens fed 100 mg ^{14}C-narasin/kg feedingstuff for five days. All residue levels decreased by more than 50% during the first day withdrawal. After three days withdrawal, the total radioactive residues, expressed as narasin, were of the order of 0.1 mg/kg in liver, 0.03 mg/kg in kidney and skin and 0.01 mg/kg in fat and muscle. These levels had slightly decreased after five days withdrawal.

   A chromatographic separation completed with a bioautographic assay showed that residues in liver, kidney and muscle contained no unchanged narasin (limit of detection : 0.005 mg/kg) and that the small amounts of unchanged narasin in fat and skin had disappeared after two days withdrawal.

3. On the basis of these data, the Committee is of the opinion that the use of narasin can be admitted without risks in feedingstuffs for chickens at the levels provisionally authorized (60 - 80 mg/kg) and with a withdrawal period of at least five days before slaughter.

REFERENCES

Dossiers Lilly Research Centre Ltd. (1983)