REPORT OF THE SCIENTIFIC COMMITTEE FOR ANIMAL NUTRITION ON THE EXTENSION OF USE OF SALINOMYCIN (E-766) TO THE FEEDINGSTUFFS FOR CHICKENS REARED FOR LAYING

(Opinion expressed, 25 September 1997; Text consolidated, 24 October 1997)

TERMS OF REFERENCE (JULY 1995, REVIEWED JUNE 1997)

The Scientific Committee for Animal Nutrition (SCAN) is requested to give an opinion on the following questions:

1. Has the use of Salinomycin (sodium salt of polyether of monocarboxylic acid, produced by *Streptomyces albus* E-766) under the conditions proposed for its use as an additive (see background) significant effects on the prevention of coccidiosis in the chickens reared for laying?

2. Is this use safe for the chickens reared for laying?

3. Does the proposed use result in residues on the eggs? If so, what is the qualitative and quantitative composition of these residues?

4. In the light of the answers to the above questions, are the proposed conditions of use acceptable?

BACKGROUND

In Accordance with the provisions of Council Directive 70/524/EEC [1], the use of Salinomycin (E-766) is authorised at Community level in the Annex I, Section D (Coccidiostats and other medicinal substances) , according to the conditions set up by Commission Directive 91/248/EEC[2] as follows (See Table I)

1 Concerning additives in feedingstuffs (OJ No L270, 14.12.70 p.1.) as amended by Directives 84/58/EEC (O.J. No. L319 8/12/84 p 13) and 93/114/EC (OJ L334 31.12.93, p. 24)

2 O.J. No. L124, 18/5/91, p.1

Table I. Annex I, Part D (Coccidiostats). Salinomycin (E-766)

Species or category of animal	Maximum age	Minimum content mg/kg of complete feedingstuff	Maximum content mg/kg of complete feedingstuff	Other provisions
Chickens for fattening	-	50	70	Use prohibited at least 5 days before slaughter. Indicate in the instruction for use "Dangerous for equines" "This feedingstuff contains an ionophore, simultaneous use with certain medicinal substances (e.g. tiamulin can be contra-indicated"

The Scientific Committee for Animal Nutrition has expressed its favourable opinion in its reports of July 1992 on the use of Salinomycin-sodium in feedingstuffs for Pigs and Rabbits on its reports of 10 July 1991 on the use of Salinomycin Sodium in feedingstuffs for pigs[3] and 7 July 1992 on the use of Salinomycin-sodium in feedingstuffs for rabbits for fattening[4]

It has been requested an extension of the use of Salinomycin (E-766) under the following conditions of use:

Table I. Annex I, Part D (Coccidiostats). Salinomycin

Species or category of animal	Maximum age	Minimum content mg/kg of complete feedingstuff	Maximum content mg/kg of complete feedingstuff	Other provisions
Chickens reared for laying	12 wk	30	50	Indicate in the instruction for use "Dangerous for equines" "This feedingstuff contains an ionophore, simultaneous use with certain medicinal substances (e.g. tiamulin can be contra-indicated"

A registration file has been submitted by the applicant firm

3 Eighth Series, ISBN: 92-826-7975-6
4 Ninth series; In press

PROVISIONAL OPINION OF THE COMMITTEE

(Pending the answer by the firm on the efficacy at the 30 µg/kg level)

1. Salinomycin has already been approved for chickens for fattening at 50-70 mg/kg in complete feedingstuffs following two favourable opinions (14 April 1982, 4th Series of the SCAN and 4 April 1984, 5th SCAN series) relative to the safety and the metabolism of the additive but without any statement on its efficacy for the prevention of coccidiosis in chickens reared for fattening. The lower level of inclusion of the additive to day requested in the feedingstuffs for the chickens reared for laying could not be extrapolated as far as its efficacy concerns. A new dossier has been presented for its application under new conditions for chickens reared for laying which provides information on the safety of Salinomycin for the target animals at the maximum inclusion level now requested, i.e. 50 mg/kg of complete feed.

2. Experiments were performed by feeding Shaver 288 and ISA Warren chickens with a diet supplemented with 50 mg/kg Salinomyin sodium or without the additive (controls) for 112 days during the prelaying period and results have been recorded in two different and consecutive periods, i.e. from day 1 to day 51 and from day 52 to day 112.

   The selected experimental level of inclusion has been the maximum requested for this new animal category (i.e. 50 mg/kg) since the results of previous trials (1978) with diets fortified with 80-90 mg/kg given for only 8 weeks could not be considered appropriate for the extension requested. The results obtained showed no statistical differences between treated animals and controls as far as weight gain and feed conversion index are concerned, despite the Salinomycin diet (50 mg/kg) in both observation periods reduced body weight gain by 6.8 and 5.8% (days 1-51 and days 52-112) respectively) in Shaver 288 birds and by 3.3. and 2.7% (during the same observation periods respectively) in ISA Warren birds. At the end of these periods the Salinomycin treated animals were characterized by more homogeneous bodyweights than controls. The evaluation of the feed conversion index showed a parallel negative effect (-4.8%) of the Salinomycin diet in respect to the unmedicated diet. These findings have been deeply discussed by the Committee since neither differences in feed consumption nor in mortality were observed between the two groups of experimental animals. The conclusions drawn were that the reduced growth performances in Salinomycin treated animals, already observed with other ionophores, are of a negligible degree and may be tolerated in view of the most important effect of Salinomycin in coccidiosis control.

3. The first eggs from pullets treated with a 50 mg/kg Salinomycin diet for 112 days were laid at different times by the two strains of birds under experiment: ISA Warren began laying just 3 days after the withdrawal of the Salinomycin supplemented diet while Shaver 288 birds delayed their laying 4 weeks following the withdrawal.

In any case the control birds in both strains began laying 1 week after their treated counterparts. The eggs (both yolk and albumen) were analyzed with a TLC-bioautography method with a detection limit of 10 ppb Salinomycin (= 10 µg/kg).

This method has been clearly described and appears credible both for accuracy and reliability. On the basis of the metabolic studies previously provided (dossier for broilers) only the parent compound was detected, its dihydroxy- and trihydroxyderivative metabolites, characterized by a very low biological activity, being present in trace amounts only.

Salinomycin residues were found only in yolk of the eggs laid by ISA Warren hens. Their presence lasted up to the 6th day of egg laying, i.e. following 9 days after the withdrawal of the Salinomycin fortified diet. Due to the dishomogeneity of the number of the eggs analysed every day, a curve of depletion of this residue cannot be plotted.

At the 3rd day of egg production, i.e. 6 days after the withdrawal of Salinomycin diet, the mean content of the additive has been calculated in 98.11 ng/g - 98 ppb. The eggs collected afterwards contained less and less residues of Salinomycin.

A consumer daily eating 3 eggs with this residual content would therefore intake a total amount of about 6 ug of Salinomycin, a very low amount which must be considered harmless for the consumer by being far lower (between 1/25 and 1/100 respectively) than the ADIs calculated at 150 ug/person (Doc SCAN/93/081 on Salinomycin for pigs) or at 600 ug/person (Doc SCAN/95/117 on Salinomycin for rabbits).

No residues were ever found in eggs (yolk and albumen) laid by Shaver 288 birds probably based on the long interval from the withdrawal of the Salinomycin diet and the beginning of egg laying by this strain of birds.

For these reasons the study relative to the possible influences of a Salinomycin diet given to pullets reared for laying is sufficient to exclude risks for the consumer.

4. In the light of the evidence and pending an answer from the firm about the efficacy of the low level of inclusion (30 mg/kg) of Salinomycin in the feed for pullets reared for laying the Committee expresses the opinion that the use of Salinomycin for this new category of poultry at the levels requested (30 - 50 mg/kg), could be admitted with the provisions indicated in the background section and with a minimum of 6 days of withdrawal of the fortified diet before collecting layed eggs, because there are no concerns for the safety either of the target animals or of the consumers of eggs produced by them.

REFERENCES

File submitted by Hoechst