INCOMPATIBILITY BETWEEN LASALOCID AND CHLORAMPHENICOL IN BROILER
CHICKS AFTER A LONG-TERM SIMULTANEOUS ADMINISTRATION

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ABSTRACT


Two growth experiments were conducted to evaluate in broiler chicks the compatibility between lasalocid medication in the feed (at 90 or 125 ppm) and a long-term administration of chloramphenicol either via the feed (500 ppm) or via the drinking water (500 mg/liter).

The simultaneous administration of lasalocid and chloramphenicol generally caused severe growth depression, decreased feed intake and impaired feed conversion. Several chicks showed evident symptoms of intoxication, such as ataxia, leg weakness and paralysis. The development and frequency of these symptoms were dependent on the dosage of lasalocid and on the duration of the simultaneous administration.

Biochemical examinations (Experiment 2) revealed in the affected chicks significant changes in several parameters, in particular a markedly increased activity of creatine kinase and GOT in the plasma. It confirmed that the observed leg weakness and paralysis were caused by myodegeneration.

INTRODUCTION

A known incompatibility of several ionophore anticoccidials (monensin, salinomycin, narasin) with the semi-synthetic antibiotic tiamulin in poultry confirms a demand for continuous evaluation of reciprocal compatibility of currently used veterinary drugs. Extensive compatibility studies of ionophore anticoccidials with various antibiotics and chemotherapeutics were published recently (Frigg et al., 1983) and this paper includes a review of available literature on this topic.

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Chloramphenicol, as one of the classical antibiotics, is still used for a treatment of certain poultry diseases. Dorn et al. (1983) reported an intoxication in turkey poults due to the simultaneous administration of monensin in the feed (100 ppm) and chloramphenicol in the drinking water (500 mg/liter). This intoxication occurred only after oral administration of both drugs and the affected birds exhibited dyspnoea, difficulties in moving and paralysis of hind limbs. Mortality reached 10 % and histological examinations revealed an extensive myodegeneration. The observed symptoms were comparable with the clinical signs of monensin toxicity in adult turkeys (Stuart, 1978; Weisman et al., 1980; Halvorson et al., 1982).

In broiler chicks, even a 3-day simultaneous administration of ionophore anticoccidials (lasalocid, monensin, salinomycin) in feed with chloramphenicol in the drinking water (500 mg/l) resulted in significant adverse interactions for performance parameters, but no direct influence on health status was observed (J. Broz and M. Frigg, unpublished results, 1983). Recently, Mazlum et al. (1985) reported in broilers adverse interactions between monensin (100 ppm), narasin (70 ppm), or salinomycin (60 ppm) in the feed and the combination of chloramphenicol (500 mg/l) and erythromycin (500 mg/l), given simultaneously in the drinking water for 8 days. The birds medicated with the mentioned combinations showed leg weakness and paralysis, water intake was reduced by 60 %, serum creatine kinase was increased 19 to 30 times, and growth performance data and mortality rate were significantly affected.

In the year 1984, a clinical case of intoxication after a long-term concurrent administration of lasalocid (90 ppm) and chloramphenicol (500 ppm) in the feed was reported from Israel (B. Perelman, personal communication, 1984; Perelman et al., 1985). Morbidity reached 40 - 50 % and the affected birds exhibited a markedly depressed performance, severe ataxia, leg problems ("toe walking") and partial paralysis.

The purpose of our experiments was to verify and study this phenomenon under controlled conditions.