

DANISH CENTRE FOR EXPERIMENTAL PARASITOLOGY

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Helminthology

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Re: Evaluation of the effect of Stalosan F on poultry endoparasites

Production losses are significantly higher in organic table egg production systems compared to conventional intensive indoor production systems. No methodical analysis of the cause of the higher mortality and morbidity in the organic production of poultry is available at present. However, investigations have shown that infections with intestinal roundworms such as *Ascaridia galli*, *Heterakis gallinarum* and *Capillaria obsignata* are highly prevalent in organic production systems. Infections with such endoparasites have been estimated to cause production losses in the range of 10-20% due to impaired feed conversion, reduced growth and egg production, and increased mortality. *H. gallinarum* is of additional importance due to its ability to transfer the protozoa *Histomonas meleagridis*, which causes Blackhead in poultry. Furthermore, a recently completed study at our department showed that eggs from *A. galli* can transfer *Salmonella enterica* to chickens. Additionally, ongoing investigations suggest that endoparasites have a direct impact on the behaviour of chickens, which may induce increased cannibalism.

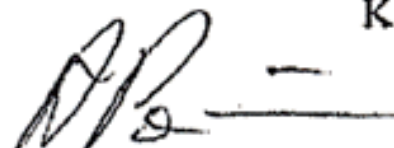
The potentially high level of disease in the organic production of broilers and eggs for consumption, together with anthelmintic regulations in force, show a marked need for alternative methods of parasite control in organic poultry production.

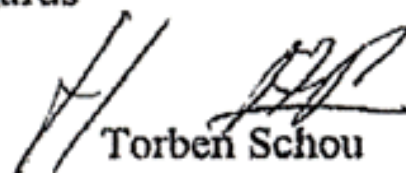
The undersigned have examined whether Stalosan F could be an alternative or supplement in the control of endoparasites in poultry. Our intention was to investigate the effect of Stalosan F on three commonly occurring endoparasites in poultry, i.e. *A. galli*, *H. gallinarum* and *C. obsignata*, under laboratory conditions and in the field. These investigations have recently been completed and the final report is in preparation. In short, the results suggest that Stalosan F does have an effect on these parasites. In one experiment, a house heavily contaminated with *A. galli* eggs was parted in two pens; Stalosan F was applied to one pen, whereas the other pen was left as untreated control. Twenty-five day old chicks were introduced to each pen, and, seven weeks later, slaughtered and examined for the presence of *A. galli*. The chickens from the Stalosan F treated pen, were found to harbour significantly fewer adult worms than the chickens from the untreated pen. However, no differences were found between the two groups in the total number of worms (larvae and adults) recovered. It therefore seems that the development from larvae to adult worm was arrested by the use of Stalosan F. This could be of importance to the epidemiology of the worms, since it would decrease the reproduction rate of the worms hereby reducing the number of parasite eggs in the pen.

Another experiment, where eggs from *A. galli*, *H. gallinarum* and *C. obsignata* were exposed to Stalosan F in the laboratory and afterwards administered to 4 week old chickens, showed that the infectivity of the eggs were significantly reduced as compared to non-treated eggs. This suggests that Stalosan F may have a sublethal effect on the abovementioned parasite eggs.

Therefore, we believe that regular use of Stalosan F in organic poultry production systems may contribute to the control of parasites in poultry production.

Kind regards


Anders Permin


Torben Schou

Evaluation of the effect of Stalosan F on poultry endoparasites

poultry nr.	Control	Stalosan F
1	1	0
2	0	0
3	0	0
4	3	0
5	0	0
6	0	0
7	0	0
8	0	0
9	21	0
10	0	1
11	0	0
12	1	1
13	8	0
14	0	0
15	25	0
16	1	0
17	17	0
18	0	0
19	25	0
20	1	0
21	0	0
22	22	0
23	0	0
24	0	0

25	8	0
Total	133	2

Interim table showing number of adult *Ascaridia galli*, *Heterakis* ssp., *Capillaria* ssp. found in 2 X 25 chicken in an investigation done by Director Anders Permin, DVM, Ph.D. og Mr. Torben Schou, Ph.D. Student, Royal Veterinary and Agricultural University, Denmark.