

دراسة كفاءة عقاري الباي كوكس والسوفرافيتامين  
في علاج كوكسيديا الطيور

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أجريت هذه الدراسة على أربعة مجموعات من الكتاكيت من نوع اللومان عمر أسبوعان (كل مجموعة ٢٠ كتكوت) وقد تم عدوي المجموعات الثلاثة الاولى بجرعة واحدة من حويصلات الایمیریا من نوع التینیلا في معلق ثنائي كرومات البوتاسيوم أما المجموعة الرابعة تركت بدون عدوي لاستخدامها كمجموعة سليمة (مقارنة) •

تم علاج المجموعة الاولى بعد ٦ أيام من العدوي بجرعة لمدة يومان من عقار الباي كوكس أما المجموعة الثانية عولجت جرعة واحدة لمدة يوم واحد من عقار السوفرافيتامين بينما تركت المجموعة الثالثة بدون علاج •

ولقد أوضحت النتائج انخفاض معنوي في معدل ترسيب كرات الدم في المجاميع الثلاثة الاولى بالإضافة الى حدوث انخفاض ملحوظ في الوزن وخاصة في اليوم السادس من العدوي •

وفي اليوم التاسع بعد العلاج لوحظ زيادة مطردة في الوزن بالنسبة للمجاميع المعالجة (الاولى والثانية) بينما نفقت جميع الكتاكيت في المجموعة الثالثة •

لقد أظهرت هذه الدراسة كفاءة عقاري الباي كوكس والسوفرافيتامين في علاج كوكسيديا الطيور لما أحدثه العلاج من تعديل ظاهر في الوزن ، الا أن طول مفعول كلا من العقارين أدت الى تحسن كبير في معدل ترسيب كرات الدم والوزن لذلك توصي باستخدام العقارين في علاج كوكسيديا الطيور في مصر وذلك لما لهما من ميزات اتضحت بالدراسة وتشمل قصر مدة العلاج وطول مفعول العقارين وأيضا احتواء عقار السوفرافيتامين على فيتامين ك الذي له قدرة كبيرة على وقف النزفة •

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**SOME STUDIES ON THE EFFICACY OF BAYCOX  
AND SOFRAVITAMINEE FOR CONTROLLING  
OF AVIAN COCCIDIOSIS**

(With 2 Tables)

By  
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**SUMMARY**

Two weeks old white lohman male chickens were infected with a single dose of sporulated oocysts suspension of Eimeria tenella in potassium dichromate.

Pathogenicity of this parasite and its effect on packed cell volume (PCV) and growth rate of infected and control birds were assessed using 40.000 sporulated oocysts/bird.

Chemotherapeutic trails indicated the efficacy of both Baycox (Bayer) and Sofravitaminee - (Distrivet) in the treatment and control of coccidiosis in chickens in Egypt. This is due to their out standing efficacy, short period of administration and growth promoting character.

**INTRODUCTION**

Avian coccidiosis is an economically very important parasitic infection responsible for great losses in poultry industry all over the world. These losses are due to high morbidity and mortality rate in young birds and the costs of treatment and control of the disease. This trial was planned to study the efficacy of Baycox and Sofravitaminee in the treatment of Eimeria tenella in chickens.

**Baycox:**

Is a drug for the treatment of coccidiosis in poultry (chickens and turkeys). It contains as active ingredient BAY Vi 9142 or toltrazuril (prop. INN), a compound from the series of the symmetrical triazinetriones. This substance is active against a number of protozoa, as observed in far-reaching screening tests. The aim of the clinical studies was therefore to confirm the suitability of Baycox as a coccidiotherapeutic agent.

**Sofra Vitaminee:**

Sofra Vitaminized soluble powder 20% associates vit. K to Framycetin sulphate exerts an antibiotic activity against enterobacteriaceae and an anticoccidiosis activity against numerous Eimeria found in different animal species. Vit. K is effective against haemorrhages which frequently occur in intestinal infections.

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N. DEGHIDY &amp; M. EL-ASKALANY

**MATERIAL and METHODS****Source of infection:**

A suspension of 90% sporulated *Eimeria tenella* oocysts in potassium dichromate was kept at 44°C until needed for experimental infection. Dose of infection was 40,000 sporulated oocysts/birds. Route of infection orally.

**Experimental bird:**

A group of 80 male lohman male, 2 weeks old, were used for infection on a top floor. The birds received water and coccidiostase free food were shown to be free from any coccidial infection by faecal examination using the salt floatation technique. The birds are divided into four groups each containing 20 birds.

**Group A:** Experimentally infected and treated with Baycox (Bayer) at a dose of 25 ppm orally for 2 days.

**Group B:** Experimentally infected and treated with Sofravitaminee (Distrivet) at a dose rate 30 mg/kg body weight orally for one day.

**Group C:** Experimentally infected untreated and kept as a positive control.

**Group D:** Non-infected and kept as a negative control.

Faeces were collected and examined daily from 3rd day for the presence of oocysts.

After the appearance of oocysts in the faeces, treatment was carried out.

Blood samples: Blood was obtained from the bracial vein every 3 days using heparinized capillary tubes, and the packed red cell volume (PCV) was determined using Hawksley Micro-haematocrit centrifuge.

Blood samples were taken also when birds were weighed.

**RESULTS****Pre-patent period:**

Faecal samples were collected and examined daily from 3rd day post-infection, unsporulated oocysts were first found on 6th day post-infection.

Clinical finding: Four birds died from group A on 6th & 7th day post infection. Four out of Twenty died in group B on 5th day after infection.

All birds died in group C, 15 days post infection, while all controlled birds in group B lived. No signs of disease were seen in the first three days after infection but on 4th day all infected birds showed depression, anorexia, as well as blood in the droppings. During 5th & 6th day the infected chickens were weak and listless.

**Post-mortem finding:**

Blood and necrotic materials in the caecal lumen, with petchial haemorrhage, whitish spots and distension of the caecal wall were seen, in all birds which died during the acute stage of the disease. The caeca were enlarged to twice their normal size with lumen completely filled with dark blood and blood clots.

## AVIAN COCCIDIOSIS

The packed red blood cells volumes (PCV) of the infected birds were compared with the mean values of the control non-infected group and after the treatment with Baycox and Sofravitaminee over a period of 15 days. The average PCV in the control negative group was 32% while there was a marked drop on 6<sup>th</sup> day post infection which reached  $10.00 \pm 2.00$ ,  $7.5 \pm 1.20$  and  $7.9 \pm 1.30$  in group A, B and C respectively. Nine days after treatment the PCV values returned nearly to normal.

The weight loss of the infected groups was marked during the acute phase of the disease. Six days after infection, there were marked drop of body gain 118, 120 and 108 grammes in groups A, B and C respectively while in group D (non-infected group) was 148 grammes.

Nine days post-treatment with Baycox and Sofravitaminee there were gradual increase of body gain while all birds at group C died (Table 2).

Faecal examination revealed negative results from 2-3 days post-treatment and remain so up till end of the experiment.

All clinical signs observed during the course of the disease disappeared and chickens became normal after treatment.

## DISCUSSION

Despite the large amount of work already done on avian coccidiosis, this parasite infection remains one of the most important disease problem in poultry industry. Therefore, in the last years increasing attention had been given to the detection of resistant strains which have developed in response to intensive chemotherapeutic control measures.

In the present work the assessment of the efficiency of the drug used was based on stopping production of oocysts in birds faeces, the appearance of clinical symptoms and returned back of haematocrit values to normal.

It was obvious that using 40,000 infective sporulated oocysts produce clearly defined pathological changes and clinical diseases which were monitored by changes in growth, PCV and mortality rate. Our results confirm the suitability of Baycox as coccidiotherapeutic agent which in agreement with JOYNER and DAVIES (1960). HECTOR-RINZ (1977) using BAY VI 9142 in chickens at a dose rate of 25 ppm in drinking water for 2 days. Also our results go parallel with the results already obtained by KHABERKORN (1982); MUNDT (1984, 1985-a & b and 1986), who mentioned that Baycox was fully effective against *Eimeria tenella* infection.

Use of sofravitaminee (powder soluble 20%) was superior in the treatment of coccidiosis in chickens. It showing no deaths, during the course of treatment, due to its antibiotic activity against enterobacteriaceae and presence of vit. K which was effective against haemorrhage (NABILA, et al. 1985).

We believe from the results obtained in the present study that on a national scale, the use of both drugs in the treatment and control of coccidiosis of chickens in Egypt was suggested due to their outstanding efficacy, the short administration period and growth promoting agent (Table 1 & 2).

## N. DEGHIDY &amp; M. EL-ASKALANY

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## AVIAN COCCIDIOSIS

Table (1)  
Mean values of Microhaematocrit of control and experimentally infected groups of chickens with *Eimeria tenella* pre- and post- treatment with Baycox and Sofravitaminee

Haematological values	Groups of chickens			
	Group A	Group B	Group C	Group D
Pre-infection	31.9 $\pm$ 1.30	32.0 $\pm$ 1.45	31.9 $\pm$ 2.12	31.6 $\pm$ 1.95
3 days post infection	29.8 $\pm$ 1.83	27.0 $\pm$ 2.45	30.2 $\pm$ 1.97	32.0 $\pm$ 1.73
6 days post infection	10.00 $\pm$ 2.00	7.5 $\pm$ 1.20	7.9 $\pm$ 1.30	32.2 $\pm$ 1.40
After treatment				
3 days post treatment	21.50 $\pm$ 3.00	17.5 $\pm$ 1.36	6.9 $\pm$ 0.90	31.8 $\pm$ 0.002
6 days post treatment	26.70 $\pm$ 1.90	26.6 $\pm$ 2.69	16 out of 20 were died	31.1 $\pm$ 1.04
9 days post treatment	31.50 $\pm$ 0.92	1.0 $\pm$ 1.34	all died	31.0 $\pm$ 1.48

Group A: Experimentally infected & treated with Baycox.

Group B: Experimentally infected & treated with Sofravitaminee.

Group C: infected control.

Group D: negative non infected control.

Table (2)  
Mean weight gain with grammes of control and experimentally infected groups of chickens with *Eimeria tenella* pre and post treatment with Baycox and Sofravitaminee

	Group A	Group B	Group C	Group D
Initial vaules	108.0	108.0	110	112
3 days post infection	125.0	124.0	134	134
6 days post infection	118.0	120.0	108	148
9 (3 days post treatment)	143.2	145.6	126	162.4
12 (6 days post treatment)	166.1	162.7	16 our of 20 died	189.8
15 (9 days post treatment)	189.2	181.3	All birds died	207.8

Group A: reated with Baycox

Group B: treated with sofravitaminee.

Group C: infected control.

Group D: negative non-infected control.

N.B. : Treatment started 6 days post infection.