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**TREATMENT OF SETARIA EQUINA INFESTATION  
WITH IVERMECTIN (22, 23-DIMYDROAVERMECTIN B)  
UNDER THE EGYPTIAN ENVIRONMENTAL CONDITIONS  
(With 1 Table & 1 Plate)**

By  
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علاج إصابة السيتاريا اكوينيا بالايڤرمكتين  
تحت الظروف البيئية المصرية

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تم علاج عدده ( خمسة ) خيول مصابة بالسيتاريا اكوينيا بـ  
الايڤرمكتين ( الايفوماك ، ميرك شازب ودهان ) جرعة اسم لكل ٥٠ جرام من وزن  
الحيوان / جرعة واحدة تحت الجلد وقد أعطيت نتائج طيبة بعد ٧ أيام  
من العلاج .

### SUMMARY

The effect of Ivermectin (Ivomec, MSD) on the Setaria equina infestation has been performed among five horses. The treatment by the injection 1.0 ml/50 Kg. B.W. at once dose S/C gave good results after 7 days post-treatment.

### INTRODUCTION

Setaria equina is a common parasite of equines all over the world. It inhabits the pleural and the peritoneal cavities and sometimes in the scrotum causing fibrinous inflammations (SOULSBY, 1982). It may also produce functional disorders which lead to death (ORLOV, 1947) and chronic septicaemia due to metabolic products of filarial worms in the blood (DAVI DOV, 1949). Many trials have been carried out to treat equine filariasis with stibophen (RAZIG, 1979) and ivermectin (KLEI, et al. 1980; EGERTON, 1981 and ZEIN EL-ABDIN, et al. 1983).

This study was conducted to illustrate the effect of Ivermectin on Setaria equina and its microfilariae in surviving animals. In addition it was intended to determine

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the exact time at which the drug produces its maximum effect on the circulating microfilariae (M.FS) in blood.

### **MATERIAL and METHODS**

Clinical and parasitological examination of seven horses reared in Gena province revealed the presence of Setaria equina infestation. These naturally infested horses (8 to 10 years-old mixed breeds) were divided into two groups. The first group contained five horses and the second group contained two horses (as control). Each horse in the first group was treated with a single subcutaneous injection of 1.0 ml Ivermectin (Ivomec, MCD) per 50 Kg. B.W. Animals of both groups were clinically and parasitologically examined 3 days before the injection of ivermectin as well as 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup>, 30<sup>th</sup> and 60<sup>th</sup> days post-treatment. Whole blood samples were obtained from the jugular vein using EDTA as an anticoagulant at mid-night as recommended by COLES, (1980) The blood samples were gently mixed and with the help of a tubercle syringe 0.25 ml of blood was spread along the length of a slide to form a thick blood film. Ten blood films from each sample were made, dried, dehaemoglobinized by acid water, air dried, fixed in methanol and stained with Giemsa stain after SHUTE (1966). Then the number of microfilariae in each slide was counted and multiplied by 4 to obtain the number of microfilariae per 1.0 ml blood.

### **RESULTS**

The clinical picture of the infested horses with Setaria equina before treatment showed that the scrotums were enlarged and swollen. In the mean time the prepuces were enlarged and floded. After the injection of ivermectin, the abnormal appearance of the scrotums and prepuces began to disappear gradually until they became normal 3 weeks post-treatment.

Table 1, Plate 1 displayed that the number of microfilariae in treated group greatly decreased after the injection of the drug with the presence of degenerated microfilariae, followed by slight increase and then began to decrease gradually (both normal and degenerated microfilariae) until complete disappearance from the blood on the 8<sup>th</sup> and 10<sup>th</sup> days post-treatment among the third, second, fifth then the fourth and the first horses respectively. However, that of non-treated control group remained nearly constant during the whole period of the experiment.

### **DISCUSSION**

The present work studied the efficacy of Ivermectin (Ivomec, MSD) and its affect on the adults and the microfilariae of Setaria equina in surviving horses. It proved to be of a significant efficacy, that was demonstrated by the disappearance of clinical symptoms and microfilaraemia, the slight increase in the mean number

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of microfilariae on the fourth day may be due to the activity of dying females which released a large number of microfilariae before death or rupture of uteri of some worms. Such result was identical to that of PATNAIK and PANELE (1963) and ABU EL-MAGD, et al. (1988) after injecting Ivomec into cattle infested with Parafilaria species and camels infested with Dipetalonema evansi respectively. Also, it was agreed with that of KLEI, et al. 1980; EGERTON, 1981 and ZEIN EL-ABDIN, et al. 1983 as they reported the effect of Ivermectin on the adults of Setaria equina during post-mortum examination of infesting animals. Thus, it was concluded that the Ivermectin can be used in the treatment of Setaria equina infestations with a dose of 1.0 ml per 50 Kg. body weight by S/C injection once only.

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Table (1)  
The number of microfilaria in 1.0 ml blood in horses before  
and after treatment with Ivermectin (MSD)

Examination time	Before treatment	Number of mfa after dosing																
		2nd day		4th day		6th day		8th day		10th day		15th day		30th day		60th day		
		I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	
Treated animals	1	40-55 (48)	10-14 (13)	15-20 (18)	14-20 (17)	20-22 (21)	14-18 (16)	19-22 (20)	4-8 (5)	12-16 (14)	0	2-5 (3)	0	0	0	0	0	
	2	50-68 (54)	12-16 (14)	14-18 (16)	14-20 (16)	20-30 (26)	4-10 (6)	8-12 (8)	0	0-7 (4)	0	0	0	0	0	0	0	
	3	55-60 (56)	13-15 (14)	18-24 (21)	15-20 (17)	22-31 (28)	3-5 (3)	13-15 (9)	0	0	0	0	0	0	0	0	0	
	4	48-68 (64)	12-20 (16)	20-26 (24)	16-24 (22)	24-30 (27)	5-11 (8)	14-16 (14)	0	0-4 (2)	0	3-7 (4)	0	0	0	0	0	
	5	(56-64) (58)	14-20 (18)	20-28 (26)	20-22 (21)	25-33 (29)	7-13 (9)	16-20 (18)	0	2-5 (3)	0	0	0	0	0	0	0	
	Mean	56.0	15.0	—	21.2	—	8.4	—	1.0	—	0	—	0	—	0	—	0	
	Control	6	52-60 (56)	50 (57)	58	48 (51)	54	58 (60)	65	56 (56)	58	50 (52)	56	54 (55)	56	55 (57)	60	54 (56)
		7	46-57 (52)	51 (58)	60	55 (62)	64	56 (58)	60	49 (52)	53	52 (54)	58	48 (52)	54	56 (57)	58	56 (58)
	Mean	54.0	57.5	—	56.5	—	59.0	—	53.0	—	53.0	—	53.5	—	57.0	—	57.0	

I = Intact (Normal morphologically).

D = Degenerated (Abnormal morphologically).

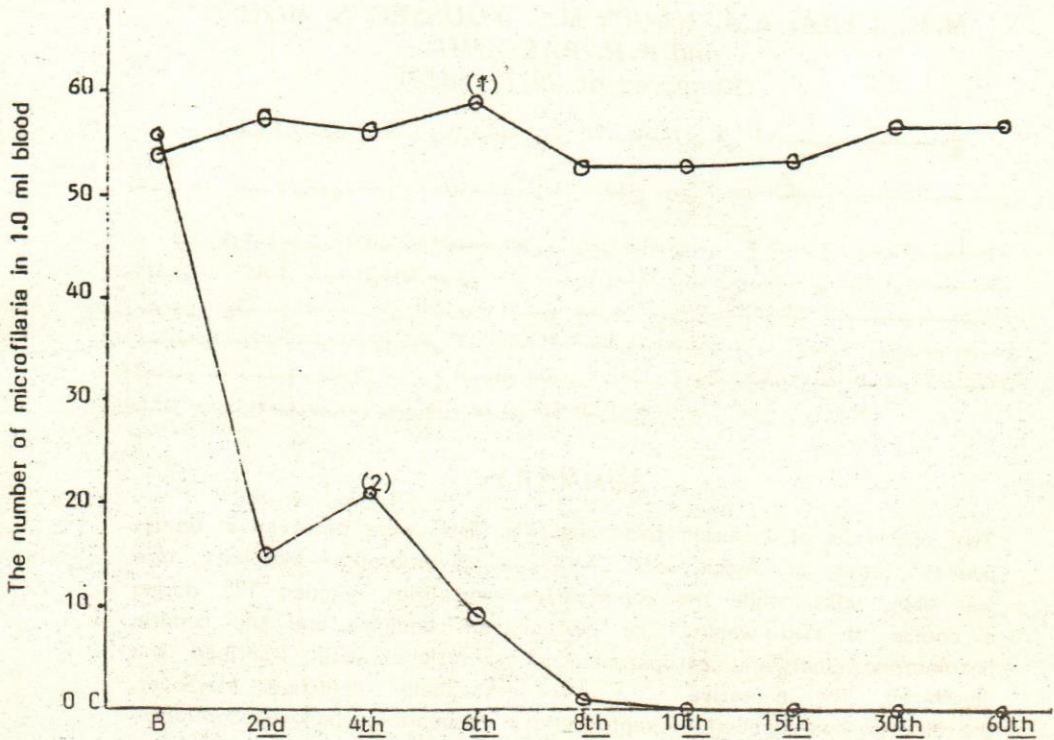
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Plate (1)

The number of microfilariae before (B) and several periods after treatment of positive camel group (2) as compared with positive untreated group (1)