AkiNik

Journal of Entomology and Zoology Studies

Available online at www.entomoljournal.com

J E Z S Journal of Entomology and Zoology Studies

ISSN 2320-7078
JEZS 2013; 1 (6): 36-38

Received 24-10-2013
Accepted: 11-11-2013

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Effect of Malathion and Diazinon exterminators lice on the buffalo in Sohag Governorate, Egypt.

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Abstract

The present study was designed and compares the efficacy of three
Pesticides against the buffaloes lice (*Haematopinus tuberculatus*) infesting buffalo in the farmer houses in Sohag Governorate .The pesticides which treated were Malathion 57%, Diazinon15% and Diazinon 60% EC at concentration of ml/ liter water against lice. The pesticides were spray on all treatment and the animal examined was after 24 hrs till 45 days. The decrease or increase of the population at buffalo lice was estimated and comparison between the three pesticide. Diazinon 60% showed variable toxicity to animal parasites. According to the percentage of mortality recorded after24 hrs till 45 days followed by Malathion 57% with the same concentrations. The late efficiency was Diazinon 15%.This may be due to the low of the active ingredient in Diazinon 15% compared with Diazinon 60%.In general we can use Diazinon 60% with 1cm/liter water as spray on the animal body to control the buffalo lice.

Keywords: Buffalo lice, animal parasites, control, *Haematopinus tuberculatus*.

1. Introduction

Ectoparasitic arthropods live on, or burrow into, the surface of their host's epidermis for feed or shelter. As a result, there may cause direct damage to skin and other sub-cutaneous tissues. When present at high intensities, ectoparasites may cause harm indirectly, causing disturbance, increasing levels of behavior such as rubbing, leading to reduced time spent for grazing or ruminating and, self-wounding[1].The ectoparasites have a major effect on the husbandry and productivity of livestock, weight gain[2, 3], milk production and quality of hide[4]. They can cause harm due to their blood feeding activities and can transmit many pathogenic organisms[5, 6, 7, 8, 9]. The present study was evaluated of pesticides for buffalo lice control.

2. Materials and methods

The present study was conducted on the buffaloes in the farmer's houses in El Monshah city, Sohag Governorate during 2012. The farmer houses were including the building of animal sheds, animal food storage and rooms for living the farmers .Twenty buffaloes were used to carry out this study, there divided in to four groups everyone was five animals. The first group was treated with Malthaion 57% at 1cm/liter, the second was treated with Diazinon 15% by the same concentrations. The third group was treated with Diazinon 60% by the same concentrations; the fourth group was untreated as control.

The animals body were divided into 5 parts from, Surface region, the abdomen region , the neck and font legs, the back legs and the back region every part divided to cycle of 15 cm was marked and the population density of buffalo lice in every divided was counted before and after treatment . The mean of buffalo lice in 5 regions at every animal was estimated and were compared with the as a control agent of ectoparasites in the farm. Treatments were compared with the control group; the results were taken after 1, 3, 5, 7, 10, 15, 20, 30 and 45 days.

Data were analyzed using analyses of variance[2, 3] and means were separated using the least significant differences method (LSD) at 5% probability level[11], only when a significant "F" test was obtained. The percentage of reduction was calculated by[12]. All percent mortality data were arcsin transformed to suit the analysis.

3. Results and discussion

Data in Tables (1) and figures (1) represented the percentage of mortality in animal ectoparasites after one to 45 days from applications with Malathion 57% EC spray at 1ml/liter water. Results showed that after one day, the post treatment gave an initial kill of 32.18% in buffaloes lice. The activity of the product increased gradually to attain 55.38% after 7 days from treatment. By time the activity of the product decreased gradually to attain 44.41%, after 20 days for the above mentioned animals. However after 45 days, the mortality percentage of ectoparasites reduced to be 31.51%.

Diazinon 15% EC spray at 1ml/liter water, gave an initial kill of 18.38% after 24 hrs in buffalo parasites, the activity of the product increased gradually to attain 28.72% in buffalo parasites after 5 days respectively. The activity of the product decreased gradually to attain 18.72% after 20 days. However after 45 days the percentage of mortality reduced to be 7.44% for the three animals parasites, respectively (Table 1).

Diazinon 60% EC spray at 1 ml/liter water, gave an initial kill of 39.56% after 24 hrs in buffalo parasites, the activity of the product increased gradually to attain 63.83% in buffalo parasites after 7 days respectively. The activity of the product decreased gradually to attain 53.20% after 20 days, respectively. However after 45 days the percentage of mortality reduced to be 26.73% for the three animals parasites, respectively (Table 1 and figure 1).

Table 1: Reduction ratios of buffalo ectoparasites after spraying with Malathion and Diazinon EC (1ml/L) under field conditions, in farm animals, Sohag Governorate, during, 2012.

Days	Mean ±SE (%)		
	Malathion 57%	Diazinon15%	Diazinon 60%
1	32.18±3.74g	18.38±1.11l	39.56±0.43 f
3	38.60±1.00 f	26.64±0.81ij	45.23±1.18 e
5	43.53±1.32e	28.72±0.75 hi	54.75±0.79 bc
7	55.38±0.92bc	25.01±0.74 j	63.83±0.82 a
10	53.27±1.38cd	21.72±0.42 k	62.83±1.21 a
15	50.11±0.31d	20.23± 0.84 kl	56.63±0.42 b
20	44.41±0.51e	18.72±0.86 kl	53.20±0.89cd
25	39.29±0.29f	17.82±0.85 l	50.69±0.39 d
30	36.29±0.60f	14.15±0.62 m	38.99±0.76 f
45	31.51±0.83gh	7.44±1.79 n	26.73±1.98 ij

Means followed by the same letter are insignificantly different.

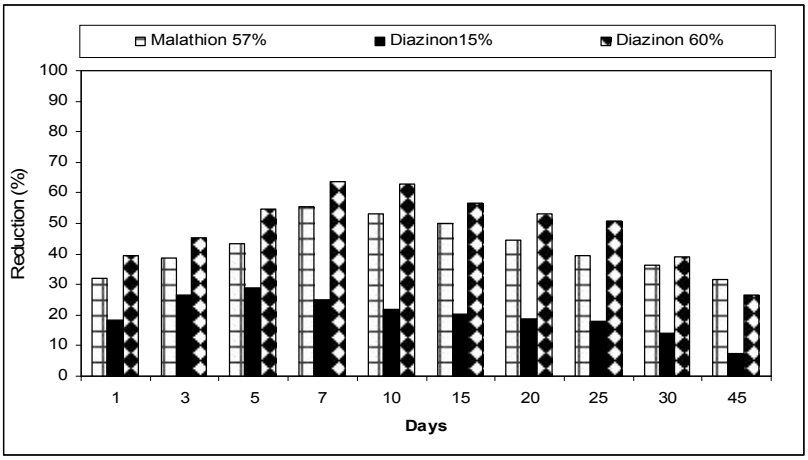

Fig 1: Reduction ratios of buffalo ectoparasites after spraying with Malathion and Diazinon EC (1ml/L) under field conditions, in farm animals, Sohag Governorate, during, 2012.

Table (2 and figure 2) According to the percentage of mortality recorded after 45 days, Diazinon 60% EC showed the highest toxicity with 49.24%, followed by Malathion 57% EC with 42.49% and Diazinon 15% EC with 19.88% this may be due to the increasing of active ingredient in Diazinon 60% EC, the same results were obtained with[13,14,15].

Table 2: Mean of Reduction ratios at buffalo ectoparasites after (45 days) spraying with Malathion and Diazinon EC (1ml/L) under field conditions, in farm animals, Sohag Governorate, during, 2012.

Days	Mean ±SE (%)		
	Malathion 57%	Diazinon15%	Diazinon 60%
Mean	42.49±1.52B	19.88±1.12 C	49.24±2.01 A

Means followed by the same rows are insignificantly different.

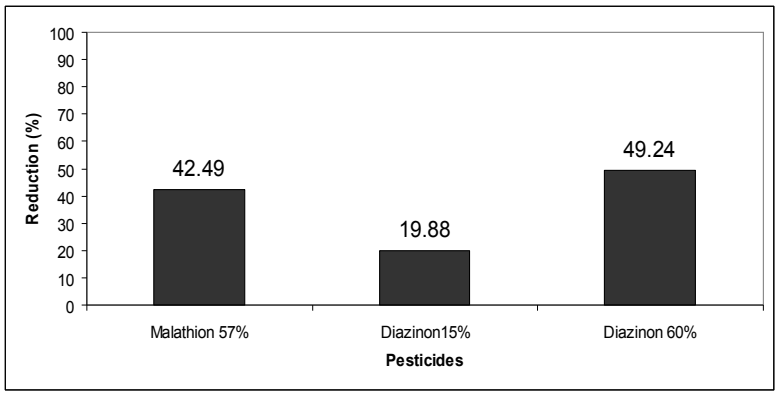

Fig 2: Mean of Reduction ratios at buffalo ectoparasites after (45 days) spraying with Malathion and Diazinon EC (1 ml/L) under field conditions, in farm animals, Sohag Governorate, during, 2012.

The buffalo's lice *(Haematopinus tuberculatus)* high infesting buffalo in the husbandry animal. The insecticide (Malathion and Diazinon EC) exhibited the highest toxic compounds on buffalo lice. Reduction ratios of buffalo lice after spraying was the result confirmed that Diazinon 60% EC better role than Malathion 57%EC.Also, Malathion 57% EC was the best than Diazinon 15% EC under field conditions.

4. Acknowledgment
Sincere thanks are due to Dr Yosuf Omer Associate Professor in Faculty of Agriculture Assiut University for his advice in the statistical analysis.

5. References

1. Weeks CA, Nicol CJ, Titchener RN. Effects of the sucking louse (*Linognathus vituli*) on the grooming behavior of housed calves. Vet Rec 1995; 137:33-35.
2. Gibney VJ, Campbell JB, Boxler DJ, Clanton DC, Deutscher GH. Effects of various infestation levels of cattle lice (Mallophaga: Trichodectidae and Anoplura: Haematopinidae) on feed efficiency and weight gain of beef heifers. J Econ Entomol 1985; 78:1304-1307.
3. Devaney JA, Craig TM, Rowe LD, Wade C, Miller DK. Effects of low levels of lice and internal nematodes on weight gain and blood parameters in calves in central Texas. J Econ Entomol 1992; 85:144-149.
4. Coles GC, Hadley PJ, Milnes AS, Green LE, Stosic PJ, Garnsworthy PC. Relationship between lice infestation and leather damage in cattle. Vet Rec 2003; 153:255–259.
5. Geden CJ, Rutz DA, Bishop DR. Cattle lice (Anoplura, Mallophaga) in New York: seasonal population changes, effects of housing type on infestations of calves and sampling efficiency. J Econ Entomol 1990; 83:1435-1438.
6. Watson DW, Lloyd JE, Kumar R. Density and distribution of cattle lice (Phthiraptera: Haematopinidae, Linognathidae, Trichodectidae) on six steers. Vet Parasitol 1997; 69:283-296.
7. Milnes AS, Green LE. Prevalence of lice on dairy cattle in England and the bordering countries of Wales. Res Vet Sci 1999; 47:497-510.
8. Nafstad O, Gronstol H. Eradication of lice infestation. Acta Vet Scand 2001; 42:81-89.
9. Colwell DD, Himsl-Rayner C. *Linognathus vituli* (Anoplura: Linognathidae): population growth, dispersal and development of humoral immune responses in naive calves following induced infestation. Vet Parasitol 2002; 108:237-246.
10. MSTAT C. (1988). MSTAT-C, a microcomputer program for the design, arrangement, and analysis of agronomic research experiments. Michigan State University, East Lansing, USA, 1988.
11. Steel RGD, Torrie JH. Principles and Procedures of Statistics. McGraw Hill Book Co., Tokyo, Japan, 1984.
12. Henderson CF, Tilton EW. Tests with acaricides against the brow wheat mite, J Econ Entomol 1955; 48:157-161.
13. Elmaged ATM. Recent trends for controlling some harmful arthropods in the husbandry, M.Sc. Thesis, Fac. Agric., Assiut Univ Assiut Egypt, 1998, 100.
14. Rajput ZI, Song-hua HU, Wan-jun C, Abdullah A, Chen-wen X. Importance of ticks and their chemical and immunological control in livestock. J Zhejiang Univ Science 2006; B7(11):912-921.
15. Desoky ASS. Studies on Certain Ectoparasites Associated with Some Farm Animals and their Control, Ph.D. Thesis, Fac Agric Assiut Univ, Assiut, Egypt 2011, 179.