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Evaluation of Cyper Ruimoo 0.25% DP (cypermethrin) for the control of sesame seedbug, *Elasmolomus sordidus* Fabricius (Hemiptera: Lygaeidae) on sesame in the Sudan

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Abstract: The experiment was conducted in season 2013/2014 at Gedarif Research Station Farm (Northern area of Gedarif), with the objective of testing the insecticide Cyper Ruimoo as a post-harvest treatment for controlling the sesame seedbug, *E. sordidus*. The data obtained during harvesting time showed that Cyper Ruimoo insecticide recorded high % mortality and similar to that recorded by Al Faris use as standard. Mean weight of 1000-seeds was significantly different between the treatments, Cyper Ruimoo recorded high 1000-seeds weight (3.3 g) similar to those obtained by Al Faris (3.4 g) and better than the untreated control (2.4 g). The highest yield was recorded by Cyper Ruimoo (389 Kg/fed), followed by Al Faris (382.5 Kg/Fed) and the lowest yield was recorded by the untreated control.
Keywords: Cyper Ruimoo, insecticide, *Sesamum indicum*

INTRODUCTION

Sesame, *Sesamum indicum* (L), is an important role in the Sudan; it's grown in an average annual area of about 1.4 million ha during the last ten seasons (2003/2004 – 2013/2014) [1]. Sesame is one of the most important cash crops in the Sudan. It is produced mainly under rainfed conditions (300-800 mm). The average production is 295,250 tones/year and the cultivated area is 1,404,586 ha, with a mean yield of 132.7-210 kg/ha (2002 to 2013) [1]. Among the Arab countries, Sudan contribution to the world sesame production was about 90% of the sesame area and 71% of the production[2]. (AOAD, 2010). Sesame grown in Gedarif in three ecological zones with different rainfall (south with more than 600 mm, central with 500 to 600 mm and north Gedarif with less than 500 mm) [3]. Sesame cultivated area is increasing in central and north zones compared to the southern one; this is mainly due to sensitivity of the crop to excess water, weed infestation and insect pests. Gedarif production 67,159 ton/year and the area is 212,127 ha (2008-2012). Pests problems have become serious as a result of expanded production when necessitates improvement in the management practices especially for the control of insect pests and diseases to obtain high yield.

Sesame is attacked by different insect pests, *viz*. Sesame seedbug, *E. sordidus*, sesame webworm, (*Antigastra catalaunalis*), sphinx moth, *Acherontia styx* West w. Opium bug, *Nysius* spp., Green bug, *Nezara viridula* (L.) and Leaf hopper, *Orosius albicinctus*, *O. argentatus* [4]. Among them the sesame seed bug (Elkauak), *Elasmolomus sordidus*, is the most important one. *E. sordidus* mainly attacks the seed of sesame and groundnuts; it has also been recorded feeding on grasses, sedges, cotton and banana in Nigeria [5]. Sesame in usually attacked in the field after the plants have been cut, and stacked for drying (Hilla). Both nymphs and adults suck the oil from the seeds which shrivel and become bitter and worthless[6]. The adult bugs are attracted by large dark objects such as sesame stacks in the field. When it is hot during the day, they migrate down towards the base of the stacks. As the stacks dry out or are threshed, movement of the pest is observed from one stack to another.

This experiment was designed to evaluate Cyper Ruimoo 0.25% DP for controlling the sesame seedbug, *Elasmolomus sordidus* (Fabricius) on sesame under Gedarif rainfed conditions.

MATERIALS AND METHODS

The experiment was conducted at Gedarif Research Station Farm in season 2013/2014 (Northern area of Gedarif), with the objective of testing the insecticide Cyper Ruimoo 0.25% DP as a post-harvest treatment for controlling the sesame seedbug, *E. sordidus*. The variety ElGizouli was sown on 4th August 2013, in a randomized complete block design (RCBD) with four replications. All cultural practices were done

as per ARC standard. Hundred bundles were tied and put in together to form a "tukule" (one Hilla = 4 tukles, one feddan = 6 – 8 Hilla) and placed on flat land (1 m²) which was already dusted with Cyper-Rumioo 0.25% DP. A duster glass gar was used to apply the insecticide. Counts of adults and nymphs were carried out 15-21 days after stacking. Percentage insect mortality was calculated according to the following equation:

$$\% \text{ Mortality} = \frac{\text{Dead insects x 100}}{\text{Total (Live + dead)}}$$

Weight of 1000 seeds and crop yield were recorded.

Treatments

I. Cyper Ruimoo 0.25% DP at 100 g/m² (0.25 g. a. i. / m²).
II. Al Faris 0.25% DP (Counterpart) at 100 g/m² (0.25 g. a. i. / m²).
III. Control (Untreated).

RESULTS AND DISCUSSIONS

Results in Figure (1) showed that Cyper Ruimoo 0.25% DP insecticide recorded high % mortality similar to that recorded by Al Faris 0.25% DP (counterpart) and better than the untreated control (96.5, 97 and 0.5%, respectively). Mean weight of 1000-seeds was significantly different between the treatments with Cyper Ruimoo 0.25% DP and the untreated and the counterpart recorded high 1000-seed weight 3.3 and 3.4 g, respectively compared to 2.4 g obtained by the untreated control similar to that obtained by Al Faris 0.25% DP. The lowest 1000-seed weigh was recorded by the untreated control, was possible due to the high infestation of sesame seedbug during harvesting time (Figure 2). Data presented in Figure (3) showed that the highest yield was recorded by Cyper Ruimoo 0.25% DP (389 Kg/fed), followed by Al Faris 0.25% DP (382.5 Kg/Fed) and the lowest was recorded by the untreated control. However, no significant differences were observed between Cpyer Ruimoo 0.25% and Al Faris 0.25% on percentage mortality, 1000-seed weight and yield during the season (Figs, 1, 2 and 3). in the Sudan by Starchemical Company Ltd.

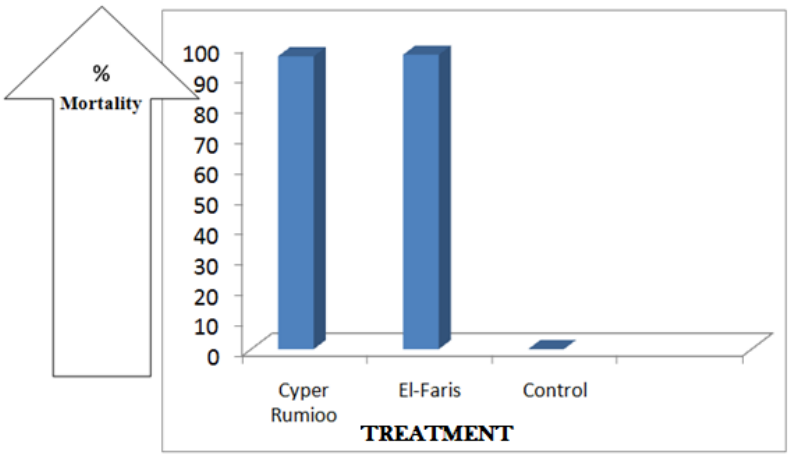

Fig-1:Percentage of *E. sordidus* mortality caused by Cyper Ruimoo 0.25% DP and Al Faris 0.25% DP during 2013/2014 season

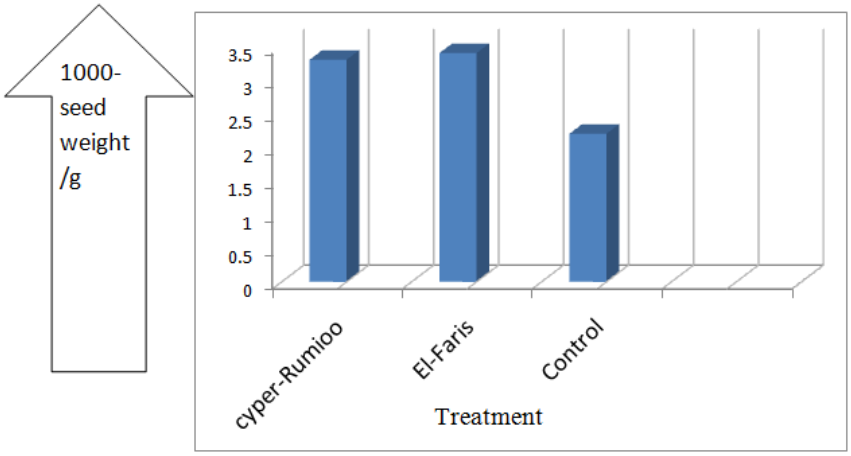

Fig-2: 1000-seed weight of sesame treated with Cyper Ruimoo 0.25% DP and Al-Faris 0.25% DP during 2013/2014 season

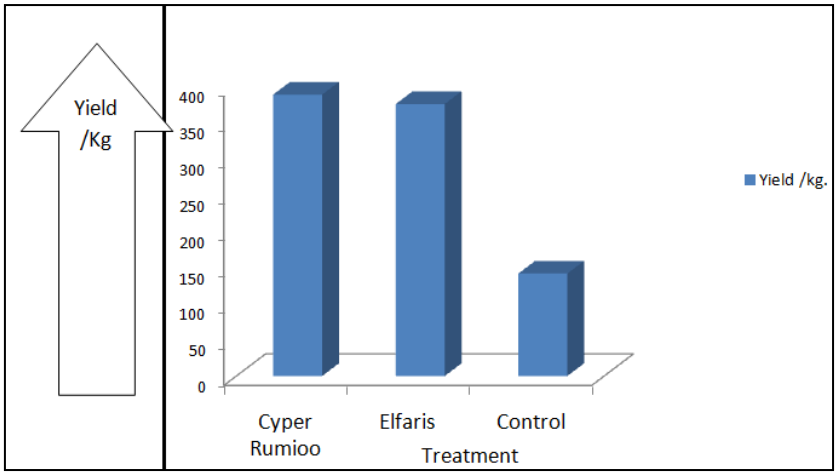

Fig-3: Yield obtained from sesame treated with Cyper Ruimoo insecticides during 2013/2014 season

CONCLUSION

From the results obtained during this study it was concluded that:-

Cyper Ruimoo 0.25% DP (cypermethrin) at the dose rate of 100 g product/ m² gave excellent similarly to those obtained by the counterpart and better than the untreated check for the control of sesame seedbug, *E. sordidus* (El kauak) on sesame.

Recommendation

Based on the above results the we recommend Cyper-Rumioo 0.25% DP (cypermethrin) at the dose rate of 100 g product/m² (0.25 g. a. i./ m²) to be applied on soil as dust before stacking, for controlling Sesame seedbug, *E. sordidus* on sesame.

Cyper-Rumioo 0.25% DP produced by Ruimoo Agro-Chemical Industry Ltd., Shenzhen, China and introduced

REFERENCES

1. Ali KA, Ahmed ME; Response of three improved sesame (*Sesamum indicum* L.) varieties to sowing dates under rain-fed conditions in north of Gedarif. Crop Husbandry Committee, June, 2013, ARC, Wad Medani, Sudan.
2. AOAD; Arab Agricultural Statistics Year Book, 30. Arab Organization for Agricultural Development (AOAD), Khartoum, Sudan, 2010.
3. Ahmed ME; Evaluation of new sesame (*Sesamum indicum* L.) genotypes for yield, yield components and stability. University of Khartoum . Journal of Agricultural Sciences, 2008; 16: 380-394.
4. Suliman EH, Zein MM; Evaluation of Malathion 5% Powder at different dose rates against sesame seed bug, *Elasmolomus sordidus* (Fabricius), "El Kauak". 67th. Meeting of the Pests and Diseases Committee, ARC, Sept., 2002, Wad Medani, Sudan.
5. Schumtterer H; Pests of the Crops in Northeast and Central Africa, Gustav Fisher Verlang. Stuttgart. Portland. USA, 1969.
6. Suliman EH, Zein MM; Evaluation of Al Faris 0.25% DP (cypermethrin) for the control of sesame seedbug, *Elasmolomus sordidus* (Fabricius), "El Kauak" on sesame. The 73rd. Meeting of the Pests and Diseases Committee, ARC, 25, Sept. 2005, Wad Medani, Sudan