# Study of Population Density Luffa Cylindrical at University of Baghdad

Majeed H. Nawar[1], Basheera Khuaheer Al Hassan[2], Nidhal Abdulhadi Jaafar[3]

Plant Protection Department\College of Agriculture\University of Baghdad

***Abstract—*** *A study was conducted to determine the population density of the Leaves diggers liriomyzasativae in the Plant Protection Department, college of Agriculture - University of Baghdad, for the period from 01/02/2015 to 15/05/2015.*

*The study results showed that the highest density of hoof liriomyzasativae 2.7 digger / Leave dated 05/08/2015 and the lowest was 0.3 hoof /leave dated 01/02/2015, and the results showed the presence of three peaks of the pest Nilai starting from 27/2 and ends 3/4. It notes the fluctuation of population density of the hoof between the rise and fall, which dates back to the environmental conditions and the enemies of vital accompaniment of the pest, and the results showed the presence of the enemy's vital Neochrysocharisformosa (Westwood) (Eulophidae: Hymenoptera).*

***Keywords— University of Baghdad, Population density, Leaves diggers liriomyzasativae, Plant Protection.***

## I. INTRODUCTION

Leef luffa cylindrical back to the Cucurbitaceae family, is a climber plant leg goes from 5-15 m, leaves mutual pentagonal Altvsas and flowers and a single housing, the male cluster assembly and female individual yellow five-pointed stamens fruits cylindrical, his medical benefits for the treatment of cancer and renal anemia, rheumatism and the treatment of gout disease because it contains green sap rich chlorophyll a, mineral salts , enzymes , fats, and amino acids (Davis, 2008) .

There are many species in the tropics and the ancient world and the modern and it luffa cylindrical and a wider spread in the tropics, there are the same in Iraq, either in India luffa acutangula (Chakravarty, 1976). Luffa cylindrical fiber is exposed to infection many from pests Insecticides or non Insecticides including *Bemisia tabaci* whitefly and aphids *aphis gossypii* and fly big melon *Bactroceacucurbibae* and hoof spending *liriomyzasativae* (Azzawi et al., 1990).

As noted researcher (Stegmaior, 1966) that the Leaves diggers liriomyzasativae attacking a large number of vegetable crops and leguminous prefer Cucurbitaceae family, Solanaceae, and there are the rest of the plant families in Florida it is attacking the 40 host back to 10 botanical families. He added the researcher (Spencer, 1981) It pests economically important in northern Turkey. The damage caused by the female through spawning or feeding, which will be spots or leaves yellowing and hatched working larvae like bar tail or lines, the greater the age-increasing line length, width and overall movement between the leave tissue mizovel leave(Sharma et al., 1980) and the researcher ( Tran et al., 2008) that the types of Genus liriomyza found in South Asia, are merely the economic vegetable crops, at present the most important vegetable crops L. brifolii, L. huidobrensis, L. bryoniae and have a wide spread of South Asia.

While (Mau and Martin, 2007) explained that the Leaves diggers stock liriomyzasativae multiple feeding and find on the 40 plant families, including the family Cucurbitaceae. pointed (Capinera, 2005) that species liriomyzasativae exist normally South Florida to California, Hawaii and South America. As he explained (Tran et al., 2008) that the types of Genus liriomyza pest present on the 50 crop of vegetable crops in Vietnam.And that the eggs to hatch and larva age needs for the development of the (7-9) days at a temperature of (25-30) ° c and the pupas takes (7-9) on development have been lengthened at a temperature of 15 ° c, they also need to supplement their life cycle at temperatures optimal 30°c for 15-day heat (Parrella, 1987). Found there are several ways to combat Among the best ways to maintain the security of the ecosystem pollution biological control, we find parasites natural enemies which have private parasitism strategies which increase with blight the pest and less with decline it (Zubaidi, 1992) as the record (Yildirim et al., 2011).

The parasite (Walker, 1838) Diglyphusisaea who was one of the best parasites in the parasitism on the Leaves digger in Turkey.

Due to the presence of The pest in the study area and the lack of previous studies on the luffa cylindrical was chosen this research, which aims to study the population density and recording natural enemies to them.

## II. MATERIALS AND METHODS

Chosen implanted field luffa cylindrical in the University of Baghdad, and are taking random samples of the leaves for period from 02/01/2015 until 05/15/2015 and bring samples placed in nylon bags for the purpose of calculating them from the pests is also taking other samples and put them in plastic cans of 750 ml, tied a rubber bond to extract the pest and parasite.

### 2.1 Diagnosis of the pest

The adult of parasite sent after putting them in glass bottles with alcohol substance preservatives to 70% natural / Baghdad University History Museum.

### 2.2 Statistical analysis

Use the program (Sas, 2015) in the data analysis in the study of the effect of time in accordance with the character of thoughtful design random full (CRD), was compared to the moral differences between the test averages less Significant difference (LSD.

## III. RESULTS AND DISCUSSION

Notes from Figure 1 fluctuating population density of the hoof Securities liriomyzasativae, and the results showed that there are three peaks and the superiority of the second peak on the front as she was at the beginning of the month of May and the first peak began a gradual rise from the end of February until it reached a maximum in the month of May and then began to decline to that arrived at the end of 1.1 at the end of sampling, and this goes back to the role of natural enemies and vital circumstances.

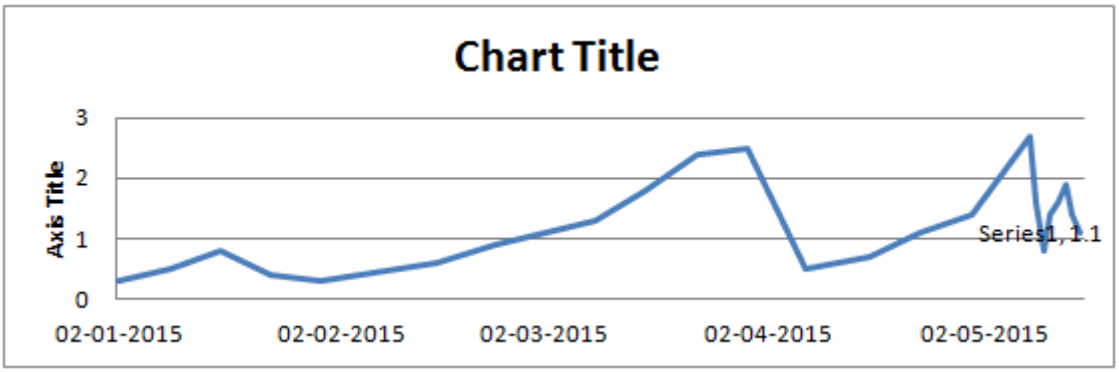


**FIGURE -1- OF POPULATION DENSITY OF THE LEAVES DIGGERS *IRIOMYZASATIVAE***

As noted in the same shape that the highest density of population stood at 2.7 digger/ leave dated 05/08/2015 regarding amounted to less densely populated, amounting to 0.30 hoof / leave dated 02/01/2015.

The results showed that there were significant differences of values (LSD) at a level 0.05 and amounting 0.697.

**TABLE 1**

**VITAL ENEMY HOOF LEAVES *LIRIOMYZASATIVAE***

| vital enemy name | Family | order |
|---|---|---|
| *Neochrysocharisformosa*(Westwood) | Eulophidae | Hymenoptera |

Table -1- showed the parasite *Neochrysocharisformosa* (Westwood) that present on pest **for the duration of the study for every pest vital enemy as the nature created with a balance (Al-Zubaidi, 1992)**

## REFERENCES

[1] Al-Zubaidi, Hamza Kazim, 1992. Biological control of insect pests. Dar Mosul. 603 pages.

[2] Al-Azzawi, Abdullah Filaih: Ibrahim Kaddouri Qaddo and Haidar Saleh al-Haidari. 1990. Economic Entomology. Dar al-Hikma for printing and publishing. 680 p

[3] Capinera, John L. 2005. Vegetable Leafminer, *Liriomyzasativae*Blanchard (Insecta: Diptera: Agromyzidae). UF/IFAS Extension. University of Florida EENY255.

[4] Chakravarty, H. L. 1976. plant wealth of Iraq. Ministry of Agriculture and Agrarian reform.

[5] Davis Jeanine. 2008. Commercial Luffa Sponge Gourd Production Horticulture Information Leaflet. NC State University and A&T State University.

[6] Mau Ronald F.L. and Jayma L. Martin Kessing. 2007. *Liriomyzatrifolii* (Burgess). Knowledge Master.

[7] Parrella, MP. 1987. Biology of *Liriomyza*. Annual Review of Entomology 32: 201-224.

[8] SAS, 2012. Statistical Analysis System Vser's. Guid. Statistical. Version 9.1 th ed. Sas. Inst. Cary. Nc. USA .

[9] Sharma, RK. Durazo, A. and Mayberry KS. 1980. Leafminer control increases summer squash yields. California Agriculture 34: 21-22.

[10] Spencer KA. 1981. Arevisionary study of the left-mining fleies (Agromyzidae) of California. Univ. California Special Publication 3273. 489 pp.

[11] Stegmaier CE. 1966. Host plants and Parasite of *liriomyzamunda* in florida (Diptera: Agromyzidae). Florida Entomologist 49:81-86.

[12] Tran, T.T.A. and Nordhus, E 2008. Distribution and importance of polyphagous *liriomyza*species (Diptera: Agromyzidae) in vegetales in Vietnam. ivorw. Norw. J. Entomd. 55, 149-164.

[13] YildirimEyyupMennan, Hasan SungurCivelek, OktayDursun and Ata Eskin. 2011. The Parasitism Rate *Diglyphusisaea* (Hymenoptera: Eulophidae) on *Liriomyzasativae*Blancard (Diptera: Agromyzidae) in Mugla Province. J. of Applied Biological Sciences 6(1): 21-23 2012.