



## Evaluating Some Chemical and Mechanical Weed Management Methods Aiming to Reduce Herbicide Use in Potato (*Solanum tuberosum* L.)

M. H. Rashed Mohassel<sup>1</sup>- K. Hajmohammadnia Ghalibaf<sup>2\*</sup>- S. A. Hosseini<sup>3</sup>

Received: 17-6-2009

Accepted: 18-1-2011

### Abstract

In order to study of chemical and mechanical weed management methods and their integration in potato (*Solanum tuberosum*), a field experiment was done in 2008 at Ferdowsi University of Mashhad Research Field. Experimental design was completely randomized block design with 6 treatments and 3 replications. Treatment included broadcast herbicide application (standard treatment), between row cultivation, banded herbicide application (in-row), between row cultivation+banded herbicide (integrated treatment), and weed free and weed infested (controls). metribuzin (sencor) was applied as pre-emergence at 1.2 kg/ha product in all herbicide treatments. In broadcast and banded herbicide treatments, sencor was applied on entire plot and in row (in a 25 cm band over the row), respectively. Cultivation treatment was done 3 weeks after potato emergence. Results were showed significant effects of treatments on weed control percentage, density, and biomass, potato leaf area index and yield. Highest weed control percentage and so highest potato yield was obtained in weed free control, broadcast herbicide, cultivation+banded herbicide, banded herbicide and cultivation treatments, respectively. Highest potato yield was obtained in weed free control (34.43 t/ha) and after that broadcast herbicide (31.13 t/ha) and banded herbicide+cultivation (27.93 t/ha) resulted in higher yield than other weed control practices. Difference of weed control percentage, density, and biomass in banded herbicide+cultivation and broadcast treatments was not significant, also potato yield in banded herbicide+cultivation reduced no more than 10% relative to broadcast herbicide. Despite lower weed control level and potato yield in integrated treatment, herbicide use decreased 66% relative to broadcast application, which has significant importance from economical and environmental point of view.

**Keywords:** Broadcast herbicide application, Banded herbicide application, Cultivator, Metribuzin, Integrated weed management

1,2- Professor and Lecture, Agronomy Department, College of Agriculture, Ferdowsi University of Mashhad, respectively

(\*-Corresponding Author Email: kamalhm2000@yahoo.com)

3- Accademic Stuff, College of Agriculture, Rafsanjan University



## The Seasonal Population Fluctuation of the Green Peach Aphid, *Myzus persicae* Sulzer (Hom., Aphididae) on Some Potato Cultivars in Ardabil

L. Mottaghinia<sup>1\*</sup> - G. Nouri Ganbalani<sup>2</sup> - J. Razmjou<sup>3</sup> - H. Rafiee Dastjerdi<sup>4</sup>

Received: 16-11-2009

Accepted: 25-10-2011

### Abstract

*Myzus persicae* Sulzer is one of the serious pests in potato fields which has the ability of transmitting several viruses to the potato crop. Throughout summer of 2008, field studies were carried out in Ardabil to evaluate the seasonal population fluctuation of this aphid on 10 potato cultivars: Granola, Satina, Moren, Aozonia, Cosima, Agria, Cosmos, Kondor, Diamant and Savalan. Density of aphids on both first and fifth compound leaves of these cultivars was counted every three days. Analysis of variance showed significant differences among the cultivars. The highest density of aphid was on Aozonia cultivar. Even though there were no significant differences between the other cultivars but the lowest numbers of aphids were on Cosima and Cosmos cultivars, respectively. Two peaks of aphid's population were observed in Ardabil. Consequently, in Ardabil's climate condition and among the tested cultivars, *M. persicae* showed less preference toward Cosima and Cosmos.

**Keywords:** Green peach aphid, Potato, Preference

---

1,2,3,4- Former M.Sc. Student, Professor & Assistant Professors, Department of Plant Protection, College of Agriculture, University of Mohaghegh Ardabili, Ardabil, Iran, respectively  
(\* - Corresponding Author Email: lmottaghinia@yahoo.com)



## Identification of Plant Parasitic Nematodes of Potato Fields in Khorasan Razavi Province

V. Erfani Poor Ghasemi <sup>1\*</sup>- E. Mahdikhani Moghadam <sup>2</sup>- H. Rouhani <sup>3</sup>

Received: 13-1-2010

Accepted: 20-9-2011

### Abstract

In order to identify the plant parasitic nematodes of potato fields, 55 soil samples and 60 infested tuber samples were collected from different fields in Khorasan Razavi province during 2005-2006. Soil samples were washed and nematodes were extracted by centrifugal flotation technique. According to De Grisse, the extracted nematodes were fixed and transferred to glycerin. Baermann funnel method was used for extracting nematodes from tuber samples. In this survey, 16 species belonging to 12 genera of infra order Tylenchomorpha were identified based on morphological and morphometrical characters. *Aphelenchoides brassicae* is new record from Iran and *Helicotylenchus indicus* was collected from potato fields and rhizosphere *Rosmarinus officinalis* in campus of Ferdowsi university of Mashhad at the same time. *Pratylenchus neglectus*, *Geocenamus rugosus*, *Heterodera schachtii*, *Heterodera trifolii* and *Zygotylenchus guevarai* were the most frequent and dominant species.

**Keywords:** Nematode, Potato, Tylenchomorpha, Khorasan Razavi

1,2,3- Formerly M. Sc Student, Associate Prof. and Professor of Plant Protection Dept., College of Agriculture, Ferdowsi University of Mashhad, respectively

(\*- Corresponding Author Email: verfani@yahoo.com)



## Study of *Bean Common Mosaic Virus* (BCMV) in Several Provinces and Reaction of Three Bean Genotypes to BCMV Infection

M. Peyambari<sup>1\*</sup>- M. Koochi Habibi<sup>2</sup> - Gh. Mosahebi<sup>3</sup> - K. Izadpanah<sup>4</sup>

Received: 21-6-2010

Accepted: 25-10-2011

### Abstract

In 2004 and 2005 growing seasons, 260 bean leaf samples with mosaic, vein-banding, and leaf-rolling symptoms were collected from bean fields of Fars, Kohgiluyeh va Boyer-Ahmad, Isfahan and Tehran provinces. ELISA test (DAS-ELISA and Indirect-ELISA), using BCMV antiserum, confirmed infection of 110 samples to BCMV. A selected isolate of BCMV from Fars province was inoculated on three bean genotypes (butter bean ks-21478, kidney bean ks-31170 and navy bean ks-41235). Ten to fifteen days after inoculation, plants were tested for the presence of virus by ELISA (DAS-ELISA and Indirect-ELISA). According to the results, the percentages of infected plants to BCMV were 65.4% for butter bean genotype, 58.1% for kidney bean genotype and 3.6% for navy bean genotype. The twenty five inoculated plants of each butter bean and kidney bean genotypes and the thirty five inoculated plants of navy bean genotype were tested by RT-PCR and IC-RT-PCR using specific primers of BCMV. Based on results, the amplification of an 890 bp fragment was detected in ELISA positive of butter bean and kidney bean genotypes as well as some ELISA negative plants. The twenty five symptomless and ELISA negative plants of navy bean genotype had also positive amplification in RT-PCR and IC-RT-PCR tests. To determine the rate of seed transmission in the three genotypes, infected bean plants were maintained in greenhouse until seed production and the seeds were harvested and planted. The plants which grew from these seeds were analyzed at two-leaf stages for the presence of BCMV using DAS-ELISA and IC-RT-PCR. The seed transmission rates in butter bean (ks-21478), kidney bean (ks-31170) and navy bean (ks-41235) genotypes were 78.3%, 79.8% and 54.9%, respectively.

**Keywords:** BCMV, Seed-born, Bean genotypes, IC-RT-PCR

---

1,2,3- M.Sc Student, Assistant Prof. And Associate Prof., Department of Plant pathology, Faculty of Agricultural Science and Engineering, College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran, respectively (\*- Corresponding Author Email : [peyambari@ut.ac.ir](mailto:peyambari@ut.ac.ir))

4- Professor, Department of Plant Protection, College of Agriculture, Shiraz University, Shiraz, Iran



## Investigation the Effect of Water Hardness on 2,4-D Amine Efficacy on Redroot Pigweed (*Amaranthus retroflexous*) and Common Lambsquart (*Chenopodium album*) control

E. Izadi Darbandi<sup>1</sup> \* - N. Nessari<sup>2</sup> - F. Azarian<sup>3</sup>

Received: 11-7-2010

Accepted: 23-7-2011

### Abstract

Water is the most common carrier used to dilute herbicides and their application. Researches had shown that water quality is an important factor in some herbicide efficacy. In order to study the effect of water hardness on 2,4-D efficacy, an experiment was carried out under controlled conditions in 2010 at the College of Agriculture, Ferdowsi University of Mashhad. Experimental treatments included herbicides doses at 6 levels (0, 1000, 1250, 1500, 1750 and 2000 ml ha<sup>-1</sup>), calcium carbonate concentration in water as index of water hardness at 6 levels (0, 100, 300, 600, 1000 and 1500 ppm) and weeds at 2 levels (redroot pigweed and common lambsquart), were evaluated as a completely randomized design in a factorial arrangement with three replications. Spray was done at 6-8 weeds leaf stage and two weeks after spray weeds survival and shoot dry matter was measured. For results analysis, data analysis of variance was done and plants response to 2,4-D doses in deferent water hardness levels was fitted with 4 parametric sigmoidal equation to the shoot biomass data as a function of the herbicide doses and was used to calculate the herbicide dose for 50% inhibition of plants shoot growth inhibition (ID50). Results showed herbicide rate and water hardness had significantly effect (P<0.01) on growth and survival of two weeds. Increasing herbicide doses, decreased the survival and growth of both weeds in pure water spraying. Increasing water hardness decreased 2,4-D efficacy in both weeds. Maximum (79.4%, 91.7%) and minimum (35.5%, 74.3%) shoot biomass lose were indicated at the highest and lowest levels of 2,4-D and calcium carbonate levels in common lambsquart and redroot pigweed respectively. Redroot pigweed was more susceptible to 2,4-D application in each level of water hardness. Increasing of water hardness, increased ID50 parameter in both weeds. Minimum (1057 ml ha<sup>-1</sup>) and maximum (2783 ml ha<sup>-1</sup>) 2,4-D ID50 for common lambsquart indicated in distilled water and 1000 ppm of calcium carbonate concentration. Minimum (559 ml ha<sup>-1</sup>) and maximum (1270 ml ha<sup>-1</sup>) 2,4-D ID50 for redroot pigweed was observed in 100 and 1500 ppm of water hardness.

**Keywords:** Calcium carbonate, Dry mater, Water quality

1,2,3-Assistant Prof. and M. Sc students of Faculty of Agriculture, Ferdowsi University of Mashhad, respectively  
(\* - Corresponding Author Email: eizadi2000@yahoo.com)



## Faunistic study of Auchenorrhyncha in sugar beet fields of Mashhad and Chenaran

N. Moosavi Mahvelati <sup>1\*</sup> - M. Modarres Awal <sup>2</sup>

Received: 19-7-2010

Accepted: 2-3-2011

### Abstract

A faunistic survey on Auchenorrhyncha associated with sugar beet was conducted During 2007- 2009 in Mashhad and Chenaran. specimens were collected with sweeping net and determined using available identification keys according to the external and internal morphological characteristics specially male genitalia. Species were confirmed by national scientists. In this study seventeen species belonging to fifteen genus and four families including 11 species of Cicadellidae, four species of Delphacidae, one specie of Tettigometridae and one species of Cixiidae) were identified. According to the available references the species *Metidiocerus impressifrons* (Kirschbaum 1868) is a new record for the fauna of Iran and new species for the fauna of Razavi khorasan are: *Euscelis alsius*, *Phlepsius intricatus*, *Macrosteles quadripunctulatus*, *Neoliturus fenestratus*, *N. guttulatus*, *Batrachomorphus irroratus*, *Pentastiridius leporinus*, *Asiraca clavicornis*, *Laodelphax striatellus*, *Sogatella vibix*, *Unkanodes tanasijevici*, *Tettigometra pseud-ovittelina*

Identification key for introduced species is represented.

**Keywords:** Auchenorrhyncha, Chenaran, Fauna, Mashhad, Sugar beet

---

1,2- Msc Graduated Student and Associate Professor of Plant Protection, College of Agriculture, Ferdowsi University of Mashhad

(\* - Corresponding Author Email: n\_mosavi\_m@yahoo.com)



## Density, Spatial Distribution and Sequential Sampling of Main Aphidophagous Predators in Winter Wheat Fields of Gorgan, Northern Iran

A. Afshari<sup>1</sup>

Received: 7-9-2010

Accepted: 20-9-2011

### Abstract

In order to investigate density fluctuation and spatial distribution of the main aphidophagous predators and develop a fixed-precision sequential sampling plan, a weekly sweepnet sampling was conducted at five winter wheat fields in Gorgan region in northern Iran, during two growing seasons of 2006 and 2007. Spatial distribution of the predators was described by fitting data to Poisson (random) distribution, as well as by calculating three dispersion indices. A sequential sampling plan was also developed using the fixed-precision method of Green for estimating the mean density of predators' population. Four species of *Coccinella septempunctata* L., *Propylea quatuordecimpunctata* L., *Eupeodes corollae* (Fabricius) and *Episyrphus balteatus* (De Geer) comprised 18.75, 14.25, 41.54 and 6.02 percent of the predators' community, respectively. For all predators, with the exception of *E. corollae*, the parameters *b* of Taylor's power law did not differ significantly from one, indicating that populations of them exhibited random spatial distribution. Fitting population's frequency data to distribution models also showed that Poisson (random) distribution provided a good fit to the population frequencies during most of the wheat growing season. Sequential sampling results showed that the number of sample units required to stop sampling was depended upon mean population abundance and desired level of precision. So that, for *C. septempunctata*, at density of 0.033-0.6 adult/10 sweepnet and precision level of 0.25, the required sample size ranged from 400 to 41 sweepnets. At the same time, for *P. quatuordecimpunctata*, at density of 0.02-1.8 adult/10 sweepnets, the required sample size ranged from 775 to 10 sweepnets. For *E. corollae* and *E. balteatus*, required sample size ranged from 4 to 400 and 57 to 175 sweepnets, respectively. Regarding number of sample units, at high density of predators, sweepnet sampling was a cost-effective method to estimate predators' population density, whereas at low population levels, sweepnet sampling was a time-consuming method and a quite large sample was required to achieve the desired precision of 0.25. Therefore, we recommend the comparison of precision and efficiency of sweepnet with other sampling procedures to determine the best sampling method for estimating population density of predators in wheat fields.

**Keywords:** Population fluctuation, Spatial distribution, Sequential sampling, wheat aphids, Predators and Gorgan

1- Assistant Prof., Dept. of Plant Protection, University of Agricultural Science and Natural Resources, Gorgan, Iran  
(Email: Afshari@gau.ac.ir)



## Fumigant Toxicity of the Essential Oils from *Lavandula angustifolia* (Mill) and *Zataria multiflora* (Boiss) on Cowpea Weevil, *Callosobruchus maculatus* (F.) (Coleoptera: Bruchidae)

Z. Golestani<sup>1</sup> - G. Moravej<sup>\*2</sup> - M. Azizi-Arani<sup>3</sup> - S. Hatefi<sup>4</sup>

Received: 7-12-2010

Accepted: 17-10-2011

### Abstract

The cowpea weevil, *Callosobruchus maculatus* is the one of the most destructive pests of the dried seeds including cowpea, chickpea, lentil, mung bean and broad bean. In the last few decades, the use of environmental friendly insecticides, particularly plant-based compounds, has attracted attention of many researchers. The objective of the present work was to evaluate the fumigant toxicity of the essential oils extracted from the aromatic species, *Zataria multiflora* and *Lavandula angustifolia* on the cowpea weevil, *C. maculatus*. The essential oils from *Z. multiflora* and *L. angustifolia* were extracted using a Clevenger apparatus. Bioassays were conducted on both sexes of one-2 day old *C. maculatus* adults within the enclosed 27 ml glass vials under 29±1°C, 60±5% RH and dark condition. Differences in toxicities between essential oils were made by comparing the estimates of LC<sub>50S</sub>, LC<sub>90S</sub> and probit mortality-concentration regression lines provided by POLO-PC computer software. The toxicities of both materials were significantly and positively associated with concentration and exposure time. The males were more sensitive than females. The insects of both sexes were 9-10 times more tolerant to the extract from *Z. multiflora* comparing to that from *L. angustifolia*. The 24h LC<sub>50</sub> values of *Z. multiflora* oil were 329 and 562 µL<sup>-1</sup> and the counterpart values of *L. angustifolia* oil were 34 and 54 µL<sup>-1</sup> for males and females, respectively. The results showed the essential oils from *L. angustifolia* can be a good candidate for more and practical assays.

**Key words:** Cowpea, Essential oils, Fumigant toxicity, *L. angustifolia*, Stored product pests, *Z. multiflora*

1,2,4- MSc student, Assistant Professor and Lecturer, Dept. of Plant Protection, Faculty of Agriculture, Ferdowsi University of Mashhad, Iran, respectively

(\*- Corresponding Author Email : Moravej@ferdowsi.um.ac.ir)

3 Associate Professor, Dept. of Horticulture, Faculty of Agriculture, Ferdowsi University of Mashhad, Iran





## Population Fluctuations of *Chilo suppressalis* Walker (Lepidoptera: Pyralidae) in Rice Research Centre of Mazandaran

H. Ghahari<sup>1</sup> - M. Amoughli Tabari<sup>2\*</sup>

Received: 1-1-2011

Accepted: 13-9-2011

### Abstract

Striped rice stem borer, *Chilo suppressalis* Walker (Lepidoptera: Pyralidae) is a major pest of rice in northern Iran. Regarding to the importance of population dynamics studies in pest management programs, the population fluctuations of *C. suppressalis* was studied in central part of Mazandaran province (Rice Research Centre of Mazandaran) during 2005-2006. The male and female moths were firstly observed in 9<sup>th</sup> and 19<sup>th</sup> May 2005, and 29<sup>th</sup> April and 9<sup>th</sup> May 2006, respectively. The first egg masses and larvae were collected in 30<sup>th</sup> May and 10<sup>th</sup> June 2005, respectively. *C. suppressalis* had three generations in central part of Mazandaran province, which the peak of density was observed at 9<sup>th</sup> June, 20<sup>th</sup> July, 23<sup>rd</sup> August, respectively in 2005, and 5<sup>th</sup> June, 20<sup>th</sup> July and 16<sup>th</sup> August in 2006. The highest population density of both males and females moths in 2005 was observed in the 2<sup>nd</sup> generation, while the first generation had the highest population density than the 2<sup>nd</sup> and 3<sup>rd</sup> ones in 2006. The highest population density of egg masses was counted for the 1<sup>st</sup> generation (22±6 egg masses), and were 14±4 and 11±3 egg masses for the 2<sup>nd</sup> and 3<sup>rd</sup> generations, respectively. The generation time in 2005 was 40, 20, and 25 days for the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> generations, respectively, and 40, 30, and 20 days in 2006. Captures of moths in light traps through 20<sup>th</sup> April until 20<sup>th</sup> August 2005 indicated that the male counts were more than the females at the beginning of the first and second generations, but the sex ratio gradually deviated toward females. In this research, the climates' effect on the population fluctuations of different life stages of *C. suppressalis* was evaluated too.

**Keywords:** Population fluctuations, Striped rice stem borer, *Chilo suppressalis*, Mazandaran

1- Assistant Professor of Entomology; Department of Plant Protection, Shahre Rey Branch, Islamic Azad University, Tehran, Iran

2- Scientific Board of Amol Rice Research Institute, Mazandaran, Iran

(\*- Corresponding Author Email: ma\_tabari@yahoo.com)



## The Effect of Natural Food Supplement in Artificial Diet of Adults Green Lacewing, (*Chrysoperla carnea*), on Some It's Biological Parameters Under Laboratory Conditions

M. Lakzaei<sup>1\*</sup>- M.H. Sarailoo<sup>2</sup>- M. Yazdanian<sup>3</sup>

Received: 1-2-2011

Accepted: 20-9-2011

### Abstract

In order to find out a better and cheaper artificial diet for mass rearing of common green lacewing, *Chrysoperla carnea*, an experiment was conducted using Completely Randomized Design (CRD) with 4 replications and 5 observations. In this study were used three diets [a mixture of honey, yeast and distilled water (1:1:1), a mixture of honey, yeast plus extract of Angomois grain moth eggs (1:1:1) and a mixture of honey, yeast plus extract of Mediterranean flour moth eggs (1:1:1)]. Experiments were run at 14L:10D, 25±2 °C and 60±5% RH on 7<sup>th</sup> generation adults. The effect of different diets was studied on biological parameters such as pre-oviposition, oviposition and post-oviposition periods, longevity of male and female, fecundity, average weight of one egg and egg hatchability. Results revealed that the mixture of honey, yeast and extract of Mediterranean flour moth eggs (1:1:1) showed the minimum pre-oviposition period (6.66±0.49 days) and longest oviposition period (28.57±1.09 days), longevity of male (45.73±0.89 days) and female (37.73±0.59 days), highest fecundity (795.0±23.05 eggs per female) and egg hatchability (84.98±2.82 %). Also the average weight of one egg laied by females fed on this diet obtained 0.069±0.00 mg that didn't show significant difference ( $P \leq 0.05$ ) with maximum observed amount (0.070±0.00 mg). So it is clear that the diet contains honey, yeast and extract of Mediterranean flour moth eggs is the best.

**Keywords:** Green lacewing, *Chrysoperla carnea*, Food supplement, Angomois grain moth, Mediterranean flour moth

1,2,3- Msc Gratuated student and Assistant Professors, Gorgan University of Agricultural Science and Natural Resources, respectively

(\*- Corresponding Author Email: malihelakzaei@gmail.com)

## Molecular Diagnosis of Tomato Yellow Ring Virus (TYRV) on Alstroemeria in Khorasan Razavi Province, Iran

N. Beikzadeh <sup>1\*</sup>- B. Jafarpour <sup>2</sup>- H. Rouhani <sup>3</sup>- D. Peters <sup>4</sup>- A. Hassani-Mehraban <sup>5</sup>

Received: 16-04-2011

Accepted: 13-07-2011

### Abstract

In October 2009, in one of the alstroemeria (*Alstroemeria* sp.) greenhouses, located in Khorasan Razavi province, tospovirus-like symptoms (necrosis) were observed on stems, petioles, flowers and leaves of some plants. Sap extracts from these plants were mechanically inoculated to indicator plants. Necrotic local lesions were observed on *Petunia hybrida* and *Chenopodium quinoa*. Necrotic local lesions followed by a systemic necrosis that caused the death of the plants were observed on *Datura stramonium* and *Nicotiana benthamiana*. On inoculated *N. glutinosa* plants, systemic necrotic spots were developed. Mechanical backinoculation on alstroemeria was failed. Leaves of symptomatic plants were tested for Tomato yellow ring virus (TYRV), Iris yellow spot virus (IYSV), Tomato spotted wilt virus (TSWV), Impatiens necrotic spot virus (INSV), Groundnut bud necrosis virus (GBNV), Groundnut ring spot virus (GRSV), Tomato chlorotic spot virus (TCSV) and Chrysanthemum stem necrosis virus (CSNV) with antisera specific to the viruses (raised against nucleocapsid protein) in double-antibody sandwich-ELISA. The reaction with antisera specific to TYRV was positive. Total RNA was extracted from the infected *N. benthamiana* plants for reverse transcription-PCR amplification with TYRV specific primers which amplified a fragment near 805bp band covering the nucleocapsid protein gene. This fragment was sequenced (Acc. No. HQ154130) and showed 99% amino acid sequence identity with TYRV from Fars (Acc. No. ABH07703), Tehran (Acc. No. AAV98587) and Markazi (Acc. No. ACT09488) provinces. To identify the virus strain, specific primers were used and TYRV-t strain was identified. Also the virus was transmitted from the infected *D. stramonium* plants to the healthy leaves of the host by Thrips tabaci. To our knowledge, this is the first report of natural infection of a monocotyledon plant by TYRV.

**Keywords:** Alstroemeria, Tomato yellow ring virus (TYRV), Khorasan Razavi province, Iran

1- PhD student of Ferdowsi University of Mashhad and Member of Scientific Board of Institute of Technical Vocational Higher Education of Jihad-Agriculture, Iran

(\*- Corresponding Author Email: beikzadeh@yahoo.com)

2, 3- Professor and Assoc. Prof. respectively. Dep. of Plant Protection, Ferdowsi University of Mashhad, Iran

4, 5-Senior Scientist. Laboratory of Virology, Wageningen University, Wageningen, The Netherlands



## Breif Report

### Identification of Fruit Flies of the Genus *Tephritis* Laterille, 1804 (Diptera: Tephritidae) in Ajabshir Region- East Azarbaijan Province

Y. Gharajedaghi<sup>1\*</sup>- S. Khaghaninia<sup>2</sup>- R. Farshbaf Pour Abad<sup>3</sup> - E. Zarghani<sup>4</sup>

Received: 24-1-2011

Accepted: 20-9-2011

#### Abstract

In order to identify the fruit flies of the genus *Tephritis* Laterille, 1804 (Diptera: Tephritidae) in Ajabshir region- East Azarbaijan province, a faunistic study was conducted during 2009-2010. In total, seven species were identified which all of them are as new records for the studying area and one species marked with an asterisk is being newly reported for Iran insect fauna: *Tephritis cometa* Low, 1840; *T. formosa* Low, 1844; *T. hurvitzii* Freidberg, 1758; *T. hyoscyami* L., 1981; \**T. nigricauda* Low, 1856; *T. postica* Low, 1844 and *T. praecox* Low, 1844. A key for identification of the species is provided.

**Keywords:** Fruit flies, Tephritidae, *Tephritis*, Ajabshir, Iran

---

1,2,3,4- MSc Student, Assistant Prof., Associate Prof. and Msc Student, Department of Plant Protection, Faculty of Agriculture, University of Tabriz, Tabriz, respectively  
(\* - Corresponding Author Email: Y.gharajedaghi@yahoo.com)



## Breif Report

### The Effect of Different Larval Density of *Chilo suppressalis* (Lepidoptera: Pyralidae) on Rice Infestation in Controlled Condition

M. Amoughli Tabari<sup>1\*</sup> - H. Ghahari<sup>2</sup>

Received: 27-4-2010

Accepted: 20-9-2011

#### Abstract

The effect of different larval density of *Chilo suppressalis* Walker was evaluated through 2006-2008 on rice infestation in controlled condition of the cages. The results indicated that there were significant effects between dead hearts, white heads and crop yield. The highest dead hearts and white heads were related to the treatment of 32 larvae per m<sup>2</sup> and the lowest ones were obtained in control (without release of larvae). Also, the highest crop yield was determined for the treatment control and the lowest was related to the treatment 32 larvae per m<sup>2</sup>.

**Keywords:** *Chilo suppressalis*, Larval population density, Dead hearts, White heads, Yield

---

1- Scientific Board of Amol Rice Research Institute, Mazandaran, Iran

(\*-Corresponding author Email: ma\_tabari@yahoo.com)

2- Assistant Professor of Entomology; Department of Plant Protection, Share-Rey Branch, Islamic Azad University, Tehran, Iran