Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 15

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۱۵

Effect of Macroelements (NPK) in the Control of *Tetranychus urticae* Koch (Acari: Prostigmata: Tetranychidae) on Derakhshan Bean Cultivar and its Agronomic Characteristics

A. Mohiseni [1]*- M. Dashadi [2]- M. Shahverdi [3]- M. H. Kooshki [4]

Received: 26-10-2009
Accepted: 13-7-2011

Abstract

Common bean (*Phaseolus vulgaris* L.) is one of the most important crops in Lorestan province with about 23000 ha. In this area, Two spotted Spider Mite (TSSM) *Tetranychus urticae* Koch is the key pest of this crop. To study the effect of macroelements (NPK) fertilizers, on controlling TSSM and their effect on some agronomic characters of Derakhshan bean cultivar, two same trails (1. treatmented with acaricide 2. no treatmented) were conducted in two fields at Borujerd agricultural research station in 2002. The experiment was carried out according to randomized complete block design in factorial arrangement with 18 treatments and 4 replications. Treatments were based on three factors: nitrogen (N_0=0, N_1=50 and N_2=65 kg/ha), phosphore (P_0=0, P_1=100 and P_2=130 kg/ha) and potassium (K_0=0 and K_1=50 kg/ha). Results showed that in the second trial (no treatmented trial), the seed yield was significantly decreased by increasing the nitrogen fertilizer levels. In most sampling times, number of TSSM/leaf in treatment $N_0P_2K_1$, was significantly lower than that of most treatments. Also, the potassium fertilizer in treatment $N_1P_0K_1$ caused an increasing in number of Pods/plant. Based on this research treatment $N_0P_2K_1$ was recommended in integrated control of TSSM in common bean fields.

Keywords: Derakhshan common bean, *Tetranychus urticae*, Macroelements, IPM

1,3,4- Assistant Professor, Researcher and Research Instructor, Agricultural and Natural Resource Research Center of lorestan- Borujerd Station, repectively
(*-Corresponding Author Email: mohiseni@yahoo.com)
2- Instructor, Islamic Azad University, Dezful Branch, Dezful, Iran

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 16

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۱۶

Critical Period of Weed Control in Sunflower (*Helianthus annus*, L.) in West of Guilan province.

J. Asghari[1]*- A. Vahedi[2] - H. R. Khoshghaul[3]

Received: 13-6-2009
Accepted: 10-7-2011

Abstract

In order to determine the critical period of weed control in Euro-flour variety of sunflower (*Helianthus annus*, L.) an experimental was conducted with a randomized complete block design with 10 treatments and three replications in Islamic Azad University Astara-branch-Agricultural College in 2006 growing season. Experimental treatments were conducted in two sets, the first set included weed free periods of 20, 40, 60, 80 and 100 days after crop emergence and the other set was weed infested in the same periods. In the first set, weeds removed in mentioned periods and then were allowed to compete with corp. In the second set of treatments, weeds competed with sunflower in those periods, and then removed up to harvest. In basis of percentage of sunflower seed yield in various treatments compare with completely weed free treatment, the two sets of treatments fitted with Gompertz and Logistic equations, respectively. The result showed that the critical period for sunflower. using %5 and %10 reductions, were 10-79 and 15-59 days after emergence, respectively. The highest yield was found in weed free control (3544 kg/ha), and the lowest yield was seen in weedy check treatment (321 kg/ha). Redroot pigweed (*Amaranthus retroflexus*), Knot grass (*Paspalum disticum*), Crab grass (*Digitaria sanguinalis*) were the most dominant weeds of the experimental site.

Keywords: Sunflower (*Helianthus annus* L.), Critical period, Weed, Interference, Control

1-Assoc. Prof., University of Geuilan
(*- Corresponding author Email: jafarasghari@yahoo.com)
2-Assist. Prof. Islamic Azad University, Astara Branch
3-MSc. Graduated in Agronomy from IAU-Khoy Branch

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 17

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۱۷

Competitive Characteristics of Wheat Cultivars in Competition with Japanese Brome (*Bromus japonicus*)

M. Sarani[1]- P. Rezvani Moghaddam [2]*- M. Nassiri Mohalati [3]- E. Zand [4]

Received: 21-11-2009
Accepted: 11-9-2011

Abstract

A field experiment was conducted to study the competitiveness of wheat cultivars against *Bromus japonicus* at Sistan Agricultural Research Station during 2003. The experimental design was a randomized complete block assigned in factorial arrangement of treatments with four replications. Six wheat cultivars comprised two natives (old cultivars; Boulani and Kalak-Afghni), and four new-released cultivars (Chamran, Hirmand, Kavir, and Hamoun) (as factor a) were grown in pure stand and in mixture with *B. japonicus* (as factor b). Weed density was 100 plants m^{-2}. The old cultivars were found more competitive than new-released ones. Boulani was the most competitive cultivar, however, had the lowest yield. In contrast, Kalak-Afghani with a good competitive ability indicated the highest yield. Cultivar Hirmand with a low yield and the highest weed infestation was indicated the least competitive cultivar. The more competitive cultivars had more biomass, leaf area, plant height, tiller number, and grain yield than the less competitive ones in competition with *B. japonicus*.

Keywords: Wheat, Bromes, Competition, Yield

[1],2- Former Graduate Student of Weed Science and Professors of Faculty of Agriculture, Ferdowsi University of Mashhad
(*- Corresponding author Email: prm93@yahoo.com)
3- Associate Professor of Pest and diseases Institute of Ministry of Jahad eh Keshavarzi, Iran

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 18

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۱۸

Biofilm Formation by Fluorescent Pseudomonads and Its Role in Biological Control of Take-all Disease of Wheat by *Gaeumannomyces graminis* Var.*tritici*

S. Alvani[1]* - H. Rouhani[2] – M. Falahati Rastegar[3] – M. Ahmadzade[4]

Received: 18-1-2010
Accepted: 23-11-2010

Abstract

The role of Fluorescent Pseudomonads in biocontrol of Take-all Disease caused by *Gaeumannomyces graminis* Var.*Tritici* (Ggt) has been the subject of many researchs in the recent years. Biofilm formation in Fluorescent Pseudomonads play an important role in biocontrol disease. For this purpose,130 strains of fluorescent Pseudomonads isolated from wheat rhizosphere in different regions of Khorasan province were chosen for different Experiments. Among them, 21 strains with higher inhibitory effect in dual culture test against Ggt colony were selected for more investigations. The ability of selected strains for forming biofilm, and for their adhesion power to the glass plates were determined in 492 nm wave length . This results indicated that 6 strains(F1, F3, F4, F141, P4 and 2-79) were able to forming the biofilm and demonstrated the higher level of adhesion to the glass plates. The same strains also shown better biocontrol potential on Take-all disease in greenhouse experiments. The decrease rate of Take-all disease in treatments using F1, F3, F4, F141, P4 and 2-79 strains was noted %79, %80, %77, %79, %77 and %80 respectively. Whereas for treatments using strains which were not able to forming Biofilm, the biocontrol potential was very less important, Among them F140 strain reduced only 10% of disease severity . The good and significative correlation (0/84) was found between biocontrol potential of strains and their ability to forming biofilm. These results showed the Important role of fluorescent pseudomonads strains which are able to forming biofilm in biocontrol of Take-all disease of wheat. This ability can probably be attributed to the better colonization and more longer persistence of strains on the roots and in rhizospheric zone of wheat.

Keywords: Biocontrol, Take-all, wheat, Biofilm, Fluorescent Pseudomonads, *Gaeumannomyces graminis* var.*tritici*

1,2,3- Msc Graduated student, Associate Professor and Professor, Department of Plant Protection, Ferdowsi University of Mashhad
(*-Corresponding author Email: somaye5778@gmail.com)
4-Associate Professor, Department of Plant Protection, University of Tehran

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 19

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۱۹

The Effect of Nitrogen Application and 2-4-D on Weed Density and Weed Architecture in Winter Wheat

H. R. Mohammaddoust Chamanabad [1]* - B. Pourmorad Kaleibar [2] – A. Asghari [3]

Received: 20-2-2010
Accepted: 13-9-2011

Abstract

To study the effect of nitrogen application and 2-4-D on weed density and weed architecture in winter wheat an experiment was conducted at agricultural research site, university of Mohaghegh Ardabili, Ardabil in 2009. Treatments were two nitrogen levels (no fertilizer and 150 $kgNha^{-1}$ application) with or without 2-4-D (1.5 kg ai ha^{-1}). Results showed that nitrogen application had no significant effect on weed density. Nitrogen application has increased weed dry weight to two-fold. Nitrogen application increased weeds dry weight on top layers of wheat canopy. 2-4-D application decreased weed density and weed dry weight. 2.4. D decreased density of annual spring weed over 90%. Wheat yield increased to 44% when herbicide applied compare to no herbicide application. Wheat yield was not significantly affected by N application.

Keywords: Nitrogen, Herbicide, Weed, Compatibility

[1],2,3- Assis. Prof., MSc. Student and Assis. Prof., University of Mohaghegh Ardabili, respectively
(*- Corresponding Author Email: hr_chamanabad@yahoo.com)

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 20

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۰

Genome Analyses of Carnation Mottle Virus Iranian Isolate (FUM2)

B. Jafarpoor[1]*- M.A. Sabockhiz [2]- M. Falahati Rastegar [3]- S. Pakbaz [4]

Received: 2-3-2010
Accepted: 19-12-2010

Abstract

During the winter and spring of 2007 and 2008, 450 samples (leaves of carnation plants) showing symptoms of yellowing, mottling, leaf malformation, and stunting were collected from greenhouses in Mashhad and Chenaran regions. The samples were tested by DAS-ELISA for the presence of CarMV. Total RNA was extracted by RNX^{TM} (-Plus) solution from positive infected samples confirmed in DAS-ELISA tests. AccuPowerR RT Pre Mix Kit was used for synthesis of cDNA with reverse specific primer according to two segments of genome. PCR amplification of cDNA was carried out using AccupowerR PCR PreMix. RT-PCR assay amplified two DNA fragments approximately 1037bp and 676 bp using. PCR products directly sequenced. The nucleotide sequence identity was also compared with different isolates of the world. The determined sequences of FUM2 isolate of CarMV were compared which previously reported 23 CarMV isolates, using Bioedit software and ClastalW2. A Neighbor-joining method of MEGA 3.1 was applied to construct unrooted trees for 3 genes (p7, p9 and partial p38). Analysis of the phylogenetic tree showed that our isolate is in group I and subgroup A.

Keywords: *Carnation mottle virus* (CarMV), FUM2, RT-PCR, Phylogenetical position, Iran

1,2,3,4- Professor, Lecturer, Professor, MSc. Gratuated Student, Dept. of Plant Protection, College of Agriculture, Ferdowsi University of Mashhad.
(*-Corresponding author Email: jafarpour226@yahoo.com)

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 21

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۱

Investigation the Effect of Nitrogen on Competitive Ability of Canola (*Brassica napus*) Against Wild Mustard (*Sinapis arvensis*) Using Empirical Models

F. Soleymani[1] - G. Ahmadvand[2*]- B. Saadatian [3]

Received: 12-5-2010
Accepted: 18-7-2011

Abstract

To evaluate the effect of different levels of nitrogen fertilizer on competitive ability of canola against wild mustard interference, a split plot trial based on a randomized complete block design with 3 replications was carried out. Experimental treatment were amounts of nitrogen fertilizer of urea (46% nitrogen) in 4 levels (100, 150, 200 and 250 kgN/ha) and 5 wild mustard densities (0, 4, 8, 16 and 32 plant/m^2). Linear reciprocal, yield loss and one and two parameter relative leaf area index models were fitted on data obtained from experiment, coefficients of these equations were used to evaluate changes in competitiveness of canola in nitrogen application levels. The results showed that all models well described the trend of canola yield loss in wild mustard interference. More nitrogen application led to increase biological and grain yield of canola on interference conditions. Biological and grain yield of canola decreased significantly with increasing plant density of wild mustard in four levels of nitrogen. Coefficients obtained from reciprocal model showed that increasing of nitrogen to 200 kg/ha led to increase relative competitive ability of canola against wild mustard, also grain yield was more affected by competition at all levels of nitrogen than biological yield. The lowest initial slope of yield loss (I) and the highest economic threshold of wild mustard and minimum relative damage coefficient (q) of two-parameter relative leaf area model were obtained in 200 kgN/ha. Overall results of this study showed that the optimum level of nitrogen fertilizer was 200 kgN/ha.

Keywords: Canola, Competition, Wild mustard, Yield, Empirical model

1,2,3- M.sc Student, Associate Prof. and M.sc Student Faculty of Agriculture, Bu-Ali Sina University, Hamedan, respectively
(*- Corresponding author email: gahmadvand@basu.ac.ir)

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 22

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۲

Identification of Plant Parasitic Nematodes of Citrus Orchards in Guilan east and Mazandaran West Province

N. Divsalar [1]- S. Jamali[*2]- H. Pedramfar [3]- H. Taheri [4]

Received: 9-6-2010
Accepted: 13-9-2011

Abstract

In order to identify the plant parasitic nematodes of citrus orchards in Guilan east and Mazandaran west province, 110 soil and root samples were collected during 2008 and 2009. The samples were washed and the nematodes extracted by centrifugal flotation technique. Then, they were fixed and transferred to glycerin. The permanent slides were prepared from the extracted nematodes. After microscopic consideration, the useful measurements and drawing were attained by using a drawing tube attached to the microscope. In this study 27 species belonging to 15 genera were identified using morphological and morphometrical characters as following: *Aphelenchoides asterocaudatus, A. bicaudatus, A. sacchari, Aphelenchus avenae, Basiria graminophila, Boleodorus thylactus, Criconemoides xenoplax, C. curvatum, Ditylenchus myceliophagus, Filenchus facultativus, F. vulgaris, Helicotylenchus digonicus , H. dihystera, H. exallus, H. pseudorobustus, H. vulgaris, Nagelus obscurus, Ogma civeⅡae, Paratylenchus nanus, Pratylenchus loosi, P. neglectus, P. jaehni, P. zea, Psilenchus hilarulus, Seinura lii, S.prospera , Tylenchulus semipenetrans*. The species "*Pratylenchus Jaehni, Seinura lii* and *S. prospera* " which are reported for the first time in Iran.

Keywords: Citrus, Guilan, Mazandaran, Nematode

1,2,3- Msc student, Assistant Prof. and Instructor, College of Agriculture, University of Guilan
(*- Corresponding author Email : Jamali@guilan.ac.ir)
4- Instructor,Iran Citrus Research Institute, Ramsar

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 23

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۳

Effect of the Oak Leafroller Moth, *Tortrix viridana* L. on Diameter Growth Increment of Lebanon Oak (*Quercus libani* Oliv.) in Piranshahr and Sardasht Forests

A. Banj Shafiei [1] *- J. Eshaghi Rad [2]- A. Alijanpour [3]- M. Pato [4]

Received: 21-6-2010
Accepted: 6-7-2011

Abstract

The oak leafroller moth , *Tortrix viridana* L. is a destructive pest within it's spreading area which invades the oak species, especially in west and northwest forests of Iran, in recent years. Some parts of West Azarbayjan's forests which are located in Piranshahr and Sardasht region have been affected by this pest since 1989 that oak trees vigor and survival have been gone down resulting the pest outbreak anually. In this study, 2 forest sites were chosen primarily which the first one was located in infested area (ca. 20 ha) and the second one was in non-infested area (as a control, ca. 5.5 ha). In each site, 10 trees of Lebanon oak (*Q. libani* Oliv.) were selected using transect method and a core was brought out from each tree employing increment borer. After preparing the cores, tree ring width was measured and after that comparing of the mean tree ring width between two sites (infested and control) and correlation between them and climatic data (precipitation and temperature) were determined. The results showed that the mean tree ring width in the infested site was decreased significantly after outbreak while this significant reduction was not seen in the control through an eleven years period (1998-2008). Also the pest outbreak caused tree ring width reduction of lebanon oak 35% as compared with the period before outbreak. Lack of any correlation between tree ring width and climatic data could be considered as a reason which indicates the oak leafroller moth can cause tree ring width reduction, so control measures should be taken into account immediately.

Keywords: *Tortrix viridana*, *Quercus libani*, Diameter Growth, Piranshahr, Sardasht

1,2,3- Assistant Professors, Department of forestry, Faculty of Natural Resources, Urmia University, Iran
(*-Corresponding author Email: a.banjshafiei@urmia.ac.ir)
4- M.Sc. of forestry, Piranshahr Natural Resources Office

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 24

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۴

Biological Control of Overwintering Population of Striped Stem Borer, *Chilo suppressalis* after Harvest of Rice by *Beauveria bassiana* in Rice Field

F. Majidi-Shilsar [1]*- F. Padasht-Dehkaei [2]- M. Nahvi [3]

Received: 11-8-2010
Accepted: 13-9-2011

Abstract

In order to evaluate the effect of *Beauveria bassiana* fungus on overwintering larvae populations of rice stem borer(*Chilo suppressalis*) was studied during 2007-2008 in Rice Reaserch Institute, Rasht. This study was carried out based on factorial experiment with RCBD in 4 replications with three factors as follow: (a_1) Concentration of 1×10^8 conidia/ml. , concentration of 1×10^6 conidia/ml. from spores of *B. bassiana* and check(only distilled watter), (b) use of spores granular formulation , use of spores liquid formulation and(c) Time of sampling(first, second third steps).The plots size were 3×7 m., Fungus of *B. bassiana* used after harvest of rice in the field. After two days spraying with fungus, number of 100 larvae were released inside each plot. Sampling was carried out in three times, as follow: 45 and 90 day after releasing of larvae and before wintering plow.Two year analyze showed that the most suitable of concentration , formulation and sampling time were 1×10^8 conidia/ml. ,granular and third step , respectively. The results showed that the highest mortality percentage average of larvae observed 1×10^8 conidia/ml. (57.66) in third sampling. The least mortality was observed in check.

Keywords: Biological control *Beauveria bassiana*, *Chilo suppressalis*, Overwintering population

1,2,3-Assistant Prof. and lecturer, Department of Plant Protection ,Rice Research Institute of Iran, Rasht, respectively
(*-Corresponding author E:mail: majidi14@yahoo.com)

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 25

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۵

Evaluation of Crops Sensitivity to Total (Mesosulforun+Metsulforun) Herbicide Soil Residue

E. Izadi[1]*- M. H. Rashed Mohassel[2] -G. Mahmoodi[3] -M. Dehghan[4]

Received: 28-6-2010
Accepted: 22-1-2011

Abstract

In order to study the sensitivity of seven crops to total herbicide soil residue, an experiment was carried out under controlled conditions in 2009 at the College of Agriculture, Ferdowsi University of Mashhad-Iran. In this study 7 crops (pea, bean, lentil, corn, rape, beet and tomato), across 7 simulated soil residual concentration of total herbicide (0, 0.0002, 0.0005, 0.001, 0.002, 0.004 and 0.006 mg kg^{-1} soil) were evaluated in a completely randomized design with factorial arrangement and three replications. Soil samples WERE wereprepared and transported to 10 Cm diameter pots and crop seeds were planted. Crops emergence percentage was determined 1 week after emergence. Survival, shoot and root biomass production was measured 30 days after emergence. Plants response to total residue was fitted with sigmoidal 3 and 4 parametric equation to the shoot biomass data as a function of the herbicide residue concentrations and was used to calculate the residue concentration for 50% inhibition of plants shoot growth inhibition (ID50). Results showed, that the effect of different total residue concentration were significant ($P<0.01$) on all plant characteristics. As total residue concentration were increased, emergence, survival, shoot and root biomass production were decreased on all crops. Based on the results pea and rape had the lowest (29.3, 30 %) and highest (93. 5, 86/3 %) shoot and root dry matter lost respectively. Based on shoot ED50 parameter, corn (0.0031 mg kg^{-1} soil) was the most tolerant and tomato(0.0001mg kg^{-1} soil) was the most susceptible crops to total soil residue. The other crops tolerance to total residue ranked as follow: rape < sugar beet < bean <lentil< tomato <pea<corn

Keywords: Bean, Corn, Lenti, , Pea, Rape, Sugar Beet, Tomato, Total, Residue

[1,2,3,4-]Assistant Prof., Professor and M. Sc students of Faculty of Agriculture, Ferdowsi University of Mashhad, respectively
(*- Corresponding Author Email: eizadi2000@yahoo.com)

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 26

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۶

Response of Barnyardgrass **[*Echinochloa crus-galii* (L.) P. Beauv.]** and Velvetleaf **(*Abotilon theophrasti* Medicus.)** to Glyphosate and Nicosulfuron Herbicides under Greenhouse Condition

K. Hajmohammadnia Ghalibaf[1]*- M. H. Rashed Mohassel[2]- M. Nassiri Mahallati[3]- E. Zand[4]

Received: 4-7-2010
Accepted: 23-7-2011

Abstract

To study the efficacy of glyphosate and nicosulfuron herbicides on barnyardgrass [*Echinochloa crus-galii* (L.) P. Beauv.] and velvetleaf (*Abotilon theophrasti* Medicus.) control and to find the ED_{50} index, experiments were conducted as factorial arrangement of treatments 2×7 based on completely randomized design with six replications for each weed in 2008-9 at Research Greenhouse, Ferdowsi University of Mashhad. Glyphosate and nicosulfuron herbicides applied to 3-4 leaves of weeds as post-emergence at 0, 0.125, 0.25, 0.5, 1, 2 and 3 Lha^{-1} product (0, 51, 102, 205, 410, 820, 1230, and 0. 5, 10, 20, 40, 80, 120 gai ha^{-1}, recpectively). The results showed significant effect of herbicide dosages on visual assessment, survival percentage, plant height, leaf area, and shoot dry weight of weeds ($P \leq 0.01$). Dose response curves of barnyardgrass biomass for both herbicides were similar, but velvetleaf biomass showed different responses to herbicides. So that, 50 percent reduction of velvetleaf biomass (ED_{50}) required 1.6 fold nicosulfuron herbicide incomparison with glyphosate herbicide. Also, control percentage curves of weeds changed with glyphosate higher slope than nicosulfuron, that emphasized the results of dose response curves. Based on the amount of ED_{50} obtained for each herbicide in greenhouse conditions that is differ from the farm reports, it can be concluded that the effect of herbicides under field and controlled conditions was not the same and can not be recommended from dosage for greenhouse tests. According to the proper correlation between the mean of shoot dry weight and weed control percentage (R^2=0.98**), it seems that using the values of this index (based on visual assessment) for evaluation of herbicides effect on weeds instead of dry biomass could be useful as well.

Keywords: Biomass, Dose response, ED_{50}, R, Visual assessment

1,2,3-PhD Student and Professors, Agronomy Department, College of Agriculture, Ferdowsi University of Mashhad, repectively
(*-Corresponding author Email: kamalhm2000@yahoo.com)
4-Associate Professor, Weed Research Department, Iranian Plant Protection Research Institute

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 27

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۷

Brief Report

Identification of Plant-Parasitic Nematodes of Rape Seed Fields and Their Distribution in Esfahan and Fars Provinces

H. Karimipourfard[1]*- M. Pakniyat[2] - Z . Tanha Maafi[3]

Received: 17-8-2010
Accepted: 13-9-2011

Abstract

In order to identify of plant parasitic nematodes of rapeseed in Isfahan and Fars provinces, 208(96 from Esfahan and 112 from Fars province) soil and root samples were collected from rapeseed fields during 2005-2007. Nematodes were extracted from root and soil , then fixed and transferred to glycerin. The nematodes were mounted on slides and examined by light microscope and identified by valid references. The distribution of identified species was determined too. In this survey 23 species belonging to 14 genera were identified from mentioned provinces. *Filenchus thornei* is reported from Iran for the first time. *Pratylenchus neglectus* has the most distribution among the species, in both provinces.

Keywords: Rapeseed, Esfahan province, Fars province, Nematode

1- Lecturer, Agricultural & Natural Resources Research Center of Esfahan
(*- Corresponding Author Email : Karimipourfard@yahoo.com)
2- Lecturer, Agricultural & Natural Resources Research Center of Fars
3-Associate Prof., Iranian Research Institute of Plant Protection, Tehran

Journal of Plant Protection
Vol. 25, No. 2, Summer 2011, P. 28

نشریه حفاظت گیاهان (علوم و صنایع کشاورزی)
جلد ۲۵، شماره ۲، تابستان ۱۳۹۰، ص. ۲۸

Brief Report

Biodegradation of Atrazine in Different Concentrations by Pseudomonas Bacteria

D. Rezaee [1]*- Gh. Haghnia [2]- A. Lakzian [3] - M. Hassanzadeh Khaiat [4]- H. Nassirli [5]

Received: 4-8-2010
Accepted: 13-9-2011

Abstract

Extensive application of atrazine and its toxicity in environmental has attracted researcher attention for finding new degradation methods to this organic pollutant. Biodegradation is one of most effective methods for removing atrazine. Due to the importance of atrazine herbicide as an organic pollutant, a design carried out at factorial experiment in completely randomized design with three repeats. The experiment consisted of two *pseudomonas* bacteria (*fluorescence* and *aeruginosa*) and three levels of atrazine concentrations 100, 200 and 300 $mg.l^{-1}$. The data of experiment showed that *Pseudomonas* bacteria degraded atrazine significantly. *Pseudomonas fluorescence* and *Pseudomonas aeruginosa* degraded atrazine 45 % and 38.88% in 48 hours, respectively. *Pseudomonas fluorescence* was more efficient than *Pseudomonas aeruginosa*. Results showed that the increasing of atrazine concentration led to more degradation of this herbicide by both bacteria. The most degradation by both *Pseudomonas* bacteria was at 300 ppm concentration and the less degradation occurred at 100 ppm concentration.

Keywords: Atrazine, Pollution and *Pseudomonas aeruginosa*, *Pseudomonas fluorescence*

1,2,3- MSc student, Professor and Associated Prof., Soil Science Dept., Agricultural College، Ferdowsi University of Mashhad, repectively
(*- Corresponding author Email: Danirezaie@yahoo.com)
4- Professor of Pharmaceutical Research Center and School of Pharmacy, Mashhad University of Medical Sciences
5- Expert of Analytical laboratory of Pharmaceutical Research Center, Mashhad University of Medical Sciences