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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۱۹

Study of Interaction Between Mycorrhiza *Glomus fasciculatum* and *Pseudomonas fluorescens* on Control of Common Root Rot of Wheat Caused by *Bipolaris sorokiniana*

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Abstract

The common root rot of wheat caused by *Bipolaris sorokiniana* is considered as an important disease of world wide distribution including Iran. Biological control of *B. sorokiniana* can be an effective method for control of this disease. For this purpose, the biocontrol potential of mycorrhiza *Glomus fasciculatum*, *Pseudomonas fluorescens* sh4 and a mixture of the two was evaluated for the common root rot in greenhouse condition(22-25o^{C}). 7 wheat seeds variety Chamran were sown in 200 ml polyethylene pots. Half of them were inoculated by *G. fasciculatum* and another half remained uninoculated. They were irrigated by Hogland's nutritient solution. Thirty five days later the plantlets were transferred to the polyethylene pots containing one kg. autoclaved soil. Depending on the different treatments, the pots were inoculated or not, with causal agent of disease *B. sorokiniana, P. fluorescens* or mixture of two,. Experiment was arranged as a factorial test using completely randomized design with 8 treatments and 4 replications. The plants were irrigated normally and harvested 5 weeks after transplanting of the plantlets. The roots were washed with care, and noted for disease index on the roots and fresh weights of roots and shoots were recorded. The results showed that the presence of mycorrhiza, pseudomonas and the mixture of them around and on the roots of plants, inoculated by *B. sorokiniana*, decreased significantly the severity of disease at the rate of 43, 50.75 and 78.75 % respectively in comparison with controls (no mycorrhiza and no *pseudomonas*. Comparable results were noted for the fresh weight of roots and aerial parts of plants in the same treatments. It could be concluded that application of mycorrhiza *G. fasciculatum*, *P. fluorescens* and a mixture of the two on wheat decrease not only the severity of disease caused by *B. sorokiniana* but also increases the weights of both *Bipolaris* infected and non infected plant. This increase in yield was significantly higher in the treatments inoculated with the mixture of mycorrhiza and pseudomonas as compared to the treatments inoculated with only one of each biocontrol agent.

Keywords: Biological control, Common root rot, Mycorrhiza, Pseudomonas, Wheat

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۰

Detection of Iris Yellow Spot Virus (IYSV) in Onion and some of Ornamental Plants by ELISA and RT-PCRmethods in Khorasan Razavi Provinces

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Abstract

In order to investigate the *Iris yellow spot virus* (IYSV) Sampling from onion fields and greenhouse of Khorasan Razavi province in summer of 2009 was done. Totally 435 samples were collected from this onion fields and 142 from ornamental plants (Rose, Gladiol, Iris, Plargonium, Chrysanthemum, Begonia, Petonia and Carnation). The plants that had symptoms such as chloratic, necrotic and diamond shape lesions were collected and transferred under cold condition to labratory then tested by DAS-ELISA and the sap of posetive plants inoculated to 4 coultivar of indicator plants that cultivated in greenhouse *Nicotiana rustica* (leef deforming and systhemic chloratic and necrosis),*N. benthamiana, N. clevelandii, N.tabacum var Samson* (systhemic chloratic and necrosis) then the inoculated indicator plants tested by DAS-ELISA, sap of positive indicator plants inoculated to 4 cultivars of onion include in yellow of Neishabour, white of Neishabour, red of Dargaz, red of dorche of Isfahan. The symptoms similar to the symptoms on infected onion in the fields appeared in their plants. For molecular detection, RNA extraction was done by PEG_{6000} Precipitation and RNX ™(plus) kit.In RT-PCR tests, specific primers designed for nocleoprotein gene amplified 181 bp and 139 bp fragments.. DAS-ELISA test results have indicated that all of the onion fields were infected with the virus in various rates. IYSV has been detected in 107 samples of onion, 7 samples of chrysanthemum floweres and 1 sample of iris floweres. This is the first repot of *Iris yellow spot virus* on onion and chrysanthemum in Iran.

Keywords: Iris Yellow Spot Virus (IYSV), ELISA, RT-PCR

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۱

Study on some Biological and Molecular Characterization of *Tobacco streak virus* Isolated from Sunflower

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Abstract

During 2007-2008 growing season, a total of 520 sunflower leaf samples with symptoms like vein clearing, cholorotic and necrotic local lesion, deformation and stunting which were suspected of being infected with *Tobacco streak virus* (TSV) were collected from sunflower fields of Azarbayijan-gharbi, Isfahan, Qom, Markazi, Tehran and Hamedan provinces. Infection with TSV in collected samples were determined serologically by enzyme – linked immunosorbent assay (DAS- ELISA) using a polyclonal antiserum. It was determined that 124 samples were infected with TSV. The percentage of TSV infection in sunflower fields of Azarbayijan-gharbi, Hamedan, Tehran, Qom, Isfahan and markazi provinces were 56%, 31%, 26%, 14%, 8.8% and 0% respectively. The virus was propagated on maintenance hosts. TSV induced cholorotic local lesions symptoms on inoculated leaves of *Chenopodium quinoa, C. amaranticolor* and *Vigna unguiculata*. The virus caused systemic stunting , deformation and curl on leaves of *Datura stramonium, Gomphrena globosa, Helianthus annuus* and *Vicia faba*. *Nicotiana benthemiana* was symptomless. The molecular weight of coat protein under denaturing condition (SDS-PAGE) was estimated to be 30.9 KD and Western blot confirmed the result of SDS-PAGE. IC- RT- PCR and RT- PCR were performed using a specific primer pair of TSV which had been designed according to a part of coat protein, and a fragment with 717 length was amplified.

Keywords: ELISA, RT-PCR, IC-RT-PCR, SDS-PAGE, TSV

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۲

Identification of two sub order Tylenchina and Aphelenchina Nematodes from Tomato Fields in Northern Khorasan Province

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Abstract

In order to identify the plant parasitic nematodes of tomato fields in Northern Khorasan province, 50 soil and root samples were collected during 2009 - 2010. Nematodes were extracted by combined sieving and centrifugal-flotation method and processed to be transferred to glycerin. After preparing microscope slides, the morphological and morphometrical characters of the nematodes were studied using the light microscope equipped with a drawing tube. Twenty four species from 16 genera were identified as follow: *Aphelenchoides lanceolatus* ، *A. richardsoni* ، *A. tuzeti* ، *Aphelenchus avenae* ، *A. isomerus* ، *Basiria graminophila* ، *Boleodorus thylactus* ، *Filenchus cylindricaudus* ، *F. thornei* ، *F. vulgaris* ، *Geocenamus tenuidens* ، *Helicotylenchus digonicus* ،*H. dihystera* ، *H. pseudorobustus* ، *Irantylenchus clavidorus* ، *Meloidogyne javanica* ، *Merlinius brevidens* ، *Neopsilenchus magnidens* ، *Pratylenchus coffeae* ، *P. thornei* ، *Psilenchus iranicus* ، *Seinura tenuicaudata* ، *Tylenchorhynchus solani* ،*Zygotylenchus guevarai* that some of them are plant parasitic nematodes. Most of the mentioned nematodes have been already recorded from Iran. Three species namely *Aphelenchoides tuzeti, Geocenamus tenuidens, Seinura tenuidens*, are reported for the first time from Iran.

Keywords: Tomato, Morphological, Morphometrical, Nematodes

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۳

Breaking Dormancy and Effect of some Environmental Factors on Germination of Cutleaf Mignonette (*Reseda lutea* L.) Seeds

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Abstract

To breaking dormancy as well as the effect of light, temperature, salinity and drought stress on germination of cutleaf mignonette seeds, experiments were conducted at the Research Laboratory of Birjand Faculty of Agriculture in 2009. Immersion in sulfuric acid (96%) for 30 seconds under continuous dark regime resulted in the highest germinability (73%) and the lowest germination (8%). was observed at the control treatment under light/dark regime continuous darkness resulted in higher germinability compared with light/dark regime at tested temperatures (20/10, 25/15 and 30/20C), so that the highest germination (76%) was observed at 25/15C under continuous dark and the lowest germination was observed at 20/10C under light/dark regime which indicates that this weed species is negative photoblastic. Cutleaf mignonette seeds could germinate in moderate levels of salinity (160 mM) and drought (-0.6MPa).

Keywords: Salinity stress, Drought stress, Seed dormancy, Temperature, Light, Sulfuric acid

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۴

Investigation of Tomatinase Enzyme Using Thin Layer Chromatography(TLC) in Population of *Fusarium oxysporum* f.sp. *lycopersici* Race1 from Tomato in Northern Khorasan and Razavi Khorasan Provinces

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Abstract

This study was carried out of identify the tomatinase extracellular enzyme in *Fusarium oxysporum* f.sp. *lycopersici* Race1 the casual agent of wilting in tomato. 20 isolates of *Fusarium oxysporum* were recovered from infected roots,crown and stems of tomato plants collected from fields in major tomato producing areas in Northern and Razavi Khorasan province during 2009-2010 . Pathogenicity test done on cultivar Bonny Best and 17 isolates were pathogenic on tomato and 3 isolates were Nonpathogenic. These isolates tested on cultivars Bonny Best,Datura, Cicer and Nightshade, proved to be *Fusarium oxysporum* f.sp. *lycopersici*. Patogenic test on differential hosts done and confirmed the existence of race1 in Khorasan province. For TLC analysis these isolates loaded on silicagel paper with 2 standards including: α- tomatine and tomatidine that there all had tomatinase activity and 2 spots of these isolates seen on plate.

Keywords: *Fusarium oxysporum*، Tomatinase, Tomato, Chromatography

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۵

Studies on Repellency of Sirinol on *Tribolium castaneum* (Herbst) (Col.: Tenebrionidae) and *Oryzaephilus surinamensis* (L.) (Col.: Cucujidae) with three Exposure Methods under Laboratory Conditions

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Abstract

In recent years a large number of pesticides used in the warehouses fumigation have been abandoned, and only methyl bromide and phostoxine are widely used for fumigation of foodstuffs and storage spaces. Due to possibility of health impairment, environmental contamination and resistance enhancement of insects, the use of these two fumigants is under scrutiny and restriction. Under such circumstances the need for to find out a safe, convenient, durable and economically sound control method is of out most important. There is widely held that the application of repellents could be a useful control measure in foodstuff storages. In this line, the repellency of Sirinol (garlic emulsion) was assayed on *Tribolium castaneum* (Herbst) and *Oryzaephilus suinamensis* (L.). To this end, larvae and adults of *T. castaneum* and *O. surinamensis* using three exposure methods viz, Petri–dishes, olfactometer Y- shape tube and porous cups that are the evaluation of ordinary methods of repellency, were exposed to 0, 0.5, 1, 5 and 10 percent concentration of Sirinol. In Petri-dishes technique using 10% concentration of Sirinol, the maximum repellency rate occurred for larvae and adults of both species at 12 h, which were articulated 70.44% and 74.52 %, respectively. The Sirinol's repellency rate for adults of *T. castaneum* and *O. surinamensis* was 81.51%, and 74.5% at 72 and 48 h, in a similar order. The maximum repellency of Sirinol using olfactometer Y- shape tube was detected 71.11 and 66% for adults of *T. castaneum* and *O. surinamensis* at concentration of 10% and 24. 14 h. For porous cups technique, maximum repellency rate for adults of both test insects was observed for concentration of 10% and 12 h, and it was 46.15% for *T. castaneum* and 39.78% for *O. surinamensis*, respectively.

Keywords: Sirinol, Methyl bromide, Fumigant, Red flour beetle, Saw toothed grain beetle

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۶

Study of Paraquat dose and its Applying Time Effect on wild Melon (*Cucumis melo* var.*agrestis*) in Soybean Crop (*Glycine max L.*)

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Abstract

To investigate the effect of dose and applying time of Paraquat on soybean weed control, especially wild melon, factorial experiment conducted as a randomized complete block design with four replications in 2009 in Dashte Naz Co. Sari-Iran. The treatments included different doses of Paraquat (0, 1, 1.5, 2 and 2.5 liters per hectare of commercial material) and different growing stages of wild melon (1, 2, 3 and 4 true leaves). The results showed that weeds as velvetleaf (*Abutilon theophrasti*) and black nightshade (*Solanum nigrum*) at uni-leaf stage have maximum density compared to other stages. In general weeds at uni-leaf stage of wild melon have more density than the other stages. On the other hand results in the control (dose of 0) treatment showed that weeds competition with crop reduced traits such as plant height and grain weight. Paraquat with 2.5 liters per hectare produced the most number of pods on main stem and lateral branches and produced the most pods per area unit that tends to produce more seeds in the main stems and lateral branches and finally more soybean yield resulted in area unit. Soybean at two and four-leaf stages of wild melon had maximum plant height and lowest pod height respectively. Paraquat, 3 days after spraying at two and three leaf stages of wild melon showed more damage. Also 15 days after spraying, this herbicide eradicates the wild melon at trifoliate stage completely. According to the experiment, application of Paraquat at dose 1 liter per hectare at two and three leaf stages of wild melon leads to satisfactory weed control and high soybean yield as well.

Keywords: Herbicide dose, Gramaxone, Wild melon, Soybean

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۷

Determination of Trichothecene Chemotypes and Analysis Population Structure of *Fusarium graminearum* Isolates in Golestan Provience

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Abstract

Fusarium Head Blight (FHB) or wheat scab is one of the destructive diseases that cause considerable loss in grain quality in cereal cultivated around the worldwide due to the production of trichotecen mycotoxin in the panicle. Type B trichothecenes including Nivalenol (NIV), Deoxynivalenol (DON), 3-acetyl Deoxynivalenol (3-AcDON) and 15-Deoxynivalenol (15-AcDON) are considered to be major toxins produced by *Fusarium graminearum* isolates. To determinate the trichothecene chemotyping among *F. graminearum* isolates, sampling was performed during 2009-2010 in different wheat fields in Golestan province at the time of ear formation and revolution. After identification of isolates using morphological criteria, a number of 100 isolates were confirmed using species-specific primers (Fg16F/Fg16R) as *F. graminearum* species. In these isolates, the presence of the responsible gene for trichothecene (Tri7) was detected by using PCR and species-specific primers (Tri7F/Tri7R). Among the studied isolates in sampling area, a number of 72 isolates were identified as NIV producing type and 28 isolates as DON producing type. Among the studied isolates, two populations as 7C1 and 6A5 were identified, which 7C1 (strain 7) population showed the highest distribution.

Keywords: *Tri7* gene detection, Mycotoxins, NIV, DON

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Study of Antixenosis and Tolerance of nine Commercial Cultivars of Tomato to the Cotton-melon Aphid, *Aphis gossypii* Glover (Hem.: Aphididae) under Greenhouse condition

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Abstract

Tomato, *Lycopersicum esculentum* Miller, is a grassy and annual plant from Solanaceae family which is the most important farm plant after potato. The cotton-melon aphid, *Aphis gossypii* Glover (Hem.: Aphididae), is an important pests of tomato and vector of viral diseases in the farms and greenhouses. In the greenhouse its damage ranks second to the whiteflies (*Bemisia tabaci* Gennadius). In this research the antixenosis and tolerance of nine different tomato cultivars including: Strian, Caligen, Super Bita, Super Strian, Super Af1, HAS2274, GS-12-f1, Sun-6200 f1 and Calj was investigated in greenhouse. Antixenosis experiments carried out throught counting the number of aphids attracted to each cultivar in four-leaf stage. In tolerance experiment, pots containing investigated cultivars in six-leaf stage within 21 days in a transparent plastic cage in which the top of it was blocked with a mash, was infected by 40 number of adult aphid. The results of antixenosis test indicate that, the highest number of aphids attracted to Calj and the lowest number to Super Strian was observed. In addition, tolerance experiment showed that Calj cultivar had the lowest tolerance, because of the highest reduction in both height and weight of this cultivar. Therefore, it was concluded that the Super Strian, Super Bita and HAS2274 cultivars possess both antixenosis and tolerance mechanism to the melon aphid and they can be used as a resistant cultivars in IPM of the melon aphid.

Keywords: *Aphis gossypii*, Tomato cultivars, Antixenosis, Tolerance

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۲۹

Non Chemical Methods of Weed Control in Pistachio (*Pistachio vera*) garden in Feyzabad Region

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Abstract

A study was conducted to evaluate non chemical methods of weed control in pistachio (*Pistachio vera*) gardens, located in Feyzabad, Khorasan Razavi Province, Iran, in 2007. The layout was completely randomized block design with six treatments and three replications. Non-chemical treatments were three types of mulches (plastic cover, saw dust and wheat hay (straw)), flaming and rotivating plus an untreated control. Treatments were applied at 5-7 leaf stage of weeds. 35 days after treatments weed density and weed dry matter were measured in each plot. The results showed rotivating, flaming and using mulches (plastic cover, saw dust and wheat hay) caused significant decrease ($p<0.01$) in weed density and weed dry matter compare to the untreated control, respectively. The highest and the lowest weed control efficiency and cost related to plastic mulch and rotivator treatment with 55,000,000 rials and 240,000 rials, respectively. Plastic mulch was not advisable due to the high cost of application. Gardeners prefer rotivator treatment due to the maintaining soil moisture and simplicity of operation. Our results showed in economical point of view, using rotivator for weed control was cost effective but did not controlled weeds as well as plastic, saw dust and wheat hay mulches. In conclusion, saw dust and wheat hay mulches were best treatments advisable for weed control in pistachio gardens by considering both economical and weed control efficiency aspects.

Keywords: Flaming, Mulch, Rotivator, Wheat hay

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۳۰

Host Preference and Biology of Potato Tuberworm, *Phthorimaea operculella* (Zeller) (Lep.:Gelechiidae), on Leaves of 12 Potato Germplasm in Greenhouse

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Abstract

The potato tuberworm, *Phthorimaea operculella* (Zeller), is a major pest of potato in both store and field. In this research, host preference, biology and life table parameters of this pest were studied on leaves of 12 potato germplasm including seven commercial cultivars (Agria, Ausonia, Sprit, Satina, Savalan, Kondor, Morene) and five Iranian clones (PI396156-5, PI397045-15, PI397097-2, PI397082-2, PI396124) in a greenhouse at 25 ± 2ºC, 60 ± 5% RH and photoperiod 14:10 (L:D). In choice experiments, one potted plant from each of 12 tested germplasm were placed in a circle inside the cage (1×1×1.5 meter), then 12 pairs adults (one-day-old) were released inside the cage. After one week, numbers of mines per plant and number of live larvae per plant were counted. The results indicated that the lowest percentage of injured leaflets and the lowest live larvae (5.1, 4.8) were observed on PI397097-2 among the tested germplasm. In no-choice experiments, development time of larvae and pupa, survival rate of larvae and pupa, weight of pupa and life table parameters of the potato tuberworm reared on the leaves of each of 12 tested germplasm were determined. The development time of larvae, pupa and generation time on PI397097-2 were significantly higher than those on the other studied germplasm. The lowest weight of pupa, the lowest survival rate of larvae and the lowest intrinsic rate of increase (0.076) and innate rate of increase (1.079) were observed on PI397097-2. Therefore, it can be concluded that clone PI397097-2 is the least suitable for the potato tuberworm among the tested germplasm.

Keywords: Host preference, Biology, Life table parameters, *Phthorimaea operculella*, Potato germplasm

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۳۱

Virulence of *Cytospora chrysosperma* (Pers.) Fr. Isolates on Walnut Seedlings and Excised Twigs

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Abstract

Cytospora dieback and canker disease is one of prevalent disease of walnut trees in Iran caused by several species of *Cytospora* genus. The aim of this study was to determination of virulence degree in 58 isolates of dominant species, *Cytospora chrysosperma*. isolates from 12 provinces of Iran; Hamedan, Kurdistan, Kermanshah, Ilam, West Azarbaijan, Zanjan, Markazi, Lorestan, Chaharmahal va Bakhtiari, Isfahan, Kohgilouye va Boyerahmad and Fars were inoculated on three–year old seedlings and lesion area have been recorded 30 days after inoculation. Furthermore, Pathogenicity survey on detached twigs carried out in laboratory situation to check accuracy of pathogenicity determination. Based on these results, there was noticeable variation in virulence degree of tested isolates. However, most of isolates didn't show any pathogenicity. Indeed, 34% and 24% of isolates didn't shown significant difference with control in pathogenicity test on seedlings and detached twigs, respectively. Also, there was week but significant (23%) correlation between two evaluation methods. Collectively, it seems that evaluation of virulence or resistance degree would not be reliable via the detached twigs technique.

Keywords: Cytospora canker, Inoculation, Resistance, Virulence

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۳۲

Effect of Metribuzin on Kautsky Curve and Chlorophyll Fluorescence Parameters in Resistant and Susceptible Junglerice (*Echinochloa colona*) Biotypes in the Greenhouse Conditions

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Abstract

Chlorophyll fluorescence induction is a rapid and noninvasive technique for measuring photosynthetic electron transport in plants. Chlorophyll fluorescence measurements were performed under greenhouse condition to characterize how the fluorescence induction curves (Kautsky curve) and its parameters were affected by metribuzin in susceptible and resistant junglerice (*Echinochloa colona* (L.) Link) biotypes. The maximum quantum efficiency of photosystem II (F_v/F_m), the relative changes at J step (F_{vj}) and the area between Kautsky curve and F_m (Area) of susceptible biotype were decreased dramatically at 4 hours after spraying. Application dose of 100 g ai ha^{-1} decreased F_v/F_m, F_{vj} and Area about 0.66, 0.07 and 14062, respectively. While, the R-biotypes showed decrease in the fluorescence parameters only at high concentrations of metribuzin; however, response to application rates of metribuzin were different among resistant biotypes. Apparently, different resistance mechanisms were existed in the R- biotypes. Our results demonstrated that the different measured parameters were different sensitivity to metribuzin treatment. But if we want to choose a parameter which is best suited for field or green house assessment of herbicide efficacy, it could be the maximum quantum efficiency of PSII photochemistry. Since chlorophyll fluorescence parameters were affected soon after herbicide application, therefore, they could be used as a practical means for assaying herbicide efficacy under green house or probably field conditions.

Keywords: Herbicide resistance, Photosynthesis, PS II-inhibitors

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جلد ۲۷، شماره ۲، تابستان ۱۳۹۲، ص. ۳۳

Brief report

Effect of Different Treatments on Breaking Dormancy of Various Species of Barnyard Grass (*Echinochloa crus galli* and *Echinochloa awal orizy cola*)

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Abstract

In order to detect the dormancy mechanism of different species of Barnyard Grass, an experiment was conducted in the Seed Laboratory of Faculty of Agriculture, Ferdowsi University of Mashhad in 2009. treatments included: Gibberellic acid, sulfuric acid, scarification, stratification, preheating, removing seed covering structures of lema and palea and removing the seed coat. It seems fresh seeds of barnyard grass have physiological dormancy located in the seed coat, particularly in *Crus galli*species.

Keywords: Barnyard grass, Seed dormancy, Seed coat, Sulfuric acid

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Brief report

Investigation on Population Flactuations of *Dacus ciliatus* on the Fall Cucumber in Mollasani Region

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Abstract

Population dynamics of cucurbit fly, *Dacus ciliatus* on fall cucumber was studied in Mollasani region in Khuzestan province for two years (2009 and 2010). Sampling was carried out weekly from a 2000 square meter of cucumber field. Every week 10 cucumber fruits were collected randomly and placed in a plastic container. Five centimeter of soft soil was placed in the bottom of container. The opening of the container was covered by a fine mesh. The number and sex ratio of emerged flies were determined. In the first year the activity of flies started in October and continued until the end of December. Peak of population was occurred in the middle of November (302 flies in 10 cucumber fruits). In the second year the activity of *D.ciliatus* started in October and continued until December too. Peak of population in 2010 was occurred in the middle of November (407 flies in 10 cucumber fruits). In both years both sexes were abundant in the field and sex ratio (% female) was about %50. The information collected in this study could be applied in management of this pest.

Keywords: Cucumber fly, Population flactuation, *Dacus ciliatus*, Tephritidae, Cucurbitaceae

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Brief report

Allelopathic Effect of the Iranian Walnut Extract on Germination and Initial Growth of Purslane (*Portulaca oleracea*) and Redroot Pigweed (*Amaranthus retroflexus*)

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Abstract

To study allelopathic effects of iranian walnut (*Juglans regia* L.) on germination and initial growth of purslane (*Portulaca oleracea*) and redroot pigweed (*Amaranthus retroflexus*) an experiment was conducted in shahed university. The result showed that fresh leaf had negatively effected on Radicle Length. Also, with increasing extract concentrations of persian walnut, the seed germination and seedling growth of the two species was reduced significantly.

Keywords: Inhibitory effects, Walnut, Seed, Fresh residues, Extract concentrations

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