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" Abstracts "

In the name of God

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Effect of Azotobacter, Mycorrhiza and different nitrogen levels on yield and yield components of forage maize (KSC 704)

M. N. lkaee[1], M. R. Ardakani[1], F. Rejali[2], M.A. Khodshenasi[3] and M. Seyfi[4]

Abstract

The experiment conducted in base on randomized completely block design with 3 replications in Markazi Agricultural Research Center that its, application effects of two level of biofertilizers, namely Azotobacter (with 2 kg/ha and without biofertilizer) and Mycorrhiza (with 0.5 kg/ha and without mycorrhiza) and four levels of the nitrogen (0, 75, 150, 300 kg/ha) on seed number/ row, seed number/ear, ear weight (without cover), ear diameter and fresh weight of the forage, evaluated. The results showed that Azotobacter caused significant increasing of the parameters such as: seed number/ear row (36.03) number row/ear (486.16), ear weight (180.8 g) and forage fresh weight (44.4 ton/ha) but effect of Mycorrhiza on this characters was not significant. Application of Azotobacter (2kg/ha) and different levels of the Mycorrhiza together, caused significant increasing of seed number/row ear (36.85), ear weight (189.35 g) and also fresh forage weight (49.09 ton/ha).

Intraction effects of Azotobacter, Mycorrhiza and nitrogen in mentioned characteristic were not significant. Results showed that effects of Azotobacter on fresh forage weight (44.14 ton/ ha) by itself is equal to N2 level (150 kg/ha) have been efficiency. Therefore from economical point of view using Urea (150 kg/ha) with Azotobacter inoculums is recommended.

Keywords: Azotobacter, Mycorrhiza, Corn, Yield, Yield components, Nitrogen

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Effect of seedling density and nitrogen fertilizer rate on the growth indices and yield of the rice promising line no. 8405

S. S. Hosseini[1], A. Nabipour[1]*, M. Nassiri[1]

Abstract

In order to determine appropriate plant distribution and nitrogen fertilizer rates on rice promising line 8405, a field experiment was carried out at the Iranian Rice Research Institute – Deputy of Mazandaran (Amol) during 2006 and 2007. This experiment was laid out as factorial in basis of a Randomized Complete Block Design with 3 replications. The first factor was planting spaces in three levels, (16×30, 20×20 and 25×25 cm) and the second factor was nitrogen fertilizer in three levels, 92, 115 and 138 kg N ha-1 respectively). During growing season, some agronomical traits as well as LAI, NAR, CGR, RGR and yield were evaluated. Results showed that planting space and nitrogen fertilizer levels had a highly significant effect on grain yield. The highest grain yield was obtained in 20×20 cm planting space and use of 138 kg N ha-1.

Keywords: Nitrogen fertilizer, Planting distribution, Promising line, Yield

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Investigation of morphological traits of ten new forage sorghum varieties

M. Ebrahim Khaliliyan*[1], M. J. Mirhadi[2] and A. Fouman[1]

Abstract

In order to study different characteristics, 10 new varieties of forage sorghum in two cutting in a split plot in time, based on a randomized complete block design in four replications, were tested in Karaj. All of the varieties are pure line variety; including: KFS1, KFS2, KFS3, KFS6, KFS8, KFS9, KFS12, KFS15, KFS17 and KFS18. Important factors such as the number of leaves, plant height, stem diameter, were recorded each timely. Combined analysis of variance showed significant differences between varieties (except tiller number), cuttings and variety * cutting interactions (Only plant height) for all study traits at 1% level probability. The highest and lowest leaf area mean were produced from KFS6 and KFS18 with 512/84 and 353/25cm2. The highest stem diameter obtained from KFS3 with 1/ 75 cm and the lowest with 1/53 cm from KFS12. The highest and lowest number of tillers, belonged to KFS3 with 3/19 and KFS1 with 2/28 respectively. The highest and lowest of leaves obtained from KFS2 and KFS15 with 14/56 and 11/75 respectively. The highest total dry matter yield varieties KFS18, KFS1, KFS3 respectively 66/21, 24/20, 16/18 tons per hectare produced. KFS6 lowest Dry forage yield variety with 70/13 ha in total, two cutting produced.

Keywords: Forage sorghum, Varieties, Yield, Tiller number, Leaf area, KFS

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Study on seed mycoflora and sorghum leaf spots in Iran

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Abstract

In order to study and identify the sorghum seed borne fungi , sampling was done from different sorghum fields of Karaj, Gorgan, Sari, Amol , Moghan and Zabol during 2010 and 2011.The leaves of sorghum showing leaf spot symptoms were also collected to detect the causal agents of disease. Standard methods including culture on different agar media, blotter test and seed washing method were used to determine the seed health and isolate fungal strains. Fungal isolates were purified using single spore or hyphal tip transfer techniques and identified using valid mycological keys. In this survey totally 19 genera and 18 different fungal species were isolated, purified and identified. Fungi most frequently isolated and identified from different sorghum panicles were Fusarium verticillioides, F. peroliferatum, Aspergillus sp., Curvularia sp., and Alternaria sp. The other fungi with less frequency were also isolated from sorghum seeds. Also 7 Fusarium spp., 10 Alternaria spp., 4 Curvularia spp. and 4 Bipolaris spp. isolates were isolated from sorghum leaf pieces showing leaf spot symptoms after culturing on different agar plates.

Keywords: Sorghum, fungus, seed, disease.

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Evaluation of efficacy of some herbicides on weed control in canola (*Brassica napus* L.) in the Selseleh city of Lorestan province.

J. Nazari Alam[1], *A. Allah Mousavi Boogar[1], M. Sadeghi-Shoae[2] and M. Javadi [3]

Abstract

Canola (*Brassica napus*. L) due to particular agronomic characteristics, has a special place among oilseed crops and more attention has been in recent years. One of the problems with this product, it has weeds in canola crops. Treatments included a performance of Trifluralin, Trifluralin + Butisan (Metazachlor + Quinmerac) and Trifluralin+ Haloxyfob in the canola crop. Experimental was carried out using design in randomized complete block design with three replications, the field experiment was conducted at the experimental station of the Selseleh town of Lorestan province in (2010-2011). Analysis of variance showed that Percent of narrow leaf weed control on the herbicide treatment of Trifluralin and Trifluralin + Butisan was 70 and 76 percent, respectively. Herbicide treatmet of Trifluralin + Haloxyfob had significant impact on the narrow leaf weed control and more than 93% of the narrow leaf weeds can be controlled.

Keywords: Canola (*Brassica napus* L.), Herbicide

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Effects of conservation tillage on crop yield with rotation on wheat- silage corn

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Abstract

Today one of the major concerns of sustainable agricultural is water and wind erosion on agricultural fields. Residue management is a way for reducing erosions, that first crop residues can produce some ddifficulties for proper work of planters of next crop. This study accede for valuating of the best manner for residue management and its effect on soil fertility. Therefore this experiment conducted in RCBD experimental design whit 4 replication in Moghan. Treatments were as below: A: Residue burning, moldboard plow and harrow disk. B: Stem chopping, moldboard plow and harrow disk. C: Stem chopping, chisel plow and rotivator. D: No tillage. After applying of each treatment 704S.c. corn genotype planted as secondary planting.after silage corn and before wheat planting treatments were as below: A: harrow disk , moldboard plows and harrow disk B: moldboard plows and harrow disk For the silage corn. Moldboard plows and harrow disk For the silage corn results showed that there are significant differences at 1% for green yield and dry matter. Results showed for the wheat there was no significant differences of yieldandtreatments on wheat residue caused a significant differences at 5% for soil organic carbon at 0-10 depth of soil surface. Results showed that wheat residue management treatments are statistically significant and lowestyield was 36.21 t ha-1were related to no-tillage treatment. Also, lowest percent of dry matter with 8.15 t ha-1 was related to no tillage treatment.

Keywords: Conservation tillage, Silage corn, Soil organic matter, Wheat, Yield

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Effects of diffrents levels of nitrogen and zeolite on traits qualitative andquantitative of potato in arak region

A. Farhadi[1], H. Madani[2] and M. Changyzi[2]

Abstract

To investigate the effects of different amounts of nitrogen and zeolite on quantitative and qualitative characteristics of potato varieties, Agria factorial experiment based on randomized complete block design in three replicates in the field located 5 km Morales research university, was conducted in the spring of 1388. Factors studied included three levels Nytrvn 96, 184 and 276 kg per ha and four levels of zeolite zero, two, four and six tonnes per hectare were Klynvptylvlyt type. The results of variance analysis showed that different amounts of nitrogen and nitrogen content of zeolite on the gland, gland crude protein, and the remaining gland Nytrath N ha 1% probability level was significant. Zeolite and the impact on the number of tubers per plant at 5% level of probability was significant. High performance value of 276 kg of pure nitrogen with the rate 13/47 Hktarbdst tons respectively. Zeolite interactions and nitrogen levels on yield per unit gland was significant. Gland with the highest amount of 276 kg of pure nitrogen and six tons of zeolite was 61 ha significant difference with the consumption of 184 kg N treatment and six tons of zeolite was not. So with less nitrogen fertilizer consumption to 184 kg ha can function without a significant reduction in nitrogen fertilizer efficiency will to act. Zeolite with increasing intake of nitrogen accumulation in the gland decreased Nytrath harmful.

Keywords: Potato, nitrogen, zeolite, performance

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Effect of pyridoxine on remobilization, yield and yield components of wheat times under drought stress

V. Ghasemi, [1]* and D. Eradatmand Asli, [2]

Abstract

In order to study of different levels of drought stress and pyridoxine effects on yield, yield components and remobilization of assimilate in wheat an experiment was conducted on split plot on the basis of complete block design in four replication in the year of 2010- 2011. Pyridoxin exisits in endosperme cells of wheat grain and it has an essential roleas a cofactor in enzaymes raction in plant amino acids and vitamins metabolism. In this experiment main plot was three levels of drought stress including -1Normal condition (control), -2 Drought stress in per anthesis (cod39 Zadoks) and -3 Drought stress in post anthesis (ZGS 65) and sub plot was different levels of pyridoxine including, -1 Without using pyridoxine (control), -2 Treatment of seeds with 0.01 percent of pyridoxine and -3 treatment of seeds with 0.02 percent of pyridoxine. Pyridoxine significantly increased yield and yield components of wheat. Probably pyridoxine with positive effect on root growth and increasing the uptake of root improved the production of assimilate during vegetative growth of plant and remobilization of dry matter significantly increased in plant. The highest yield and yield components and remobilization of assimilate achieved in 0.02 percent of pyridoxine application. Results showed pyridoxine application of seeds significantly decreased the negative effect of drought stress specially in post anthesis condition.

Keywords: Wheat, Water stress, Grain filling, Pyridoxine

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Study of Pathogenicity variation of *Fusarium verticillioides* isolates, causal agent of corn ear rot in field and greenhouse trials

M. Parchamian[1], V. Rahjoo [2*], M. Zamani [2], M. Pirnia [3] and F. Azizi [2]

Abstract

Fusarium ear rot is the most important disease of corn in Iran. In this research with the purpose of studying the casual agent, some infected ears of corn were collected from fields of Esfahan, Sari, Kermanshah and Karaj. A total of 40 Fusarium isolates were identified after isolation and purification. According to valid mycological key references based on the different morphological characters and some physiological traits, 32 *Fusarium verticillioides* and 8 Fusarium proliferatum isolates were identified. In order to evaluate the pathogenicity variation of 22 *Fusarium verticillioides* isolates on susceptible maize line (MO17), the causal agents of Fusarium ear rot of corn, an experiment based on a randomized complete block design (RCBD) with 24 treatments (The treatment were consisted of 22 F. verticillioides isolates, one control with sterile distilled water inoculation, and one control without inoculation) and three replications were conducted in greenhouse and field. The results of the analysis of variance of data showed that difference between treatments were statistically significant. Totally, three isolates (4 and 6 from Karaj, 20 from Sari) of *Fusarium verticillioides* showed the highest level of virulence among all 22 isolates in greenhouse. Totally, two isolates (14, 18 from Sari) of *Fusarium verticillioides* showed the highest level of virulence among all 22 isolates in field.

Keywords: Maize, resistance, fumonisin, *Fusarium verticillioides*.

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Evaluation of Yield and Agronomic Traits in Canola cultivars Under Drought Stress Condition Using Multivariate Statistical Methods

K. Mostafavi[1]*, S. H. Shojaei[2], A. Bakhtiari Gharibdoosti[2], R. Bahmani[2]

Abstract

To study the yield and agronomic traits in canola variety under drought stress condition, an experiment was conducted base randomized complete block design (RCBD) with three replications in researching farm of Karaj branch, Islamic Azad University in agriculture year 2010-2011. Investigated traits including kernel yield, days to physiological maturity, days to fifty percent flowering, pod number in main stem, plant height, biological yield, pod length, kernel number in pod, thousand kernel weight, leaf length, leaf width, pod weight and lateral branch. The variance analysis of the studied traits showed that for all traits among studied cultivars there is a significant difference. The most amount of seed yield was for Sarigol and after that SLMO46 and Golden 13 cultivars had more excellence. Also the results of stepwise regression showed that biologically yield, pod weight and the number of pods in main stem had more effect on the yield. In factor analysis, five firs factors justified more than 77 percent of data variance. In firs factor leaf length and leaf width, in second factor biologic yield and seed yield, in third factor the number of days to 50 percent of flowering and the number of day to physiological maturity, and in forth factor number of lateral branch trait and in fifth factor the number of seeds per pod had the most effect.

Keywords: Canola, Drought stress, Analysis of variance, Correlation, Cluster analysis

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