Study of soil formation and classification of Islamic Azad University - Fasa branch's lands

Owji, M. R. [1]

Abstract

In order to identification, classification and soil formation in Islamic Azad University of Fasa branche's lands were studied. These lands including two parts, one of them with 12 hectares extent located in 5 km of the west of Fasa and other one with 220 hectares extent located in 15 km of the west of Fasa in Fars province. Soil moisture and thermal regime is xeric and thermic respectively. For investigations of these lands, topographic maps were used and many profiles were dogged and after soil morphology surveys, soil sampling and physical and chemical experiments were done. Investigation of physico-chemical and morphological properties of these soil showed they were Lomy-skeletal, mixed, thermic, Typic Calcixereots soils. These soil don't have properties of other orders and have a calcic horizon in xeric moisture regime, therefore these soils are inceptisol. In these soils strongly effect of parent material in soil formation is observed. Light texture and a lot of gravels and cobbles in these soils are caused to increase permeability rate and carbonates leaching from upper horizons and accumulation in soil lower horizons. In calic horizon, lime is observed as pendant concretion and powdery pockets.

Keywords: ***Soil classification, Soil genesis, Inceptisols, Calcic horizon***

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Effects of $CaCo_3$ on alfalfa salinity tolerance

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Abstract

Alfalfa is the most important forage crop. High adaptivity to unfavorable environment conditions; high genetic diversity and high yield quality and quantity make alfalfa the most planted crop in world humid and dryland fileds. One of the most important factors which decrease yield and cultivation is soil and water salinity. Selection for tolerant genotypes with correct culture managment lead to increase yield and cultivation in country's saline conditions. Adding Ca2+ to soil solution by its antagonistic effects on Na+ leads to decrease toxic effect of Na+. Therefore 4 cultivars Golestan (20313), Sistan and Bluchestan, F.A.O (2566) and Ahar Hamedani of alfalfa arranged in an experiment to study of CaCO3 effect of growth and yield in saline conditions. Experiment was conducted in RCBD based factoriel in 5 salinity levels in 3 replicates at hydroponic culture. The cultivars grown in saline condition till cutting and then pots leached with distilled water then salinity and CaCO3 levels were used in Hougland nutrient solution. Data was collected after cutting shoot, root, stem and leaf dry weight, biomass, plant height, main root length, main stem internod number and tiller number per plant measured. All of characters showed significant differencies at salinity and Ca2+ interaction except plant height. Yield had the most significant correlate with stem dry weight in salinity (R2=0.962). Using CaCO3 decrease the salinity effect on measured characterys, especially in resistant cultivars. Golestan (20313) and F.A.O (2566) Cultivars had the most yield in $Ca2^{++}$ saline conditions.

Keywords: ***Alfalfa, salinity tolerance, CaCO3, nutrient solution***

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Determining of grape producers technical efficiency and effective factors on it in Gazvin province.

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Abstract

Technical efficiency evaluation is one of the methods can help researchers to measure producer distance from the best possible product and recognize and study the reasons of the distance. In technical efficiency evaluation we just study effective physical inputs on production and don't consider Rial's value of inputs. The best step is determining and evaluation of product function, which in effective inputs can be recognized, and their effects can be clear on production and then we can evaluate technical efficiency using frontier function production. In this research, the average of technical efficiency was %63 that indicates normal position in production. The reason of this difference first is how to grape training which grows mostly in creeping manner, and planting system is usually in furrow. Application of localized placing and animal fertilizer is very effective on grape production. Technical efficiency is low, because of lacking exact information of producers about grape nutrition and not to following mentioned rules and principles.

Keywords: ***Vitis vinifera, Production functional, Tecnical efficiency, Takestan, Gazvin***

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Effects of topography and time sequences on soil genesis with calcareous parent materials under semi-arid conditions of Rajain, Miyaneh

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Abstract

Genesis, classification and morphological and physico-chemical characteristics of Rajain's plain soils affected by topography, as a soil forming factor, under semiarid condition of East Azarbayejan province in northwest of Iran with calcareous parent materials were studied. This plain with 42000 ha. is located in 35 th km southeast of Miyaneh in East Azarbayejan province. The soils of the studied area have "Xeric" moisture regime and "Mesic" temperature regime. The average plain elevation is 1290 m above sea level. The mean annual precipitation and temperature are 305.4 mm and 12.9ºC, respectively. Three physiographic units including plateaus, piedmont alluvial plains and river alluvial plains were identified. According to results of field observation and laboratory analysis, it seems that topography and time are the main factors affecting soil formation at the studied area. They caused differences among the soil characteristics in this area. Topographical variation from upper plateaus to lands of riversides and also rate of runoff, amount of water penetration into soil and vertical translocation of salts and materials within the soil profile have affected soil development and genesis. Entisols are observed in river alluvial plains and southern piedmont alluvial plains without distribution of secondary calcium carbonate and any development of profile and only with ochric epipedon. Inceptisols showed B horizon, calcic horizon and cambic horizon which are characteristic of an early stage of soil development.

Keywords: ***Taxonomy, Topography, Time, Calcareous parent materials, Entisols, Inceptisols, Soil profile and Physiography.***

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Isolation of native *Bacillus thuringiensis* Berliner isolates from the agricultural soils of Iran

Marzban, R.[1] and Salehi Jogzdani, G. R.[2]

Abstract

Isolation and collection of native *B. thuringiensis* isolates is the base of research on *B. thuringiensis*. During a 3-year study (1999-2001) 2234 soil samples were collected from 28 provinces of Iran. Bacteria were isolated according modified method of Anwar Hossain *et al.* Most isolates were isolated from cotton, oil seed, sugar beat and rice field soil. Gilan and Ardabil provinces had been most isolates respectively. A total of 128 crystal- forming isolates were successfully obtained from 28,445 bacterial spore-forming colonies examined. Toxicity tests on *Helicoverpa armigera* (Lep: *Noctoeidea*) and *Leptinotarsa decemlineata* (Col.: *Cherisomeliidea*) revealed that over %58 of all isolates were toxic.

Keywords: ***Isolation, Agricultural soil, Bacillus thuringiensis, Iran***

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Evaluating of Hybrid Mini Tubers Performance as Seed Tubers in Potato Production Compared to Their Parents

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Abstract

In order to evaluate the possibility of the use of hybrid mini tubers in potato production, nine TPS families including Desiree×Payezeh, Caesar×Payezeh, Caesar×Aula, Aula×Desiree and Draga ×esiree Hybrids and Desiree, Aula and Daiezer open pollinated populations with five Clonally varieties: including Aula, Caesar , Desiree, Draga, Astrix were compared in an augomented design based on completely randomized blocks. Agronomic traits such as plant yield, plant height, number of stem in plant and number of tubers in plant were noted. The results showed that there are significant differences among treatments for plant height, number of stems and number of tubers and yield. Desiree variety with 557gr per plant yield and then Desiree×Payezeh and Caesar×Payezeh hybrids with 549 and 445gr per plant yield respectively had the higher yield. The least yield was of Aula×Desiree and Payezeh×Aula hybrids. The Desiree×Payezeh hybrid had the highest and the Draga variety and open pollinated Caesar had the lowest height respectively. Astrix and Desiree varieties with average stem number of 4.5 and 4.4 had the highest number of stems. Concerning the number of tubers, Desiree×Payezeh Hybrid with average 20 tubers and Draga with average 4.6 tubers had the highest and lowest number of tubers respectively. The study of correlation coefficient between traits showed a significant relationship between yield plant with the numbers of stem and height of the plant, and also the plant height showed a significant relationship at 5% probability level with the number of tubers and stems.

Keywords: ***True Potato Seed, Mini Tuber, Hybrid, Seed Tubers, Potato***

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The effect of N-fertilizer sources and amounts on yield and yield components of corn, Single Cross 704 cultivar

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Abstract

In order to evaluation of N-Fertilizer sources and amounts effect on yield and its components in single cross 704 corn, an experiment was conducted in research field of Islamic Azad University-Miyaneh branch. In this study, two levels of N-Fertilizer including Amonium Nitrate and Urea with amounts including 100, 160 and 220 Kg of pure Nitrogen per hactar as a factorial design in compeletly randomized blockes with four replications was run. One of plots in each treatment was considered as control without N-Fertilizer receiving. Plants was planted as farrow system on the rows with 75 cm intervals and 67.000 plants/ha density in 23th of Ordibehesht. N-Fertilizers were applied in three times including simultaneously with planting, four and eight leave stages as top dressing. The plants were selected from 5 m^2 of three middle rows for determining of seed yield and biological yield in physiological ripping stage and 15 plants randomizly were selected from each plots for yield component and head numbers in a plant in row and seed number in row were counted and 1000 seeds weight was evaluated. It is revealed that Amonium Nitrate application has higher yield than Urea application and 160 and 220 Kg/ha of pure Nitrogen has the same or more then yield of control and 100 Kg/ha treatment. The reason of high yield in Amonium Nitrate treatment has contributed with corn efficiency in Nitrogen Uptake. Low yield in Urea treatment is related to Nitrogen wasting by sublimitation and washing.

*Keywords**: Nitrogen, Corn, Single cross 704, Zea mays***

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Investigation of different planting dates effects on yield and yield components of four soybean cultivars in Miyaneh region

Azizi, M.[1], A. Faramarzi, M. Abdi[2] and J. Ajalli[3]

Abstract

In order to investigation of the effect of planting date and varity on yield and some agronomic characters in soybean (*Glycine max*) a field study was conducted as factorial experiment as a randomized complete block design with three replications in Islamic Azad university – Miyaneh Branch. There were planting dates in three levels: 24 April, 9 May and 25 May, as factor A and cultivars in four levels: Clark, Williams, Zan, Harcor as factor B. The Results showed that planting date has a significant effect on plant height , number of pod per plant and grain yield ,biological yield, Harvest index and Kerned oil content. With delaying on planting date after 24 April, height plant number of pod, plant grain yield, biological yield, harvest index, and oil context where decreased but no significant difference on thousand grain yield, number of seed in pod and protein percent effect of planting date was not significant cultivar Zan had a higher grain yield, biological yield, number of pod plant thousand grain yield and oil percent in all three planting dates but it had a lowest protein percent in comparison with other cultivars. Also the results showed that the best planting date and cultivar, is 24 Apr., and Zan C.V. with 3649 kg/ha grain yield. There were positive and significant correlation coefficients between grain yield and biological yield, harvest index, oil percent , Kernel protein context, thousand grain yield and number of pods per plant at %1 sprobability level .

*Keywords**: Glycine max, planting date, cultivar, yield, yield components***

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