

## Effect of drought stress on some morphological characteristics of two sunflower (*Helianthus annuus*) hybrids at different planting densities

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### Abstract

Effect of drought stress on some morphological characteristics of two sunflower (*Helianthus annuus*) hybrids at different planting densities was investigated. The experiment was conducted as split factorial based on randomized complete block design with three replicates at research farm of Islamic Azad university of Tabriz in 2006. Treatments were Record and Azarghol sunflower hybrids, three levels of the drought stress including 75%, 50%, 25% available moisture, and three levels of planting density including 80, 90 and 100 thousand plants ha<sup>-1</sup>. Between row spacing was 60 cm with in row spacing of 16, 18 and 20 cm, respectively for the three planting densities. The results indicated that exertion of the drought stress led to a significant decline in plant height and diameter, sunflower head diameter and dry weight, and biomass weight per plant and per hectare ( $p < 0.01$ ). In addition, effect of the drought stress was thoroughly overlapped by density in the above characteristics. However, the 100% available moisture (control) in 80 thousand and 25% available moisture in 90 thousand plants ha<sup>-1</sup> had the most and least dry weight of biomass, respectively. Azarghol hybrid had the highest plant and sunflower head diameter, while Record showed the most plant height at different drought stress levels. Height and diameter of plant and the sunflower head, dry weight of head and biomass showed significant and positive correlation with oil and seed yield per plant and hectare.

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**Keywords:** Drought stress, planting Density, Sunflower, Record, Azarghol

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## Survey of the infective tick fauna on cows and their seasonal population variations in Azarbayejan-e-qarbi province, Iran

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### Abstract

Ticks are obligatory ectoparasites of animals especially mammals. Tick species living on cow skin, their population variations and infection rate of cows according to age, gender and season were studied from March 2006 to February 2007 in Azarbayejan e qarbi province, Iran. Tick specimens were collected from 1800 male and female cows of different ages in 21 cities of the province and data were analyzed by SPSS software. As a result, 183 cows (%10.16) have been infected by ticks. The highest and lowest infection rates were observed in late May and February, respectively. Results of data analysis showed that there were significant differences between numbers of ticks isolated in different seasons. From 703 adult and larvae of identified ticks, *Hyalomma anatolicum anatolicum* (%49.78), *Rhipicephalus bursa* (%18.91), *Hyalomma anatolicum excavatum* (%11.95), *Rhipicephalus sanguineus* (%13.37), *Dermacentor marginatus* (%4.55), *Boophilus anulatus* (%0.71) and *Rhipicephalus thuranicus* (%0.71) had highest abundance, respectively. Ticks on the cow body surface were observed on inguinal region (%50.26), perineum (%30.1), breasts (%15.87) and testis (%3.7).

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**Keywords:** Tick fauna, Cow, population variation, Azarbayejan-e-qarbi

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## **Determining optimal pattern of integrated production of agricultural and horticultural crops with emphasis on production risk in Fars province, Iran**

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### **Abstract**

In order to develop a risk-including optimal cropping pattern of agricultural and horticultural crops in Neyriz, conventional linear programming and risk programming approaches including MOTAD and TMOTAD were applied. The data set was obtained throughout the Neyrizian farmers randomly. The results showed that in MOTAD model, the minimized risk or objective function increased by rising expected income, leading to replacement of low income bearing crops with high ones. Orange and tangerine due to high income bearing condition were preferred to apple, cotton and watermelon in higher levels of expected income. In fact, the pattern was led toward high income crops. The results of TMOTAD model revealed a reduced cropping area for cotton and watermelon, replacing with high income crops indicating the effect of risky condition on mentioned crops. The cropping area of orange and tangerine were increased as a high income bearing. Another considerable finding was that the results of the above three model were the same at highest income risk.

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**Keywords:** Linear Programming, MOTAD Programming, TMOTAD Programming and Neyriz

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## Using of crops as trap for *Orobanche aegyptiaca* management in tomato in greenhouse conditions

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### Abstract

Application of catch and trap plants is a cultural and biological methods for *Orobanche* soil seed bank reduction. Catch crop is a host crop that is sacrificed before broomrape emergence and trap crop is a false host that stimulates the broomrape to germinate but does not allow it to attach and attack. For evaluation of *Orobanche aegyptiaca* seed reaction to root exudates of 17 crops, 10-15 mg of broomrape seeds were mixed with cultivation bed and the crop seeds were sown in the pots, in a completely randomized design with four replications. After 40 days, the plants picked up from the crown and 7 leaf tomato seedlings were replaced. Dry and fresh weight of *Orobanche* and tomato aerial parts and fruits and *Orobanche* stem numbers were recorded at the end of trial. Results revealed that, Berseem clover was the strong catch crop and sunflower and pepper were weak ones. Flax and broomcorn were also strong trap crops and cotton, pinto bean, lens, broad bean and pea were weak ones. Other crops including wheat, barley, maize, sugar beet, sesame, and soybean were not considered as a host or trap and catch crops.

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**Keywords:** Trap crop, catch crop, Broomrape, *Orobanche aegyptiaca*, Cultural control, biological control

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## Comparison of wool characteristics of Arkhamerino×Ghezel and Arkhamerino×Moghani sheep crossbreeds with their parents

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### Abstract

Crossbreeding of indigenous breeds of sheep with exotic fine wool breeds is one of the methods in achieving rapid improvement in wool quality. This study was conducted to compare the wool characteristics of Arkhamerino×Ghezel (ARG) and Arkhamerino×Moghani (ARM) half-breeds with their parents. 22 Arkhamerino (AR), 25 Ghezel (G) and 16 Moghani (M) sheep were crossed during 1999-2001 and samples were collected from right body midside of 9-15 month-old half-breeds. Fiber diameter (FD), Variability of fiber diameter (CVf), staple length (SL), kemp (KP) and Modulated fibers (MP) were assessed in samples. AR sheep produced significantly higher quality wool ( $P<0.01$ ). Also both half-breeds significantly produced finer wool than their Iranian parents ( $P<0.01$ ). M sheep had significant higher CVf ( $P<0.01$ ). The SL of half-breeds was similar to their Iranian parents and they had higher SL than AR parent ( $P<0.01$ ). KP of both half-breeds dramatically decreased in comparison to native sheep and ARM had lower MP than M sheep ( $P<0.01$ ). In conclusions, wool quality of half-breeds was better than Iranian native parents.

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*Keywords:* **crossbreeding, diameter, kemp**

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## **The effect of planting date on yield and yield components of different sesame cultivars under Miyaneh climatic condition.**

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### **Abstract**

This study was conducted to investigate the effect of two planting date on yield and yield components of four sesame cultivars including Mahalli Varamin, Moghan-17, Karaj-1 and Mahalli Behbahan at resarch farm of Islamic Azad university, Miyaneh branch during summer 2005. Experiment was conducted as factorial based on randomized complete block design with 3 replications. In this study, dry weight of various organs, capsule numbers of each plant, number of seeds in a capsule, protein and oil percentage, and yield was evaluated. Results revealed significant difference between planting dates in most of evaluated traits, except grain yield. There was significant difference between planted cultivars in most evaluated traits, except number of capsules, protein percentage, dry weight and grain yield. The difference of the interaction between planting date and cultivars on studied traits such as number of seeds in a capsule, weight of 1000 seeds and harvest index (HI) were also significant. The results showed that karaj-1 and Mahally behbahan cultivars had maximum (1625 kg/ha) and minimum (745kg/ha) yield, respectively.

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**Keywords:** Sesame, Cultivars, planting date, yield, yield components, Miyaneh

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## **The study of seed viability, amount of proline and chlorophyll of local genotypes of rice under salt stress**

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### **Abstract**

Changes of seed germination percentage and proline and chlorophyll amounts of Nogoran and Sorkheh and their known cultivars including, Zayandehrud, Sazandegi, and purred lines of 67-47 and 67-97 in reaction to 0-10 dsm/m sodium chloride concentrations were investigated to compare salinity tolerance of local rice genotypes. Experiment was done in a randomized complete block design with three replications. Analysis of variance and comparison of means were also done with Duncan multiple range test at 1% probability level. Increasing of sodium chloride's concentration in environment decreased seed germination percentage, radicle and coleoptile dry weight and chlorophyll amount of local rice genotypes at 1% probability level. Results of comparison of seed germination percentage means showed better performance of 67-47, Nogoran, Sorkheh and 67-97 than other genotypes. However, dry weight of radicle and coleoptile and amount of chlorophyll were seen in higher rate in genotype 67-47. Amount of proline amino acid in all genotype was increased with increasing of sodium chloride concentration. The highest amount of root and leaf proline was belonged to Sorkheh. Cultivation of genotype 67-47 was recommended in attention to relative salinity of soil in studied region and planting of 67-97 was not recommended duo to sensitivity of it's chloroplasts to high sodium chloride concentrations.

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**Keyword: Local genotypes, rice, Salt stress, Proline, Chlorophyll**

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**In vitro pathogenicity of fungi *Pochonia chlamydosporia* var. *chlamydosporia* isolates on root-knot nematode *Meloidogyne javanica***

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**Abstract**

Biological control is a safe tool for plant pest and disease management and numerous efforts have been done to introduce biological control agents for nematodes controlling. *Pochonia chlamydosporia* var. *chlamydosporia* is one of promising biological control agents with high potential to reduce root-knot nematode (RKN) and cyst nematode populations. In this experiment, 128 and 18 soil samples were collected during 2004 to 2006 from fields infected by cyst nematodes and RKN in Fars province of Iran, respectively. Media for selective isolation were prepared on the basis of CMA and Shrimp-Agar. Pathogenicity test was done on 13 isolates of *P. chlamydosporia* var. *chlamydosporia* obtained from CBS collection and Iran. Then the numbers of infected immatures, matures, empty and uninfected eggs were recorded. The mycelium of all tested isolates penetrated in eggs of *M. javanica* in a range of 39.85% to 90.17%. There was a significant difference in the ability of isolates in parasitizing eggs ( $P < 0.0001$ ). Mentioned isolates were placed in 3 different groups using Tukey test. 10 isolates could invade mature eggs in a low range and there was no consistent correlation between the percent of infected eggs and hatched juveniles.

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**Keywords:** Root-knot nematode, *Meloidogyne javanica*, biological control, *Pochonia chlamydosporia* var. *chlamydosporia*, pathogenicity test

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## **The effect of different levels of rice bran on performance of laying hens**

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### **Abstract**

This study was conducted to evaluate the effect of different levels of rice bran on performance of laying hens. Experiment was done on two hundred and fifty six laying hens in a completely randomized design with four treatments and four replications during 8 weeks. Egg production mean and egg weight were weighted daily. Egg mass production and used diet weight were also weighted weekly. Treatments were the levels of rice bran Inclusion including, 0, 5, 7.5 and 10 percent. Result showed that performance of laying hens was not significantly affected by inclusion of rice bran up to 7.5 percent, whereas egg production, egg mass and feed conversion were negatively affected by 10 percent of rice bran. Egg quality was not significantly affected by inclusion of different levels of rice bran in laying hens diet. It was concluded that, rice bran can be used as an alternative feedstuff in diet at inclusion levels up to 7.5 percent without negative effect on laying hens performance and egg quality.

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*Keywords:* **Rice bran, performance, laying hens**