oblivious of the Health and Safety benefits wool can bring. Due to subsequent low wool prices, fewer farmers are likely to grow wool in the future. With this in mind, the wool industry needs support to redress this threat to its existence.

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ORAL PRESENTATION

Biotechnology in Agriculture

Isolation of salt tolerant bacteria and their usage in salt-affected soils

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Salinity cause soil infertility and limits the ability of plants to withdraw water and nutrients from soil. The effects of salinity on soil chemical and physical properties and on plant growth are well documented, but soil microbiological aspects of saline environments have been less studied. As salt-affected soils generally are infertile with poor physical properties and salt tolerant microorganisms have special properties to cope with salinity, we aimed to isolate and characterize salt tolerant bacteria for the amendment of the salt-affected soils of Erzurum, Turkey. Firstly, we isolated salt tolerant bacteria and then investigated their $CaCO_3$, $MgCO_3$ and $CaSO_4$ dissolution abilities. It was observed that some isolates require at least 10% NaCl for the growth whereas some isolates can grow in 20% NaCl concentrations. We observed a slight $CaCO_3$ dissolution activity and no $MgCO_3$ and $CaSO_4$ dissolution ability of the isolated bacteria. The isolates can be further investigated for the nitrogen fixing and phosphate solubilising activities.

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ORAL PRESENTATION

Biotechnology in Agriculture

Comparison of abaxially and adaxially cultured cotyledon explants on in vitro regeneration of *Vicia sativa cv. Selcuk*

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Common vetch (*Vicia sativa*), is popularly used forage and fodder crop in Turkey. It is toxic to non ruminant animals including humans, as it contain γ-glutamyl with active molecule of β-cyanoalanine; which deplete protective reserves of the sulfur amino acid cysteine. Traditional plant breeding techniques have failed to eliminate this problem. Plant tissue culture could be used to alleviate the problem positively. There is no report on micropropagation of common vetch. Therefore, the study developed a protocol and compared regeneration from abaxially and adaxially cultured cotyledon explants of the common vetch cv. Selçuk. Both explants were treated with 100 mg/l BAP for 24 h before culture on MS medium containing 0.25, 0.50, 0.75 and 1.00 mg/l BAP. Developing shoots were rooted on MS medium containing 0.75 mg/l IBA. All plants acclimatized in the growth room after 20–25 days, set flowers and seeds. The protocol will be applied for the genetic transformation in the future experiments.

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ORAL PRESENTATION

Biotechnology in Agriculture

Genetic transformation of cv. Gokçe of chickpea using mature embryonic axis explants

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Conditions were optimized for transformation of mature embryo axis explants of chickpea cv. Gokce using *Agrobacterium tumefaciens* strain GV2260::35 GUS INT harbouring the uidA gene that codes for β-glucuronidase or GUS expression and the npt II gene that codes for kanamycin resistance. Maximum GUS expression occurred when the explants were treated for half hour with the strain. The regeneration of putative transgenics was obtained on selection medium containing 0.5 mg/l BAP, 50 mg/l kanamycin and 500 mg/l amoklavin. Putative transgenic shoots were rooted on MS medium containing 0.03 mg/l IBA, 50 mg/l kanamycin and 500 mg/l amoklavin. The rooted plantlets were acclimatised in the growth room. NPT II and gus genes were confirmed in putative transgenic plants by PCR reaction. The results achieved in this study indicate that it should be possible to achieve stable transformation in chickpea with strains of *A. tumefaciens* harbouring herbicide tolerant, insect tolerant or other useful genes. Experiments towards this end are in progress.

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ORAL PRESENTATION

Biotechnology in Agriculture

MSc, PhD theses and scientific papers, on the subject of field crops biotechnology in Turkey

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Field crops are studied as cereals, food grain legumes, industrial crops, fodder and forage crops in Turkey. To solve problems of these crops, biotechnological studies are gaining importance with the passage of time. Unawareness about previous research results in repetitions that result in waste of time, money and inconvenience. Therefore, this study aimed to compile all biotechnological research in the universities and public sector organisations of Turkey in form of abstracts. The study revealed that in a period, starting from 1966 to 2011, 14, 29 18 and 9 PhD and MSc theses on cereals, food grain legumes, industrial plants forage & fodder plant biotechnology were produced respectively. Similarly, 217, 140, 677 and 75 scientific papers on cereals, food grain legumes, industrial crops, fodder and forage crops biotechnology were published in local or

international scientific journals from Turkey. This study will help in giving direction to the future biotechnological studies in these crops.

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ORAL PRESENTATION

Biotechnology in Agriculture

In vitro regeneration of Turkish dwarf chickling (*Lathyrus cicera* L.) from longitudinally sliced cotyledon node explants

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The forage legume cicera chickling (*Lathyrus cicera* (L.) D.C.) distributed in Mediterranean region is gaining importance in terms of economy and agriculture in Turkey. However, full potential of the legume has to be realized yet due to the presence of neurotoxin, β-N-oxalyl-L-a,β-diaminopropionoc acid (ODAP) causing lathyrism. This study aimed to develop efficient micropropagation system using longitudinally sliced cotyledon node explants for use in Agrobacterium mediated genetic transformation in the future. In this study, instead of the agar as a gelling agent alternative gelling agent isubgol was used. The results showed that the maximum number of shoots per explant was achieved on MS medium solidified with 10 g/l isubgol gelled medium containing 0.60 mg/l BAP–0.2 mg/l NAA. Shoots were rooted by pulse treatment with 30 mg/l IBA for 5 min followed by culture on 10 g/l isubgol gel solidified MS medium. The results showed 80% rooting in treated shoots. The rooted plantlets were transferred to pots containing sand and organic matter in pots and acclimatised.

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ORAL PRESENTATION

Entomology and Plant Pathology

Genotyping of *Fusarium graminearum* and *F. culmorum* isolates by microsatellite markers

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Correct diagnosis of the causal agents and genotyping of them by using PCR based techniques is necessary for plant pathology in agriculture and then for struggling with diseases. Twenty *Fusarium culmorum* and 43 *F. graminearum* isolates from Turkey and Iran were analyzed by polymerase chain reaction (PCR), in this study. Ms-Fg6808, FusSSR17 and FusSSR22 microsatellite markers were amplified in all isolates in order to determine repeat motif and number differences into (GAAA)n, (GA)n and (GAT)n, respectively. Amplification product sizes were in the range of 261–407 bp for Ms-Fg6808, 176–250 bp for FusSSR17 and 193–309 bp for FusSSR22. Four isolates belong to each marker were selected and sequenced. Each of repeat motifs in all sequenced isolates showed repeat number differences. Single nucleotide changes were detected in all isolates for FusSSR22 and in only F3 for FusSSR17 (T → A, A → G, respectively). Genetic variation among microsatellite locus in these isolates was also determined (max 40%).

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ORAL PRESENTATION

Entomology and Plant Pathology

The influence of western corn rootworm – *Diabrotica Virgifera Virgifera* Le Conte attack, upon quality of corn seeds

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Diabrotica virgifera virgifera Le Conte is considered one of the most important pests of corn grown in monoculture. Damage caused by the Western Corn Rootworm is considerable. The attack is produced by larvae and adults, serious affecting the grain production. Following laboratory analyzes may notice a decrease in the values of all track quality indicators for ears harvested from plants attacked by *Diabrotica virgifera virgifera* compared with the cobs from the healthy plants. Values of fat content of attacked cobs ranged from 2.76 and 4.23%, protein content ranged from 9.1 to 10.6% and starch between 69.7 and 70.5%. The average fat content of the cobs attacked percentage decreased by 11%, protein content by 16% and starch content dropped by less than one percent.

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ORAL PRESENTATION

Food and Nutritional Sciences

Growth and biomass profile of *Spirulina* (*Arthrospira*) *Platensis* production from Turkey (Nazilli-Aydın)

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The filamentous cyanobacterium *Spirulina* (*Arthrospira*) is produced commercially all over the world. And dried *Spirulina* biomass product is a valuable food supplement, feed and is used as a food coloring and additive. In this study, *Spirulina* was grown in open raceway ponds in Aegean Region (Aydın-Turkey), and several physicochemical (e.g., temperature, pH, dissolved oxygen concentration, conductivity and irradiance) and biological (e.g., biomass concentration and yield) variables were studied. Dissolved oxygen concentration in the cultivation ponds ranged between 10 mg l^{-1} in winter (110% of O_2 saturation) and 30 mg l^{-1} in summer (230% of O_2 saturation); a clear decrease of biomass concentration was found when dissolved oxygen was >20 mg l^{-1}. Neither biomass concentration nor productivity was saturated at the maximum temperature achieved in the open pond during this study (approx-