

gene has been also related to abiotic stress tolerance. The high influence of genotype on regeneration makes necessary to optimize the transformation protocols for each genotype of interest. We have developed two protocols that have permitted to regenerate transgenic plants from *Agrobacterium tumefaciens* infected explants. Twelve plants of eggplant and six plants of *C. moschata* were successfully grown under selective conditions. Insertion of *BvSAT* gene was confirmed by PCR in these first isolated plants. Evaluation of these materials is underway and may confirm if the introduced gene increases the value of these genotypes.

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Determination of physiological features of mutant *Trichoderma harzianum* isolates and antagonistic activity against plant pathogen *Fusarium sp*

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The purpose of this study is the Determination of physiological features of mutant *Trichoderma harzianum* isolates and their antagonistic activity. We used *T. harzianum* isolates, growth media and reagents as material. Isolation of mutant *T. harzianum* isolates from soil obtaining the mutant *T. harzianum* isolates. Investigation of antifungal properties of mutant *T. harzianum* isolates. Testing of volatile component of mutant *T. harzianum* isolates against plant pathogens. Performing of fungal inhibition tests. Determination of enzyme activity of mutant *T. harzianum* isolates. Performing of assimilation tests of carbon sources. It was detected that mutant *T. harzianum* isolates had effects on plant fungal pathogens *Fusarium sp.* by the means of filtrate, volatile compounds and enzymatic activities. It was found that T11 isolate against *Fusarium oxysporum* and *Fusarium moniliforme*, T4A isolate against *Fusarium solani*, *Fusarium culmarum* 2, T21 isolate against *Fusarium culmarum* 1 had been effective. It was understood that mutant *T. harzianum* isolates obtained from soil can be used in biological control studies. In this way, encourage the development of efficient product and reduction of harmful population can be provided.

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Determination of fruit characteristics, fatty acid profile and total antioxidant capacity of Istanbul Medlar Variety (*Mespilus germanica* L.)

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This research determined fruit characteristics, fatty acid profile and total antioxidant capacity of first cultured *Mespilus germanica* L. The oil extraction was using methanol:chloroform (1:2, v/v), as solvent. An extraction time of eight hours was chosen. With this aim, four extractions were carried out using 100 mL methanol:chloroform and 10 g of smallest particle size fruit. After extraction for 8 h, the extracts were evaporated by rotary vacuum

evapora evaporation (Laborota 4001, Germany) at 40 °C and the oil was methylated dissolved in 1 ml of hexane prior to injection into the gas chromatograph. Analysis of total antioxidant capacity was carried out in spectrophotometer (612 nm). In the chemical composition of oil the following fatty acids are found: palmitic acid, stearic acid, oleic acid and linoleic acid. As a result of the analysis, the total antioxidant capacity value of medlar fruit, 1.1 mmol trolox equiv./L.

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In vitro shoot multiplication of *Anagyris foetida* L.

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Bean trefoil (*Anagyris foetida* L.) is a legume with attractive yellow flowers. The leaves and bark of plant are used as folk medicine. *In vitro* propagation is an alternative way for the multiplication of medicinal plants. An *in vitro* protocol has been developed for shoot multiplication from nodal segment of bean trefoil. The explants were cultured on MS medium with 0.5 and 1.0 mg/l BAP. After four weeks, healthy shoots had developed on explant. The highest shoot number per explant (4 shoots) was obtained on MS medium including 1 mg/l BAP. Regenerated shoots were transferred to MS medium including IAA (0.5, 1.0 and 3.0 mg/l) with or without activated charcoal (0.5%) for rooting. Root formation was not observed in these media. To our knowledge this is the first report of *in vitro* propagation in *A. foetida*.

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Antimicrobial activity and phytochemical screening of the aerials parts (flower, leaf, seed) of *Genista numidica* ssp. *numidica*

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Phytochemical screening of *Genista numidica* ssp. *numidica*, endemic plant specie (the NE Algeria) showed a wealth in polyphenol compounds: flavonoids and saponins, alkaloids, terpenes and sterols. The tests were conducted on aerial parts (seeds, leaves and flowers). Cartography of the distribution area of the species and its ecological aspect were apprehended. The interest of this study is that this species remains until then unscreened. The results of Aromatogram, show significant antimicrobial activity of O3 extracts: infusion, saponins and flavonoids; the infusion is indeed much more active on *Staphylococcus*, such as saponins demonstrate activity on *Acinetobacter* when the flavonoids act on *Pseudomonas*. The raw extract has an important antifungal activity on *Candida albicans*. This could open opportunities for using this species in the treatment of urinary infections, and as a disinfecting additive on nosocomial area. It would be important to seek if antimicrobial