Detection of Resistant to Glyphosate Maize Transformation Events Ga21, Mon88017 and NK603 Among Ukrainian Market Samples. T. FEDORENKO 1,2, O. Markovskiy 1,2, O. Vlasova 1,2, M. Bannikova 1,2, M. Kuchak 1,2, and B. Murgan 1.

1National Technical University of Ukraine, 37 Peremogy Avenue, Kiev, 03056, UKRAINE and 2Institute of Cell Biology and Genetic Engineering, 148 Akademika Zabolotnogo Str., Kiev, 03680, UKRAINE. Email: maiidayuk_tanya@ukr.net

The number of genetically modified organisms (GMOs) has grown steadily over the past few years. Uncontrolled dissemination of transgenic organisms is a problem nowadays. According to this it is necessary to create reliable and specific systems for detection and monitoring of GMOs in Ukraine. The objects of our research were 210 samples of domestic maize from small markets. The aim was to detect accidentally摆在 in Ukraine transgenic forms of Zea mays such as GA21 (Syngenta Seeds), NK603 and MON88017 (Monsanto Company). These registered in the European Union transformation events impart to plants resistance to glyphosate, a widespread herbicidal agent. During the study total DNA was extracted from plantlets and purified from RNA by enzymatic hydrolysis. The DNA concentration was measured by spectrophotometry and normalized with TE buffer pH 8.0 up to 10 ng/μl. To control the quality of extracted DNA and its usefulness for further research the polymerase chain reactions (PCRs) for the presence of reference genes xitin and adh1 were carried out. All samples were positive on before-mentioned genes. Event-specific as well as gene-specific PCR was employed to detect transgenes. Amplified products were separated by electrophoresis in agarose gel. The GA21 presence was identified with primer pair GA21F and GA21R where the length of amplicon was 112 bp. Primer pair NK603F and NK603R (108-bp amplicon) was used for detection of NK603. The MON88017 presence was tested with primer pair MT88a vs. MT88 (amplicon is 313 bp). Well-defined DNA from transgenic lines GA21, NK603 and MON88017 served as positive controls. Reaction mix without template DNA was used as a negative control. Presence of NK603 and MON88017 positive signals has not been found in any samples. In contrast there have only been observed three GA21 positive samples. Thus, we observe weak unauthorized transgene flow from abroad and maintenance of live genetically modified maize in Ukraine.

P-2059

Influences of Different Medium Compositions and Cytokinins on Micropropagation of Fraser Photinia. D. GÜMÜŞEL, H. Akdemir, V. Sibzer, and Y. Ördem Çiftçi. Gebze Institute of Technology, Department of Molecular Biology and Genetics, 41400, Kocaeli, TURKEY. Email: gumusel@hotmail.com

Fraser photinia, is a woody ornamental plant that is widely used in the parks, gardens and roadsides with its remarkable red foliage and white flowers. Although photinia is able to grow rapidly, problems often occur on rooting of its cuttings that reduce its vegetative production. Thus, development of efficient micropropagation methods is important not only to overcome rooting difficulty problems but also to fasten its clonal production, and gene transferring studies. Therefore, four different medium compositions (MS, WPM, QL and DKW) were assessed by using binodal segments excised from in vitro-grown shoots of Fraser photinia together with different cytokinin types [BA (6-benzylaminopurine), TDZ (thidiazuron), KN (kinetin) and 2-IP (2-isopentenyl adenine)] supplemented with varying concentrations (1, 2, 4 mg l⁻¹) to each media. Our
results showed that relatively higher shoot proliferation (100% and 98%, respectively) was achieved on WP1 and QL media with supplementation of different amounts of cytokinins. Among tested cytokinins, the highest multiple shoot formation (2.22 shoots per explant) and longest shoots (5.04 mm) were obtained by supplementing relatively lower concentrations of BA, irrespective of the tested media. Shoots that were subcultured at least three times on proliferation medium were transferred to indole-3-butryic acid (IBA) containing medium and rooted successfully. The obtained results are expected to be used for rapid and effective propagation and conservation of Fraser photinia.

P-2060

Banana Micropropagation Using an Exclusive Temporary Immersion Bioreactor S. HESSAMI1 and A. Babaei1, 2Hessami Plant Tissue Culture Laboratory (HPTCL), Gha CH, Next to Golchin Int St, Shahrekna Naaz, Fardis, Karij 31796, IRAN and 2 Faculty of Agriculture, Tarbiat Modares University, PO Box: 14115-365, Tehran, IRAN. Email: sh.hessami@hptcl.com

Typical methods in plant micropropagation in comparison with new techniques are more expensive and time consuming. Therefore development of new methods for production of less expensive in vitro plants has steadily increased in recent years. In this study micropropagation of different cultivars of banana using an efficient and exclusive Temporary Immersion Bioreactor (TIB) has been carried out. In order to decrease the primary investment, application of disposable polyethylene terephthalate (PET)-based tank instead of glass tank is considered. As this kind of container is not autoclavable, an exclusive chemical sterilization has been applied. It does not require much time for preparing medium and transplanting of multiplied plantlets under aseptic condition. Therefore it does not need any special equipment such as autoclave. In addition the mentioned TIB system is light and easy transferrable. Using this bioreactor is a great step forward in lab automation and increase lab efficiency. A pilot of this TIB system has been setup for the commercial production of banana in multiplication and rooting phases in HPTC laboratory.

P-2061

Preliminary In Vitro Studies of Victoria and Nymphaea hybrids. N. H. HOANG and M. E. Kane. Environmental Horticulture Department, University of Florida, Bldg. 68, PO Box 110675, Gainesville, FL 32611-0675. Email: nhhoang@ufl.edu

Victoria and Nymphaea hybrids (Nymphaeaceae) are commercially important horticultural plants. We are seeking to develop propagation procedures to overcome difficulties encountered in clonal propagation. Sterile seedlings could serve as an explant source to optimize media components and culture conditions. The effectiveness of different procedures for in vitro culture establishment of Victoria cv. Longwood Hybrid and the tropical water lily hybrid Nymphaea Madame Ganna Walska were examined. For Victoria, a surface sterilization protocol and culture conditions have been established. Victoria seed were surface sterilized using a two-step process consisting of agitation in 3% sodium hypochlorite for 30 minutes after which zygotic embryos were excised and further surface sterilized in 0.6% sodium hypochlorite for 1 minute before being cultured in vitro. Cultures were indexed for contamination on Leifert and Waines sterility test media. Victoria plantlets only grow in MS medium supplemented with 2 mg/L BA. Seed sterilization of the tropical water lily hybrid Nymphaea Madame Ganna Walska resulted in very low germination and very high contamination rates. For culture establishment of this hybrid excised unfertilized and fertilized ovaries may provide a more reliable explant source for in vitro regeneration. To determine the optimal stage for ovule explantation, the time course of ovule and zygotic embryo development was examined using histological sectioning. Initiation of zygotic embryo development was observed within 6 days post-pollination and cotyledonary embryos present by day 10 post-pollination. Our preliminary results provide a step by step procedure which will allow further investigations on the in vitro culture of water lilies.

P-2062

Assessment of Genetic Stability of In Vitro Micrografted and Propagated Almond cv. Texas. V. SÜZERER1, H. Akdemir1, H. Yıldırım1, A. Onay2 and Y. Özden Çiğ21. Gebze Institute of Technology, Department of Molecular Biology and Genetics, 41400, Kocaeli, TURKEY; 2Dicle University, Faculty of Agriculture, Department of Horticulture, 21280 Diyarbakir, TURKEY; and 3Dicle University, Faculty of Science, Department of Biology, 21280 Diyarbakir, TURKEY. Email: beyso1983@gmail.com, vsuzerer@gyte.edu.tr

Almonds are members of the Rosaceae (rose) family, along with many other tree fruits such as peaches, apples, pears, plums, cherries, and apricots. Within the genus Prunus, almond is most closely related to the peach, and the two crops share the subgenus Amygdalus. "Texas" is one of the mostly used cultivar as pollinator for different almond cultivars (especially cv. Non-parul). As the species faces difficulty in rooting of its cuttings, development of in vitro micrografting protocols that do not cause extreme genetic instability in clones is essential to overcome this problem. Thus, successful micrografting technique was developed for "Texas" cultivar by using in vitro germinated seedlings,