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STUDY OF TRANSGENIC PLANTS FOR GROWTH IN THE CONDITIONS OF MARTIAN PLANET

Iman Yousefi Javan and Alipannah M

University of Torbat Heydarieh, Iran

When humans will settle on the moon or Mars they will have to eat there. The increase in the world population and the need to produce more agricultural products has led to new ideas and innovative initiatives. Among these innovations and efforts, there are changes and genetic changes in plants and food products. The use of biotechnology to produce transgenic products has created new opportunities for humans. We should design plants that can survive the harsh conditions on Mars. These plants could provide oxygen, fresh food, and even medicine to human while living off their waste. We tried to reconstruct artificially, the rough conditions of the planet Mars. Among the difficult conditions that are likely to stop plant growth there are as: inappropriate soil for plant growth, low levels of oxygen in the atmosphere, available quantity of carbon dioxide, low ultraviolet radiation, incorrect growth temperature, too much cold weather, the amount of gravity differs from the earth. All these should be designed and constructed transgenic plants, to overcome all problems. In this research, the genes involved for expression of traits to overcome the difficult conditions have been studied if these genes can be identified and then induced in a plant. The induced plant is a transgenic plant that can grow in the harsh conditions of the planet Mars Through the use of transgenics, one can produce plants with desired traits. Transgenic plant production will allow us to produce more desirable products. The genes studied included, AREB gene from *Crocus Sativus*, DAR4 and CRY1 gene from *Arabidopsis thaliana* and APX2 gene from *Glycine max*. Anyway, conditions on the red planet are different than on Earth. The surface receives less than half the amount of sunlight that Earth does, and dust in the atmosphere can attenuate it even more. Due to the absence of an ozone layer, more ultraviolet radiation reaches the ground.

Biography

Iman Yousefi Javan has completed his PhD from Tuscia University (University of Viterbo in Italy). His graduation is in Plant Biotechnology and he was the Winner of the Scholarship in Italy (in years 2009 & 2010). He is Head of Department and Assistant Professor of Torbat Heydarieh University in Iran (Department of Plant Production, Faculty of Agriculture), which is one of Iranian leading University. He has published more than 10 papers in reputed journals and has been serving as an Editorial Board Member of repute. He is Academic Staff in Torbat Heydarieh University from 2014). He has special interest in application of new methods in genetic plants resources; he is working about drawing genetic map in the Tetraploid wheat. He is Member of Iranian Agriculture and Natural Resources Engineering Organization (M.n. 1008506996); Food and Agriculture Organization (FAO) (M.n. CSCP); Iranian Science Agronomy and Plant Breeding Association (M.n.3502); International Society for horticultural science; Member of ABRII (Agriculture Biotechnology Research Institute of Iran).

I.Javan@torbath.ac.ir
Iman.Javan@yahoo.com