P35 – Micropropagation and optimization of SLSs production of *Crocus sativus* L. (Iridaceae) of Iran

Hosseinzadeh Namin M[1,2], Ebrahimzadeh H[1], Radjabian T[3]

[1] University of Tehran, College of Sciences, Tehran, Iran.
[2] Alzahra University, Faculty of Sciences, Department of Biology, Tehran, Iran.
[3] Shahed University, Faculty of Sciences, Department of Biology, Tehran, Iran.

Crocus sativus L. is a monocotyledonous and sterile plant. It is propagated by corms because it unable to produces seeds. Its dried stigmas (saffron) are a precious spice and nowadays it widely used in medicine as antitumor and anticancer because of having aromatic compounds which are carotenoids derivatives such as crocin, picrocrocin and safranal (1). Biotechnological tools such as tissue culture help us to micropropagate this sterile but valuable plant, because the world demand increases more than its production. An experiment was set up by using MS medium supplemented with combination of two hormones: cytokinine (2ip, BAP and kinetin) and auxin (NAA), the amount of each hormone was 10mg/L in three combinations with 30% sucrose and five different parts of immature flora bud of saffron (ovary, style, perianth, filament and stigma) as explants, in order to obtain the main source of saffron, SLSs (stigma-like structures) (2). The results showed that the combinations of BAP and NAA had higher production of SLSs than the others with red color appearance, 2ip with NAA showed less yield but long and dark red SLSs and kinetin with NAA gave more SLSs but pale red color through callus. The best of our knowledge the combination of 10 mg/L NAA with 10 mg/L BAP is the best hormone combination for micropropagation to obtain higher SLSs which is the main source of saffron to get valuable aromatic compounds.

Reference(s):
1. Fernandez JA (2004): Biology, biotechnology and biomedicine of saffron. *Recent Res Devel Plant Sci* 2:127-159.
2. Kafi M, Koocheki A, Rashed MH, Nassiri M (2009). *Saffron (Crocus sativus L.) production and processing*. Science publishers, New Hampshire. p 244.