In-vitro florigenesis: an efficient regeneration system escaping time consuming vegetative phase in Indian soybean cv., JS-335

Jadhav Pravin*, Department of Agricultural Botany, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India  
Kale Prashant, Department of Agricultural Botany, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India  
Kad Snehal, Department of Agricultural Botany, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India  
Moharil Mangesh, Department of Agricultural Botany, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India  
Dehmukh Amit, Nagarjuna Medicinal Garden, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India  
Nandanwar Ravindra, Department of Agricultural Botany, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India  
Mane Shyamsundar, Department of Plant Pathology, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India  
Dudhare Mahendra, Vasantrao Naik College of Agricultural Biotechnology, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India  
Varghese Philips, Genetics and Plant Breeding, Agharkar Research Institute, Maharashtra, India  
Manjaya Joy, Nuclear Agriculture and Biotechnology Division, BARC, Maharashtra, India  
Dani Raviprakash, Department of Agricultural Botany, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Maharashtra, India

The optimum conditions for in-vitro florigenesis has been established using cotyledonary node with axillary bud explant of soybean genotype cv., JS-335. Flower buds were directly induced from proximal end of the explant on Murashige-Skoog (MS) medium augmented with thidiazuron (TDZ) and naphthalenacetic acid (NAA). TDZ proves the potential growth regulator for in-vitro florigenesis. As results of self-fertilization, pods developed from generated flowers and matured within 40-45 days on hormone-free medium. Pods and seed set under in-vitro conditions resemble pods and seeds produced under in-vivo conditions. This pathway of in-vitro florigenesis showed great potential for successful induction of in-vitro flowering, which in turn can be explored in producing transgenic soybean seeds in popular Indian soybean genotype without escaping transgene.