

Transgenics and Cisgenics in Horticultural Crops

Kripa Shankar, S. Romen Singh, Md. Ramjan and Mohd Talha Ansari

*Department of Fruit Science, College of Horticulture and Forestry,
Central Agricultural University, Pasighat-791102, Arunachal Pradesh, India
E-mail: rawkripa.s99@gmail.com@gmail.com

Abstract—According to the need of Our growing population it is only way to full fill by single commodity through transgenics and cisgenics as Biofortification. Horticulture is one of the important sectors of agriculture, which consists of fruits, flowers, vegetables, spices, tuber crops, mushrooms, bamboo, plantation crops, and medicinal and aromatic plants. Transgenic crops, commonly referred to as genetically modified, contain a foreign gene or genes for desired traits, which have been artificially inserted into its genome. This enables breeders to bring favorable genes, creating novel phenotypes that are often previously not available, into already elite cultivars, improving their value considerably. Transgenics and cisgenics have revolutionized conventional plant breeding methods by providing new genotypes for breeding purposes, supplying healthy and disease-free planting material, improving fruit quality, enhancing shelf-life, increasing availability of biopesticides, biofertilizers, appears to be favorable for improving the sensory traits and shelf-life of melon fruit, transgenic cauliflower with β -carotene accumulation and produced oilseed Brassica rapa with increased histidine content, Virus-resistant plants, antibacterial proteins such as lytic peptides, lysozymes, and iron sequestering glycoproteins resistant to bacterial infections, Abiotic and Biotic stress resistant . etc. Recent advancements in molecular biology and genetic transformation encompass broad areas of biology from the utilization of living organisms or substances from those organisms to make or modify a product, to improving plants or developing microorganisms for specific uses.

Keywords: Biofortification, β -carotene, Cisgenics, Glycoproteins, lysozymes, Transgenics.