

Probationary Judges Questions

Colchicine, it is an alkaloid derivative of the autumn crocus *Colchicum autumnale*. Colchicine blocks spindle fiber formation, which results in a mitotic cell cycle that includes chromosome replication without cell division. After one such cycle, the cell will have twice as many chromosomes. For example, a diploid cell that normally has $2X = 10$ chromosomes will have $4X = 20$ chromosomes. About judging colchicine-treated plants. I think they must be judge as polyploids, which also can occur in nature.

Pollen culture, the pollen grain is a discrete single or few-celled structure which carries approximately one-half of the hereditary material per cell that is possessed by the plant which produced the pollen. With this technique, Haploids plants can be obtained from pollen grains by planting an anther or isolated pollen grains on a suitable culture medium. With Haploid plant, breeders have the possibility to create triploids. The superiority of these triploid and tetraploid hybrids is to be attributed to the fact that they are polyploids with additional chromosomes. (Randolph 1951). They must be judge considering their genetic condition.

Cell fusion or in the case of plant could be refer as Protoplast fusion, it is techniques to combine two plants cells protoplast.

Cell fusion or protoplast fusion offers a new means for creation of additional hybrids between widely divergent taxa normally genetically isolated by various incompatibility barriers (Price & Earle 1984). About judging, I think we should look back to the parent's sources of the cells to see if there are some improvement.

Virus transduction, with used of a virus that infected bacteria, called bacteriophage it is possible to transfer DNA from a donor cell to a recipient cell. This technique perhaps has been used for a Japanese researcher that introduced a foreign genetic sequence from a Blue mountain flower called *Commelina communis*. Since the researched should get an economical compensation and this technique are expensive, I do not sure If will be feasible to get such a genetic modified flower at the judge table. Color trait can get from a non-Orchid plant, so I do not think judging under the current AOS rules could be possible.

Sibling crossing of species, in a population of the same species are phenotypic variations hidden; crossing between members of the same species can unveil recessive homozygous alleles, some can be aesthetical pleasant and other maybe not. The significance to judging should be awarded the breeder improvement over the species population.

References

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