

Doubled Haploid Production in Crop Plants

A Manual


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Doubled Haploid Production In Crop Plants A Manual

**Zenu Jha, Satish B.
Verulkar, Suprasanna Penna**



Doubled Haploid Production In Crop Plants A Manual:

Doubled Haploid Production in Crop Plants M. Maluszynski, 2003-11-30 Includes various protocols and approaches of DH production proven for different germplasm of the same species *Advances in Haploid Production in Higher Plants* Alisher Touraev, Brian P. Forster, Shri Mohan Jain, 2008-12-18 The importance of haploids is well known to geneticists and plant breeders The discovery of anther derived haploid *Datura* plants in 1964 initiated great excitement in the plant breeding and genetics communities as it offered shortcuts in producing highly desirable homozygous plants Unfortunately the expected revolution was slow to materialise due to problems in extending methods to other species including genotypic dependence recalcitrance slow development of tissue culture technologies and a lack of knowledge of the underlying processes Recent years have witnessed great strides in the research and application of haploids in higher plants After a lull in activities drivers for the resurgence have been 1 development of effective tissue culture protocols 2 identification of genes controlling embryogenesis and 3 large scale and wide spread commercial up take in plant breeding and plant biotechnology arenas The first major international symposium on Haploids in Higher Plants took place in Guelph Canada in 1974 At that time there was much excitement about the potential benefits but in his opening address Sir Ralph Riley offered the following words of caution I believe that it is quite likely that haploid research will contribute cultivars to agriculture in several crops in the future However the more extreme claims of the enthusiasts for haploid breeding must be treated with proper caution Plant breeding is subject from time to time to sweeping claims from enthusiastic proponents of new procedures *Handbook of Plant Biotechnology* Paul Christou, Harry Klee, 2004 This reference work on plant biotechnology is presented in a logical and informative style and it brings together the principles and practice of contemporary plant biotechnology including modern commercial aspects **The Indian Journal of Genetics & Plant Breeding**, 2008 **Plant Breeding Reviews** Jules Janick, 2005-02-28 Plant Breeding Reviews presents state of the art reviews on plant genetics and the breeding of all types of crops by both traditional means and molecular methods Many of the crops widely grown today stem from a very narrow genetic base Understanding and preserving crop genetic resources is vital to the security of food systems worldwide **Acta Physiologiae Plantarum**, 1978 **Journey of a Single Cell to a Plant** S J Murch, Praveen K. Saxena, 2005 In plants the ability to regenerate identical individuals from single cells is the basis for modern agriculture These scientific advancements have given us virus free stocks novel germplasms clonal propagation systems and the commercial introduction of difficult to propagate plant species The timescale for breeding programs was dramatically reduced as plant tissue culture technologies were developed to shorten the time between generations and reduce the number of generations required for a line to be developed Without the capacity to regenerate plants it would not have been possible for plant biotechnology and genetic engineering to have advanced this far This book contains detailed reviews by the leading scientists who made these discoveries **Doubled Haploids: Technological Advances and Role In Crop Improvement** Zenu

Jha, Satish B. Verulkar, Suprasanna Penna, 2025-03-05 This contributed volume covers the technology of double haploid production with special reference to anther culture and double haploid production in crop plants and applications for basic and applied research in crop improvement Globally plant breeders aim to achieve higher crop productivity by using different breeding techniques The double haploid genotypes have made this monotonous work easier and more efficient to a greater extent by achieving homozygosity and genetic fixation Haploids are genotype with a gametophytic chromosome number and a double haploid is a genotype developed when haploid cells undergo chromosome doubling Artificial production of double haploids can easily shorten the time required to create homozygous plants which is vital in plant breeding The book discusses how double haploids can help in accelerating conventional plant breeding programs and make early release of cultivars with superior and desirable traits along with greater utility in other research aspects of plant breeding genetics and genetic engineering It also explains the role of double haploids in complementing back cross breeding by transferring genes of interest from wild relatives thus breaking genetic barriers The book highlights the role of double haploids in genetic studies like inheritance of quantitative traits quantitative trait loci QTL mapping Genomics gene identification whole genome mapping and production of stable transgenic plants This book is essential for plant breeders geneticists researchers and students in agricultural and crop sciences offering insights into the transformative potential of double haploid technology in modern plant breeding Proceedings of the VIth International Symposium on In Vitro Culture and Horticultural Breeding

Acram Taji, Prakash Lakshmanan, Robert Jason Geijskes, 2009 **Proceedings of Agriculture, Biotechnology & Sustainability Conference: Oral papers**, 2009 **Acta Agronomica Hungarica**, 2004 *Australian Journal of Agricultural Research*, 2005 **Advances in Applied Biology** M. Andrews, 2004 *Crop Science*, 2006 **Maydica**, 2006 Journal devoted to maize and allied species □□□□□, 2017 **Progress and Opportunities of Doubled Haploid Production** Muhammad Asif, 2013-07-17 Deals with the historical perspectives and the current status of doubled haploid production along with its practical implications in basic and applied research It highlights various haploid production methods with a comprehensive discussion on their pros and cons bottlenecks and embryogenic pathways The review also describes in detail the results of molecular and genomic studies conducted to investigate the underlying principles of this spectacular technique that has changed the status of many species from recalcitrant to responsive over the last ninety years **Who's who in America**, 2003 **The British National Bibliography** Arthur James Wells, 2004 **Annual Report** Scottish Crop Research Institute, 2004

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