

### MONOSOMY

- Endo TR & BS Gill. 1996. The deletion stocks of common wheat. 87: 295-307.
- Plewa MJ and DF Weber. 1973. The use of monosomics to detect genes conditioning lipid content in *Zea mays* L. embryos. Can. J. Genetic Cytol. 15: 313-320.

### TRISOMY

- Belling, J. and A.F. Blakeslee. 1924. The configurations and sizes of the chromosomes in the trivalents of 25-chromosome daturas. Proc. Natl. Acad. Sci. USA, 10:116-120. (Q11.N276)
- Bennett MD, RA Finch & IR Barclay. 1976. The time, rate and mechanism of chromosome elimination in *Hordeum* hybrids. Chromosoma, 54:175–200
- Blakeslee AF. 1921. The globe mutant in the Jimson weed (*Datura stramonium*). Genetics. 6(3):241–264.
- Blakeslee AF. 1922. Variations in *Datura* due to changes in chromosome number. The American Naturalist, 56(642): 16-31.
- Blakeslee AF and J Belling. 1924. Chromosomal mutations in the Jimson weed, *Datura stramonium*. J. Heredity. 15(5): 195-206.
- Cannell, M., A. Karp, P.G. Isaac, and P. Shewry. 1992. Chromosomal assignment of genes in barley using telosomic wheat-barley addition lines. Genome 35:17-23. (QH431.C21)
- Carlson, P.S. 1972. Locating genetic loci with aneuploids. Mol. Gen. Genet. 114:273-280. (QH301.Z3)
- Cheng, Z., H. Yan, H. Yu, S. Tang, J. Jiang, M. Gu, and L. Zhu. 2001. Development and applications of a complete set of rice telotrisomics. Genetics 157: 361-368.
- Chester M, JP Gallagher, VV Symonds, AV Cruz da Silva, EV Mavrodiev, AR Leitch, PS Soltis & DE Soltis. Extensive chromosomal variation in a recently formed natural allopolyploid species, *Tragopogon miscellus* (Asteraceae). PNAS 109(4): 1176 – 1181.
- Christensen HM and R Bamford. 1943. Haploids in twin seedlings of pepper. The Journal of Heredity. 34: 99-104.
- De Vries, J.N. 1985. Isolation of telotertiary compensating trisomics from telocentric translocation trisomics and telo-substituted translocation heterozygotes of rye (*Secale cereale* L.). Genetica 68:47-58. (QH301.G328)
- Frost HB & MM Lesley. 1954. High-double stock varieties: extra chromosome in trisomic stock responsible for higher ratio in production of double flowers. California Agriculture, 8(2): 11-12.

- Khush, G.S. and C.M. Rick. 1967. Tomato tertiary trisomics: Origin, identification, morphology and use in determining position of the centromeres and location of markers. *Can. J. Gen. Cytol.* 9:610-631.
- Lin, B.-Y. and E.H. Coe, Jr. 1986. Monosomy and trisomy induced by the r-x1 deletion in maize, and associated effects on endosperm development. *Can. J. Gen. Cytol.* 28:831-834.
- Sears, E.R. 1963. Chromosome mapping with the aid of telocentrics. p. 370-381. In: *Proc. Sec. Int. Wheat Gen. Symp*
- Sears, E.R. 1969. Wheat cytogenetics. *Ann. Rev. Gen.* 3:451-468. (QH431.A1A54)
- Singh K, T Ishii, A Parco, N Huang, DS Brar & GS Khush. 1996. Centromere mapping and orientation of the molecular linkage map of rice (*Oryza sativa* L.). *PNAS* 93: 6163-6168
- Ramage, R.T. 1965. Balanced tertiary trisomics for use in hybrid seed production. *Crop Sci.* 5:177-178. (SB183.C94)
- Sears, E.R. 1956. The transfer of leaf-rust resistance form *Aegilops umbellulata* to wheat. *Genetics in Plant Breeding Brookhaven Symposium #9*. (QH301.U5 no.9)
- Sears, E.R. 1983. Transferring an alien segment to an interstitial position in a wheat chromosome. p. 149-155. In: G.M. Reddy and E.H. Coe, Jr. (ed.) *Gene structure and function in higher plants*. Oxford & IBH Publishing Co., New Delhi, Bombay, Calcutta. (QK981.G43)
- Young, N.D., J.C. Miller, and S.D. Tanksley. 1987. Rapid chromosomal assignment of multiple genomic clones in tomato using primary trisomics. *Nucl. Acid Res.* 15:9339-9348. (QP620.N8)

## HAPLOIDY

- Ahmadli U, M Kalidas, LC Kahitova, J Fuchs, M Cuacos, D Demidov, S Zuo, J Pecinkova, M Mascher, M Ingouff, S Heckmann, A Houben, K Riha and I Lermontova. 2022. High temperature increases centromere-mediated genome elimination frequency and enhances haploid induction in *Arabidopsis*. *Plant Communications*, <https://doi.org/10.1016/j.xplc.2022.100507>
- Ambrus H, É Darkó, L Szabó, F. Bakos, Z Király, & B Barnabás. 2006 *In vitro* selection in maize anther culture with oxidative-stress stimulators. *Protoplasma*. 228: 87–94.
- Amundson KR, B Ordoñez, M Santayana, ML Nganga, IM Henry, M Bonierbale, A Khan, EH Tan & L Comai. 2021. Rare instances of haploid inducer DNA in potato dihaploids and ploidy-dependent genome instability. *The Plant Cell*, 33(7): 2149-2163.
- Amundson KR, B Ordoñez, M Santayan, EH Tan, IM Henry, E Mihovilovich, M Bonierbale & L Comai. 2020. Genomic outcomes of haploid induction crosses in potato (*Solanum tuberosum* L.). *Genetics*, 214: 369-380.

- Anonymous, 1936. A haploid Marglobe tomato - Practical application of a "Short cut" for making pure lines. *Journal of Heredity*. 27(11):433-435.
- Blakeslee AF, J Belling, ME Farnham, and AD Bergner. 1922. A haploid mutant in the Jimson weed, *Datura stramonium*. *Science*. 55:646-647.
- Britton DM and JW Hull. 1957. Mitotic instability in *Rubus*. *J. Heredity*. 48: 11-20.
- Chase SS. 1969. Monoploids and monoploid-derivatives of maize (*Zea mays* L). *Botanical Review* 35(2): 117-167.
- Christianson ML & MO Chiscon. 1978 Use of haploid plants as bioassay for mutagens. *Env. Health Perspect.* 27: 77–83.
- Clausen RE and MC Mann. 1924. Inheritance in *Nicotiana tabacum*. V. The occurrence of haploid plants in interspecific progenies. *PNAS* 10:121-124.
- Coe, E.H. 1959. A line of maize with high haploid frequency. *Am. Nat.* 93:381-382.
- Collins GN and JH Kempton. 1916. Patrogenesis: A form of inheritance with the characters of the female parent completely excluded. A cross between two genera of grasses, *Tripsacum* and *Euchlaena*. *Journal of Heredity* 7:106-118.
- Darkó É, H Ambrus, A Szenzenstein and B Barnabás. 2011. *In vitro* selection of microspores for resistance to oxidative stress resulted in chilling tolerance in doubled haploid maize lines. *Acta Agronomica Hungarica* 59 (3): 209-216.
- Das BK and M Rahimullah. 1933. Haploid plant in rice (*Oryza sativa*). *Current Sci.* Mar 1933 pp 277-278.
- Dermail, A, M Mitchell, T Foster, M Fakude, Yu-Ru Chen, K Suriharn, UK Frei & T Lübbertedt. 2024. Haploid identification in maize. *Frontiers in Plant Science*, 15: <https://doi.org/10.3389/fpls.2024.1378421>
- Dunwell, J.M. 2010. Haploids in flowering plants: origins and exploitation. *Plant Biotechnology Journal* 8:377-424.
- Dweikat IM and PM Lyrene. 1990. Twin seedlings and haploids in blueberry (*Vaccinium* spp.). *Journal of Heredity*. 81: 198-200.
- Ercolano MR, D Carputo, J Li, L Monti, A Barone, L Frusciante. 2004. Assessment of genetic variability of haploids extracted from tetraploid ( $2n = 4x = 48$ ) *Solanum tuberosum*. *Genome*. 47: 633-638.
- Gaines EF and HC Aase. 1926. A haploid wheat plant. *Amer J Bot* 13:373-385.
- Geiger, H.H. and G.A. Gordillo. 2009. Doubled haploids in maize breeding. *Maydica* 54:485-499.

- Giard A. 1903. Les faux hybrides de Millardet et leur interpretation. Comp. rend. Hebd. Séances et Mém de 1. Soc. de Biologie 15:779-782.
- Gilles LM, A Khaled, JB Laffaire, S Chaignon, G Gendrot, J Laplaige, H Bergès, G Beydon, V Bayle, P Barret, J Comadran, JP Martinant, PM Rogowsky, and T Widiez. 2017. Loss of pollen-specific phospholipase NOT LIKE DAD triggers gynogenesis in maize. EMBO J. 36(6): 707-717.
- Harland SC. 1920. A note on a peculiar type of rogue in Sea Island cotton. The Agricultural News. 19(463):29
- Harland SC. 1936. Haploids in polyembryonic seeds of Sea Island cotton. J Heredity 27:229-232.
- Harland SC. 1932. The Genetics of *Gossypium*. Bibliogr. Genetica. 9:107-182
- Hermesen, J.G.T. 1984. Haploids as a tool in breeding polyploids. Iowa St. J. Res. 58:449-460. (Q1.I641)
- Hermesen JGTh & J Verdenius. 1974. Selection from *Solanum tuberosum* group *phureja* of genotypes combining high-frequency haploid induction with homozygosity for embryo-spot. Euphytica 22: 244–259
- Ho KM & GE Jones. 1980. Mingo barley. Can J Plant Sci 60: 1-4.
- Ho, K.M. and K.J. Kasha. 1988. Genetic control of chromosome elimination during haploid formation in barley. Genetics. 81:263-275.
- Hooghvorst I & S Nogués. 2021. Chromosome doubling methods in doubled haploid and haploid inducer-mediated genome-editing systems in major crops. Plant Cell Reports 40(2): 255-270.
- Hougas RW & SJ Peloquin. 1958 The potential of potato haploids in breeding and genetic research. American Potato Journal, 35(10): 701–707.
- Hougas R, S Peloquin & A Gabert. 1964. Effect of seed parent and pollinator on frequency of haploids in *Solanum tuberosum*. Crop Science, 4: 593–595.
- Hsam SLK and FJ Zeller. Haploid production in durum wheat by the interaction of *Aegilops kotschy* cytoplasm and 1BL and 1RS chromosomal interchange. Theoretical & Applied Genetics 86:951-954.
- Huang Y, Y Liang, Y Xie, Y Rao, J Xiong, C Liu, C Wang, X Wang, Q Qian & K Wang. 2024. Efficient haploid induction via egg cell expression of dandelion PARTHENOGENESIS in foxtail millet (*Setaria italica*). Plant Biotechnology Journal, <https://doi.org/10.1111/pbi.14302>.
- Ishii T, R Karimi-Ashtiyani & A Houben. 2016. Haploidization via chromosome elimination: means and mechanisms. Annual Review of Plant Biology 67: 421-438.

- Jacquier NMA, LM Giles, DE Pyott, J-P Martinant, PM Rogowsky & T Widiez. 2020. Puzzling out plant reproduction by haploid induction for innovations in plant breeding. *Nature Plants* 6: 610-619.
- Jacquier NMA, ARM Calhau, Y Fierlej, J-P Martinant, PM Rogowsky, LM Gilles & T Widiez. 2023. In planta haploid induction by *kokopelli* mutants. *Plant Physiology*, 193: 182-185.
- Janksy SH, AO Charkowski, DS Douches, G Gusmimi, C Richael, PC Bethke, DM Spooner, RG Novy, H De Jong, WS De Jong, JB Bamberg, AL Thompson, B Bizimungu, DG Holm, CR Brown, KG Haynes, VR Sathuvalli, RE Veilleux, JC Miller, Jr., JM Bradeen, and JM Jiang. 2016. Re-inventing potato as a diploid inbred line-based crop. *Crop Science* 56: 1-11.
- Jauhar PP. 2007. Meiotic restitution in wheat polyhaploids (amphihaploids): a potent evolutionary force. *J Hered* 98:188-193.
- Jauhar PP, SS Xu and PS Baezinger. 2009. Haploidy in cultivated wheats: Induction and utility in basic and applied research. *Crop Sci* 49:737-755.
- Kasha, K.J. 1974. Haploids from somatic cells. p. 67-87. In: K.J. Kasha (ed.) *Haploids in Higher Plants, Advances and Potential*. University of Guelph, Guelph. (SB123.H25)
- Kasha, K.J. 2005. Chromosome doubling and recovery of doubled haploid plants. p 123–152. In: C.E.D. Palmer, W.A. Keller & K.J. Kasha (eds.) *Haploids in Crop Improvement II*. Springer.
- Katayama Y. 1934. Haploid formation by X-rays in *Triticum monococcum*. *Cytologia*. 5: 235-237.
- Kelliher T, D Starr, S Chintamanani, B Delzer, ML Nuccio, J Green, Z Chen, J McCuiston, W. Wang, T Liebler, P Bullock, and B. Martin. 2017. MATRILINEAL, a sperm-specific phospholipase, triggers maize haploid induction. *Nature*. 542 (7639): 105-109
- Kermicle JL. 1969. Androgenesis conditioned by a mutation in maize. *Science* 116: 1422-1424.
- Kermicle JL. 1971. Pleiotropic effects on seed development of the indeterminate gametophyte gene in maize. *American Journal of Botany* 58: 1-7.
- Kihara H. 1940. Formation of haploids by means of delayed pollination in *Triticum monococcum*. *Shokubutsugaku Zasshi*, 54(641): 178-185.
- Lin B-Y. 1978. Structural modifications of the female gametophyte associated with the indeterminate gametophyte mutant in maize. *Canadian Journal of Genetics and Cytology*, 20(2): 249–257.
- Mao Y, T Nakel, IE Serbes, S Joshi, DG Tekleyohans, T Baum & Rita Gross-Hardt. 2023. ECS1 and ECS2 suppress polyspermy and the formation of haploid plants by promoting double fertilization. *eLife*, <https://doi.org/10.7554/eLife.85832>.
- Magoon, M.L. and K.R. Khanna. 1963. Haploids. *Caryologia*, 16:191-235. (QH1.C25)
- Majka J, M Glombik, A Dolezalová, J Knerová, MT Mendes Ferreira, Z Zwierzykowski, M Duchoslav, B Studer, J Dolezel, J Bartos & D Kopecký. 2023. Both male and female meiosis

- contribute to non-Mendelian inheritance of parental chromosomes in interspecific plant hybrids (*Lolium* × *Festuca*). New Phytologist, <https://doi.org/10.1111/nph.18753>
- Maluszynski & Kasha (eds), 2002. Mutations, In Vitro & Molecular Techniques for Environmentally Sustainable Crop Production. Kluwer
- Mangelsdorf AJ and EM East. 1927. Studies on the genetics of *Fragaria*. Genetics. 12: 307-339
- Millardet MA. 1894. Note sur l'hybridation sans croisement ou fausse hybridation. Mém. Soc. d. Sciences phys. et inst. de Bordeaux, 4: 347-372.
- Montelongo-Escobedo H and RR Rowe. 1969. Haploid induction in potato: cytological basis for the pollinator effect. Euphytica, 18:116-123.
- Morrison G. 1932. The occurrence and use of haploid plants in tomato with especial reference to the variety Marglobe. Proc. VI International Congress of Genetics 2:137.
- Naess SK, HJ Swartz & GR Bauchan. 1998. Ploidy reduction in blackberry. Euphytica, 99:57-73.
- Peloquin SJ, AC Gabert & R Ortiz. 1996. Nature of 'pollinator' effect in potato (*Solanum tuberosum* L.) haploid production. Annals of Botany, 77: 539-542.
- Pohlheim E, F Pohlheim & G Günther. 1977. Mutagenicity testing of herbicides with a haploid *Pelargonium*. Mutation Research 46(3): 232.
- Quiroz LF, N Gondalia, G Brychkova, PC McKeown & C Spillane. 2024. Haploid rhapsody: the molecular and cellular orchestra of *in vivo* haploid induction in plants. New Phytologist <https://doi.org/10.1111/nph.19523>
- Raven, P.H. and H.J. Thompson. 1964. Haploidy and angiosperm evolution. Amer. Nat. 98:251-252. (QH1.A512)
- Ravi M and SWL Chan. 2010 Haploid plants produced by centromere-mediated genome elimination. Nature. 464:615-U180
- Subrahmanyam, N.C. and K.J. Kasha. 1973. Selective chromosomal elimination during haploid formation in barley following interspecific hybridization. Chromosoma, 42:111-125.
- Thompson MM. 1962. Cytogenetics of *Rubus*. III. Meiotic instability in some higher polyploids. Am J Bot 49:575-582.
- Tsunewaki, K. and Y. Mukai. 1990. Wheat haploids through the Salmon method. p. 460-478. In: Y.P.S. Bajaj (ed.) Biotechnology in Agriculture and Forestry, Vol. 13, Wheat. Springer-Verlag, Berlin New York. (N/A)
- Turcotte EL and CV Feaster. 1963. Haploids: High-frequency production from single-embryo seeds in a line of Pima cotton. Science, 140:1407–1408.
- Vanous K, A Vanous, UK Frei & T Lübberstedt. 2017. Generation of maize doubled haploids via traditional methods. Current Protocols in Plant Biology, 2: 147-157.

- Ye H, M Loudon & JAT Reinders. 2024. A novel in vivo genome editing doubled haploid system for *Zea mays* L. *Nature Plants*, 10: 1493-1501.
- Zhao X, X Xu, H Xie, S Chen, and W Jin. 2013. Fertilization and uniparental chromosome elimination during crosses with maize haploid inducers. *Plant Physiology* 163: 721-731.
- Zhong Y, B Chen, M Li, D Wang, Y Jiao, X Qi, M Wang, Z Liu, C Chen, Y Wang, M Chen, J Li, Z Xiao, D Cheng, W Liu, K Boutilier, C Liu & S Chen. 2020. A DMP-triggered in vivo maternal haploid induction system in the dicotyledonous arabidopsis. *Nature Plants*, 6(5): 466-472.

### TRIPLOIDY

- Belling, J. and A.F. Blakeslee. 1922. The assortment of chromosomes in triploid *Daturas*. *Amer. Nat.* 56:339-346. (QH1.A512)
- Mock KE, CM Callahan, M.N. Islam-Faridi, JD Shaw, HS Rai, SC Sanderson, CA Rowe, RJ Ryel, MD Madrich, RS Gardner & PG Wolf. 2012. Widespread triploidy in western North American aspen (*Populus tremuloides*). *PLOS One* 7(10): e48406
- Kihara, H. 1951. Triploid watermelons. *Amer. Soc. Hortic. Sci. Proc.* 58:217-230. (SB1.A5126)
- Satina S, Blakeslee A 1937. Chromosome behavior in triploids of . II. The female gametophyte. *Am J Bot* 24: 621–627

### GENERAL POLYPLOIDY

- Barker MS, N Arrigo, AE Baniaga, Z Li, & DA Levin. 2016. On the relative abundance of autopolyploids and allopolyploids. *New Phytologist*. 210(2): 391-398
- Barringer BC. 2007. Polyploidy and self-fertilization in flowering plants. *Am J Bot* 94:1527-1533.
- Burnham CR. 1962. *Discussions in Cytogenetics*, Burgess, Minneapolis, Minn (QH431.B966d)
- Castiglione MR and R Cremonini. 2012. A fascinating island:  $2n = 2$ . *Plant Biosystems* 146:711-726.
- Crow JF, 1994. Hitoshi Kihara, Japan's pioneer geneticist. *Genetics* 137: 891-894.
- Darlington CD. 1932. *Recent Advances in Cytology*. P. Blakiston's son & co., inc.
- Edger, P.P., Poorten, T.J., VanBuren, R. et al. 2019 Origin and evolution of the octoploid strawberry genome. *Nat Genet* 51, 541–547
- Gates RR. 1909. The stature and chromosomes of *Oenothera gigas* De Vries. *Zeitschrift für Induktive Abstammungs- und Vererbungslehre* 3: 525-552.
- Gerstel, D.V. 1963. Evolutionary problems in some polyploid crop plants. p. 481-504. In: J. Mac Kay (ed.) *Proceedings 2nd. Intl. Wheat Genetics Symp.* Lund. (N/A)



- Grant, V. 1981. Polyploidy: range and frequency. p. 283-297. In: Plant Speciation. Columbia University Press, New York. (QH368.5.G7)
- Harlan, J.R. and J.M.J. deWet. 1975. On Ö. Winge and a prayer: the origins of polyploidy. Bot. Rev. 41:361-390. (QK1.A512)
- Hermesen, J.G.T. 1984. Nature, evolution, and breeding of polyploids. Iowa St. J. Res. 58:411-420. (Q1.I641)
- Jackson, R.C. 1984. Chromosome pairing, hybrid sterility, and polyploidy: Comments on G.L. Stebbins reply. Syst. Bot. 9:121-123. (QK95.S97)
- Jackson, R.C. 1976. Evolution and systematic significance of polyploidy. Ann. Rev. Ecol. Syst. 7:209-234. (QH540.A53)
- Jenczewski, E. and K. Alix. 2004. From diploids to allopolyploids: The emergence of efficient pairing control genes in plants. Crit. Rev. Plant Sci. 23:21-45.
- Kihara H & T Ono 1926. Chromosomenzahlen und systematische gruppierung der *Rumex* arten. Zeitschr Zellf Mikrosk Anat. 4:475–481
- Leitch, I.J. and M.D. Bennett. 1997. Polyploidy in angiosperms. Trends Plant Sci 2:470-476.
- Lutz AM. 1907. A preliminary note on the chromosomes of *Oenothera lamarkiana* and one of its mutants, *O. gigas*. Science 26: 151-152.
- Mac Key, J. 1970. Significance of mating systems for chromosomes and gametes in polyploids. Hereditas 66:165-176. (QH431.H542)
- Masterson, J. 1994. Stomatal size in fossil plants: evidence for polyploidy in majority of angiosperms. Science 264:421-423. (Q1.S415)
- Ramsey, J. and D.W. Schemske. 1998. Pathways, mechanisms, and rates of polyploid formation in flowering plants. Annu. Rev. Ecol. Syst. 29:467-501.
- Ramsey, J. and D.W. Schemske. 2002. Neopolyploidy in flowering plants. Annu. Rev. Ecol. Syst. 33:589-639.
- Rice A, P Smarda, M Novosolov, M Drori, L Glick, N Sabath, S Meiri, J Belmaker, I Mayrose. 2019. The global biogeography of polyploid plants. Nature Ecology and Evolution. 3(2)265-273.
- Soltis, P.S. 2005. Ancient and recent polyploidy in angiosperms. New. Phytol. 166:5-8.
- Soltis DE, RJA Buggs, JJ Doyle & PS Soltis. 2010. What we still don't know about polyploidy. Taxon 59: 1387-1403.
- Soltis, D.E. and P.S. Soltis. 1993. Molecular data and the dynamic nature of polyploidy. Crit. Rev. Pl. Sci. 12:243-273. (QK1.C77)
- Soltis, D.E. P.S. Soltis, and J.A. Tate. 2003. Advances in the study of polyploidy since *Plant speciation*. New Phytologist 161:173-191.



- Stebbins GL 1950. Variation and Evolution in Plants (Columbia Univ. Press, New York).
- Stebbins GL 1971. Chromosomal Evolution in Higher Plants. Edward Arnold.
- Thompson, J.D. and R. Lumaret. 1992. The evolutionary dynamics of polyploid plants: Origins, establishment and persistence. TREE 7:302-307. (QH540.T73)
- Udall JA and JF Wendel. 2006. Polyploidy and crop improvement. Plant Genome (Crop Sci) 46(S1):S3-S14.
- Wendel, J.F. 2000. Genome evolution in polyploids. Plant Mol. Biol. 42:225-249.
- Winge, Ö. 1917. The chromosomes: Their number and general importance. Compt. Rend. Trav. Lab. Carlsberg 13, 131–275.

#### AUTOTETRAPLOIDY

- Bao Z, C Li, G Li, P Wang, Z Peng, L Cheng, H Li, Z Zhang, Y Li, W Huang, M Ye, D Dong, Z Cheng, P Vander Zaag, E Jacobsen, CWB Bachem, S Dong, C Zhang, S Huang & Q Zhou. 2022. Genome architecture and tetrasomic inheritance of autotetraploid potato. Molecular Plant, 15(7): 1211-1226.
- Barone, A., Li, J., Sebastiano, A., Cardi, T., & Frusciante, L. (2002). Evidence for tetrasomic inheritance in a tetraploid *Solanum commersonii* (+) *S. tuberosum* somatic hybrid through the use of molecular markers. Theoretical and Applied Genetics, 104(4), 539-546.
- Bingham ET, RW Goose, DR Woodfield & KK Kidwell. 1994. Complementary gene interactions in alfalfa are greater in autotetraploids than diploids. Crop Science 34: 823-829.
- Busbice TH & CP Wilsie. 1966. Inbreeding depression and heterosis in autotetraploids with application to *Medicago sativa*. Euphytica. 15: 52-67
- Blakeslee, Belling, & Farnham, 1923. Inheritance in tetraploid Daturas. Bot. Gaz. 76: 329-373.
- Chase, S.S. 1962. Analytical breeding of polyploid varieties. Agron. Abstr. 1962:63.
- Chase, S.S. 1963. Analytical breeding in *Solanum tuberosum* L.—a scheme utilizing parthenotes and other diploid stocks. Canadian J. Genet. Cytol. 5:359–363
- Clausen J, DD Keck, WM Hiesey. 1945. II. Plant evolution through amphiploidy and autoploidy, with examples from the *Madiinae*. Washington, DC, USA: Carnegie Institution of Washington.
- De Vries H. 1900. Sur l'origine expérimentale d'une nouvelle espèce végétale. Comptes rendus hebdomadaires des séances de l'Académie des sciences, 131: 124.
- den Nijs, T.P.M. and S.J. Peloquin. 1977. Polyploid evolution via 2n gametes. Am. Potato J. 54:377-386. (SB211.P8A5)

- Dorone Y. 2013. Diploidization of meiosis in autotetraploids. Ecole Normale Supérieure de Lyon Biosciences Master Reviews
- Doyle JJ & JE Coate. 2019. Polyploidy, the nucleotype, and novelty: the impact of genome doubling on the biology of the cell. *International Journal of Plant Science* 180(1): 1-52.
- Eskilsson, L. 1963. A method for estimating pollen quality in autopolyploid plants. *Hereditas* 49:185-188.
- Gilles A & LF Randolph. 1951. Reduction of quadrivalent frequency in autotetraploid maize during a period of ten years. *American Journal of Botany* 38(1): 12-17
- Haldane, J.B.S. 1929. Theoretical genetics of autopolyploids. *J. Gen.* 22:359-372.
- Hazarika M. & H Rees. 1967. Genotypic control of chromosome behaviour in rye X. Chromosome pairing and fertility in autotetraploids. *Heredity* 22: 317–332. <https://doi.org/10.1038/hdy.1967.44>
- Hollister JD, BJ Arnold, E Svedin, KS Xue, BP Dilkes & K Bomblies. 2012. Genetic adaptation associated with genome-doubling in autotetraploid *Arabidopsis arenosa*. *PLoS Genetics* 8(12): e1003093
- Hossain, M.G. and K. Moore. 1975. Selection in tetraploid rye. I. Effects of selection on the relationships between seed-set, meiotic regularity and plant vigour. *Hereditas* 81:141-152.
- Jackson, R.C. 1982. Polyploidy and diploidy: new perspectives on chromosome pairing and its evolutionary implications. *Am. J. Bot.* 69:1512-1523. (QK1.A512)
- Lavania, U.C. 1991. Polyploid breeding: Meiosis in the diploid progenitor and its predictive value for fertility in the autotetraploid. *Proc. Indian Natn. Sci. Acad.* B57:17-24. (Q73.N3)
- Lloyd A & K Bomblies. 2016. Meiosis in autopolyploid and allopolyploid *Arabidopsis*. *Current Opinion in Plant Biology*, 30: 116-122
- Mather, K. 1935. Reductional and equational separation of the chromosomes in bivalents and multivalents. *J. Gen.* 30:53-78. (QH301.J862)
- Mendiburu, A.O. and S.J. Peloquin. 1976. Sexual polyploidization and depolyploidization: some terminology and definitions. *Theor. Appl. Genet.* 48:137-143. (SB123.Z8)
- Morgan C, MA White, FCH Franklin, D Zickler, N Kleckner & K Bomblies. 2021. Evolution of crossover interference enables stable autopolyploidy by ensuring pairwise partner connections in *Arabidopsis arenosa*. *Current Biology*, 31(21): 4713-4726.e6
- Müntzing A. 1932. Cytogenetic investigations on synthetic *Galeopsis tetrahit*. *Hereditas* 16:105-154
- Pelé A, M Rousseau-Gueutin & A-M Chèvre. 2018. Speciation success of polyploid plants closely relates to the regulation of meiotic recombination. *Frontiers in Plant Science*, 9: 907

- Randolph, 1941. An evaluation of induced polyploidy as a method of breeding crop plants. *Am Naturalist* 75:347-363
- Rivera-Guerra AO. 2008. Cytogenetics, geographical distribution, and pollen fertility of diploid and tetraploid cytotypes of *Santolina pectinata* Lag. (Asteraceae: Anthemideae). *Botanical Journal of the Linnean Society*, 156(4): 657-667.
- Stebbins GL. 1971 . Chromosomal evolution in higher plants. Edward Arnold, London, UK.
- Stift M, C Berenos, P Kuperus & PH van Tienderen. 2008. Segregation models for disomic, tetrasomic and intermediate inheritance in tetraploids: A general procedure applied to rorippa (yellow cress) microsatellite data. *Genetics* 179: 2113–2123
- Yant L, JD Hollister, KM Wright, BJ Arnold, JD Higgins, F Chris H Franklin & K Bomblies. 2013. Meiotic adaptation to genome duplication in *Arabidopsis arenosa*. *Current Biology* 23: 2151-6
- Winkler, H. 1917. Über die experimentelle Erzeugung von Pflanzen mit abweichenden Chromosomenzahlen. (About the experimental generation of plants with different chromosome numbers) *Z. Bot.* 8, 417–531.

#### ALLOPOLYPLOIDY

- Abel S, C Möllers and HC Becker. 2005. Development of synthetic *Brassica napus* lines for the analysis of “fixed heterosis” in allopolyploid plants. *Euphytica* 146-163.
- Ahmed D, F Curk, JC Evrard, Y Froelicher & P Ollitrault. 2020. Preferential disomic segregation and *C. micrantha/C. medica* interspecific recombination in tetraploid ‘Giant Key’ lime; outlook for triploid lime breeding. *Frontiers in Plant Science*, 11: 309. doi.org/10.3389/fpls.2020.00939
- Birchler JA & H Yan. 2022. The multiple fates of gene duplications: Deletion, hypofunctionalization, subfunctionalization, neofunctionalization, dosage balance constraints, and neutral variation. *The Plant Cell*, 34(7): 2466-2474.
- Bird KA, R VanBuren, JR Puzey, and PP Edger. 2018. The causes and consequences of subgenome dominance in hybrids and recent polyploids. *New Phytologist*, 220: 87-93/
- Brysting, A.K., A Holst-Jensen, and I. Leitch. 2000. Genomic origin and organization of the hybrid *Poa jemtlandica* (Poaceae) verified by the genomic *in situ* hybridization and chloroplast DNA sequences. *Ann. Bot.* 85:439-445.
- Chase SS. 1964. Analytic breeding of amphiploidy plant varieties. *Crop Science* 4: 334-337
- Chen F, J Wu, X Cai, J Liang, M Freeling, and X Wang. 2018. Gene retention, fractionation and subgenome differences in polyploid plants. *Nature Plants* 4: 258–268

- Chen, Z.J., L. Comai, and C.S. Pikaard. 1998. Gene dosage and stochastic effects determine the severity and direction of uniparental RNA gene silencing (nucleolar dominance) in *Arabidopsis* allopolyploids. PNAS 95:14891-14896.
- Cheng M, H Zhang, Y Zhang, X Tang, Z Wang, X Zhang, X Song, X Li, H Cui, T Wang, R Song, J Xiao, H Wang, & X Wang. 2024. Cytological mapping of a powdery mildew resistance locus *PmRc1* based on wheat-*Roegneria ciliaris* structural rearrangement library. Theoretical and Applied Genetics, 137: 276. doi.org/10.1007/s00122-024-04768-w
- Comai, L., A. Madlung, C. Josefsson, and A. Tyagi. 2003. Do the different parental 'heteromes' cause genomic shock in newly formed allopolyploids? Philosophical Transactions of the Royal Society of London B358: 1149-1155.
- Comai, L., A.P. Tyagi, K. Winter, R. Holmes-Davis, S.H. Reynolds, Y. Stevens, and Breck Byers. 2000. Phenotypic instability and rapid gene silencing in newly formed arabidopsis allotetraploids. Plant Cell 12:1551-1567.
- Gaut, B.S. and J.F. Doebley. 1997. DNA sequence evidence for the segmental allotetraploid origin of maize. Proc. Natl. Acad. Sci. USA, 94:6809-6814. (Q11.N276)
- Goodspeed TH and RE Clausen. 1927. Interspecific hybridization in *Nicotiana*. VI. Cytological features of *sylvestris-tabacum* hybrids. Univ Calif Publ Bot 11:127-140.
- Goodspeed TH and RE Clausen. 1928. Interspecific hybridization in *Nicotiana*. VIII. The *sylvestris-tomentosa-tabacum* hybrid triangle and its bearing on the origin of *tabacum*. Univ Calif Publ Bot 11:245-256.
- Guénéguou M, J Citharel & J Levasseur. 1988. The hybrid status of *Spartina anglica* (Poaceae). Enzymatic analysis of the species and of the presumed parents. Canadian Journal of Botany 66: 1830-1833. doi: 10.1139/b88-249
- Ising G. 1966. Cytogenetic studies in *Cyrtanthus* I. Segregation in an allotetraploid. Hereditas, 56: 27-53.
- Jenczewski E & K Alix. 2004. From diploids to allopolyploids: The emergence of efficient pairing control genes in plants. Crit. Rev. Plant Sci. 23:21-45.
- Kochert, G.D., H.T. Stalker, M. Gimenes, L. Galgaro, C.R. Lopes, and K. Moore. 1996. RFLP and cytogenetic evidence on the origin and evolution of allotetraploid domesticated peanut, *Arachis hypogaea* (Leguminosae). Am. J. Bot. 83:1283-1291.
- Kajla A, A Schoen, C Paulson, IS Yadav, K Neelam, O Riera-Lizarazu, J Leonard, BS Gill, P Venglat, R Datla, J Poland, G Coleman, N Rawat & V Tiwari. 2023. Physical mapping of the wheat genes in low-recombination regions: radiation hybrid mapping of the C-locus. Theoretical & Applied Genetics 136: 159 doi.org/10.1007/s00122-023-04403-0
- Kotseruba, V., D. Gernand, A. Meister, and A. Houben. 2003. Uniparental loss of ribosomal DNA in the allotetraploid grass *Zingieria trichopoda* (2n = 8). Genome. 46:156-163.

- Levy M & DA Levin. 1971. The origin of novel flavonoids in *Phlox* allotetraploids. PNAS, 68: 1627-1630
- Li F, G Fan, C Lu, G Xiao, C Zou, RJ Kohel, Z Ma, H Shang, X Ma, J Wu, X Liang, G Huang, RG Percy, K Liu, W Yang, W Chen, X Du, C Shi, Y Yuan, W Ye, X Liu, X Zhang, W Liu, H Wei, S Wei, G Huang, X Zhang, S Zhu, H Zhang, F Sun, X Wang, J Liang, J Wang, Q He, L Huang, J Wang, J Cui, G Song, K Wang, X Xu, JZ Yu, Y Zhu & S Yu. 2015. Genome sequence of cultivated Upland cotton (*Gossypium hirsutum* TM-1) provides insights into genome evolution. Nature Biotechnology, 33: 524–530. doi.org/10.1038/nbt.3208
- Linares, C., E. Ferrer, and A. Fominaya. 1998. Discrimination of the closely related A and D genomes of the hexaploid oat *Avena sativa* L. Proc. Natl. Acad. Sci. USA, 95:12450-12455. (Q11.N276)
- Morgan, W.G. 1991. The morphology and cytology of monosomic addition lines combining single *Festuca drymeja* chromosomes and *Lolium multiflorum*. Euphytica, (SB123.E89)
- Moringa T and T Fukushima. 1933. Karyological studies on a spontaneous haploid mutant of *Brassica napella*. Cytologia 4(4):339-460
- Osborn, T.C. 2004. The contribution of polyploidy to variation in *Brassica* species. Physiologia Plantarum 121: 531-536.
- Ozcan, H., A.A. Levy, and M. Feldman. 2001. Allopolyploidy-induced rapid genome evolution in the wheat (*Aegilops-Triticum*) group. Plant Cell 13:1735-1747.
- Pašakinskienė, I., K. Ananthawat-Jónsson, M.W. Humphreys, and R.N. Jones. 1997. Novel diploids following chromosome elimination and somatic recombination in *Lolium multiflorum* x *Festuca arundinacea* hybrids. Heredity. 78:464-469. (QH301.H542)
- Pelé A, M Rousseau-Gueutin & A-M Chèvre. 2018. Speciation success of polyploid plants closely relates to the regulation of meiotic recombination. Frontiers in Plant Science. 9: article 909.
- Richards DM, Greer E, Martin AC, Moore G, Shaw PJ, et al. (2012) Quantitative dynamics of telomere bouquet formation. PLOS Computational Biology 8(12): e1002812. doi: 10.1371/journal.pcbi.1002812
- Rose ML & LD Gottlieb. 1976. Genetic and biochemical consequences of polyploidy in *Tragopogon*. Evolution, 30(4): 818-830.
- Scalabrin S, G Magris, M Liva, N Vitulo, M Vidotto, D Scaglione, L del Terra, MR Ruosi, L Navarini, G Pellegrino, JCB Mier y Teran, L Toniutti, FS Liverani, M Cerutti, G Di Gaspero & M Morgante. 2024. A chromosome-scale assembly reveals chromosomal aberrations and exchanges generating genetic diversity in *Coffea arabica* germplasm. Nature Communications 15:463 <https://doi.org/10.1038/s41467-023-44449-8>
- Schnable, J.C., N.M. Springer and M. Freeling. 2011. Differentiation of the maize subgenomes by genome dominance and both ancient and ongoing gene loss. PNAS, 108:4069-4074.

- Sears, E.R. 1977. An induced mutant with homoeologous pairing in common wheat. *Can. J. Gen. Cytol.* 19:585. (QH431.C21)
- Shimizu-Inatsugi R, A Terada, K Hirose, H Kudoh, J Sese & KK Shimizu. 2017. Plant adaptive radiation mediated by polyploid plasticity in transcriptomes. *Molecular Ecology*, 26(1): 193-207.
- Sieleman K, N Schmidt, J Guzik, N Kalina, B Pucker, P Viehöver. S Bretenbach, B Weisshaar, T Heitkam & D Holtäwe. 2023. Pangenome of cultivated beet and crop wild relatives reveals parental relationships of a tetraploid wild beet. *bioRxiv* 2023.06.28.546919.
- Stadler LJ. 1929. Chromosome number and the mutation rate in *Avena* and *Triticum*. *Proc. Nat. Acad. Sci.*, 15:876-881.
- Tayalé A & C. Parisod. 2013. Natural pathways to polyploidy in plants and consequences for genome reorganization. *Cytogenetics & Genome Research*. 40: 79-96
- U, N. 1935. Genomic relationships in *Brassica*. *Jpn. J. Bot.* 7:389-452
- Wendel, J.F. 2000. Genome evolution in polyploids. *Plant Mol. Biol.* 42:225-249.
- Zhao M, B Zhang, D Lisch and J Ma. 2017. Patterns and consequences of subgenome differentiation provide insights into the nature of paleoploidy in plants. *Plant Cell*, 29: 2974-2994.

#### WHEAT CYTOGENETICS

- Berke, T.G., S.P. Baenzinger, and R. Morris. 1992. Chromosomal location of wheat quantitative trait loci affecting agronomic performance of seven traits, using reciprocal chromosome substitutions. *Crop Sci.* 32:621-627. (SB183.C94)
- Dvořák, J. and H.-B. Zhang. 1990. Variation in repeated nucleotide sequences sheds light on the phylogeny of the wheat B and G genomes. *Proc. Natl. Acad. Sci. USA*, 87:9640-9644. (Q11.N276)
- Friebe, B., J.H. Hatchett, B.S. Gill, Y. Mukai, and E.E. Sebesta. 1991. Transfer of Hessian fly resistance from rye to wheat via radiation-induced terminal and intercalary chromosomal translocations. *Theor. Appl. Genet.* 83:33-40. (SB123.Z8)
- Gao L, D-H Koo, P Juliana, T Rife, D Singh, C Lemes da Silva, T Lux, KM Dorn, M Clinesmith, P Silva, X Wang, M Spannagl, C Monat, B Friebe, B Suerunagel, GJ Muehlbauer, S Wakowiak, C Pozniak, R Singh, N Stein, M Mascher, A Fritz & Jesse Poland. 2021. The *Aegilops ventricosa* 2NvS segment in bread wheat: cytology, genomics and breeding. *Theoretical & Applied Genetics*, 134: 529-542.
- Greer E, AC Martin, A Pendle, I Colas, AME Jones, G Moore and P Shaw. 2012. The *Ph1* locus suppresses Cdk2-type activity during premeiosis and meiosis in wheat. *Plant Cell* 24:152-162.

- Griffiths S et al. 2006. Molecular characterization of Ph1 as a major chromosome pairing locus in polyploid wheat. *Nature* 439: 749–752.
- Jones et al. 1995. Use of alien genes for the development of disease resistance in wheat. *Ann Rev Phytopath*, 33:429-443
- Liu, B., J.M. Vega, G. Segal, S. Abbo, M. Rodova, and M. Feldman. 1998. Rapid genomic changes in newly synthesized amphidiploids of *Triticum* and *Aegilops*. I. Changes in the low-copy noncoding DNA sequences. *Genome*, 41:272-277. (QH431.C21)
- Ma, X.-F., P. Fang, and J.P. Gustafson. 2004. Polyploidization-induced genome variation in triticale. *Genome* 47: 839-848.
- Martinez-Perez E, P Shaw, L Aragon-Alcaide and G Moore. 2003. Chromosomes form into seven groups in hexaploid and tetraploid wheat as a prelude to meiosis. *Plant J* 36:21-29.
- Mirzaghaderi G & AS Mason. 2017. Revisiting pivotal-differential genome evolution in wheat. *Trends in Plant Science*. 22: 674-684
- Moore, G. 2014. The recombination in wheat by Ph1 and its use in breeding. *Methods in Molecular Biology*, 1145: 143-153
- Ozcan, H., A.A. Levy, and M. Feldman. 2001. Allopolyploidy-induced rapid genome evolution in the wheat (*Aegilops-Triticum*) group. *Plant Cell* 13:1735-1747.
- Sears, E.R. 1977. An induced mutant with homoeologous pairing in common wheat. *Can. J. Gen. Cytol.* 19:585. (QH431.C21)
- Zhang H, Y Bian, X Gou, Y Dong, S Rustgi, B Zhang, C Xu, N Li, B Qi, F Han, D von Wettstein & B. Liu. 2013. Intrinsic karyotype stability and gene copy number variations may have laid the foundation for tetraploid wheat formation. *PNAS* 110(48): 19466-19471.
- Zhao X, Y Guo, L Kang, C Yin, A Bi, D Xu, Z Zhang, J Zhang, X Yang, J Xu, S Xu, X Song, M Zhang, Y Li, P Kear, J Wang, Z Liu, X Fu & F Lu. 2023. Population genomics unravels the Holocene history of bread wheat and its relatives. *Nature Plants* 9: 403-419.