***PolyPloidy***

***Basic Chromosome Number (Genome)***

*The haploid chromosome number of the specie from which the existing species has evolved.Change in chromosome number is always measured in reference to basic chromosome number or haploid chromosome number*

*The* genome is the basic *monoploid* set of chromosomes for the species (or group of related species) and contains only one of each kind of chromosome.

The monoploid or basic chromosome number for a species is designated by the symbol **X,**

The *haploid* or gametic chromosome number for a species is designated by the symbol ***n*,**

The diploid or *somatic* chromosome number for a species is designated by the symbol **2*n*.**

For example, in corn, the basic and haploid number is 10, and the diploid and somatic number is 20. The haploid number is written *n* = *x* = 10, and the diploid or somatic number is written 2*n* = 2*x* = 20. In cultivated wheat, the basic chromosome number is 7, the haploid number is 21,(*n=3x=21*) and the somatic number is 42; the latter is written as 2*n* = 6*x* = 42.

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | *Gossypium arboreum* |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 13 |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 13 |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 2*n* = 2*x* = 26 |  | |  | | | |  | | | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | *Gossypium hirsutum* |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 26 |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 13 |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 2*n* = 4*x* = 52 |  | |  | | | |  | | | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | *Triticum monococcum* |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 7 |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 7 |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 2*n* = 2*x* = 14 |  | |  | | | |  | | | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | *Triticum turgidum* |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 14 |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 7 |  | |  | | | |  | | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | | |  | |  | | | |  | 2*n* = 4*x* = 28 |  | |  | | | |  | | | |
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|  |  | **POLYPLOIDY** |  |  |
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|  | *Polyploids are* euploids in which the somatic cells possess multiples of complete basic chromosome sets (*x*) in excess of the diploid number. Polyploids and the number of basic chromosome sets, or genomes, in each are |  |
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|  | Euploid plants may arise by duplication of genomes of a single species, *autoploidy* or *autopolyploidy* (auto = same), or by combining genomes from two or more unrelated species, *alloploidy* or *allopolyploidy* (allo = different). An alloploid derived from combining chromosome sets from two different diploid species is called an *allotetraploid* or *amphidiploid*. An autoploid created by duplicating the chromosomes of a diploid species is called an *autotetraploid*. |  |