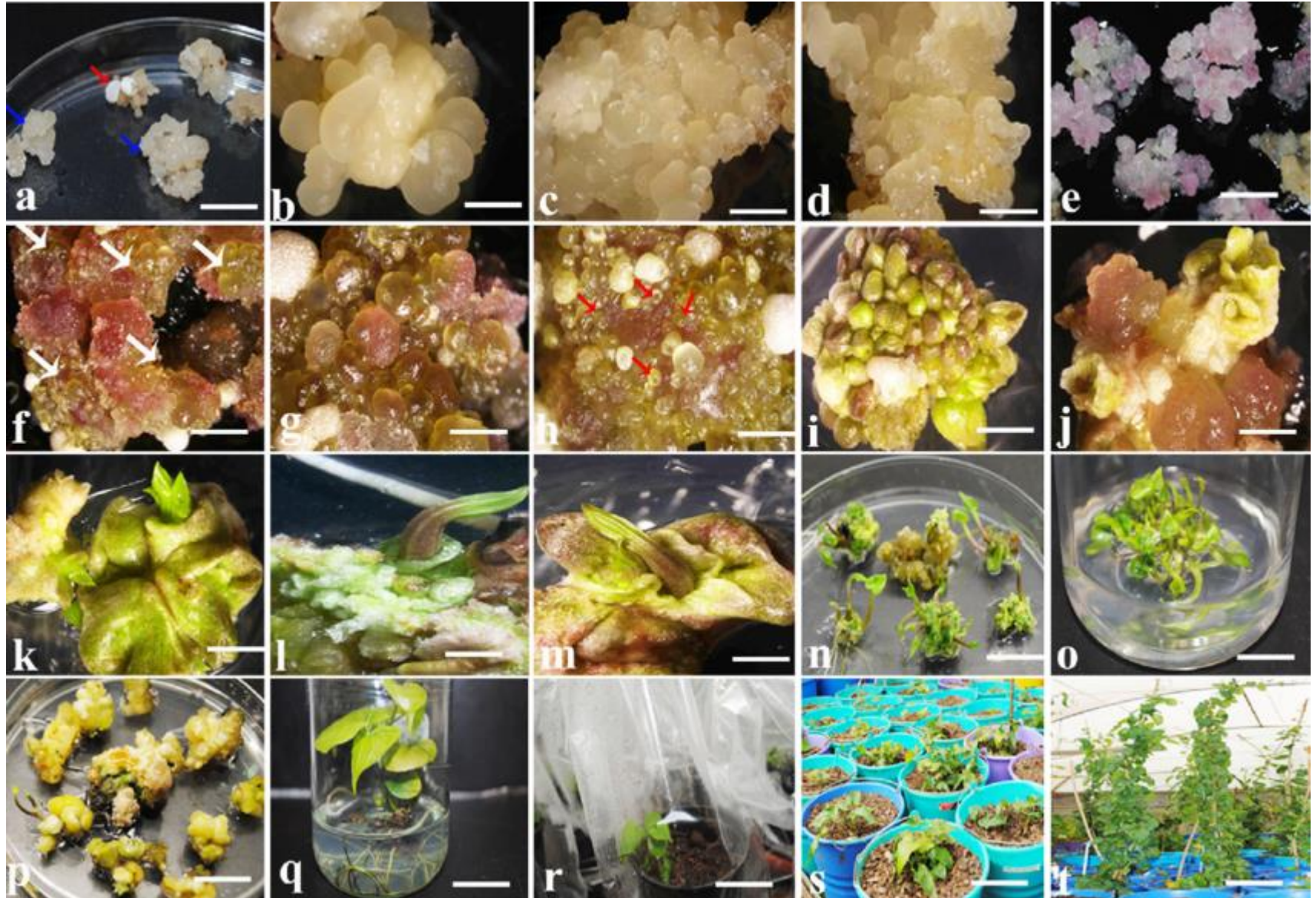


Plant Developmental Biology

Whole plants can even be regenerated from a single cell



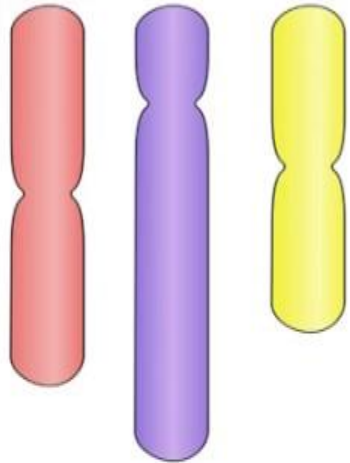
Plants may tolerate higher genetic loads than animals. Plant genomes can carry a much greater load of mutations than animals before the phenotype is affected. For example, half of the maize (corn) genome appears to be made up of foreign DNA. Most of it resemble retroviruses. The maize plant appears to function quite well with all of this “hitchhiking” DNA.

When plants are polyploid, the consequences can be adaptive.

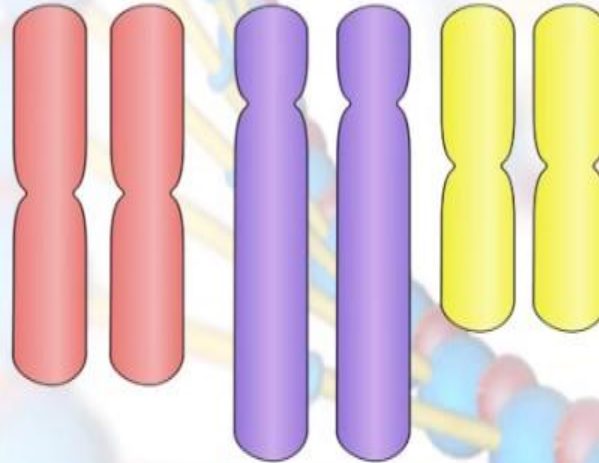
Many flowers found in the florist shop and the wheat used for bread flour are examples of successful polyploids (Wheat is hexaploid).

TYPES OF POLYPLOIDY

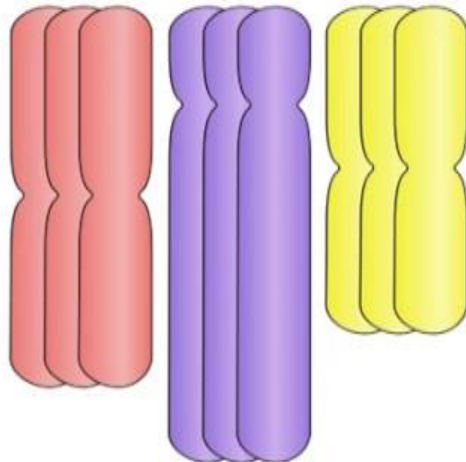
Haploid (N)



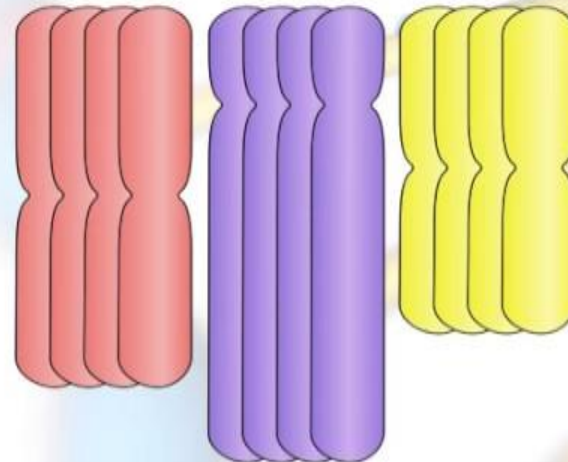
Diploid (2N)



Triploid (3N)



Tetraploid (4N)



Polyploidy

- Horticultural important plants are forced to polyploidy to increase the size and flavor of flowers and fruits and overall vigor of the plants.
- Polyploidy is uncommon in animals.



normal polyploidy



Animals also have a significant amount of foreign DNA, but polyploidy can be developmentally harmful to them.

Despite these major differences among many plants and animals, developmental genetic studies demonstrate some commonalities between them.