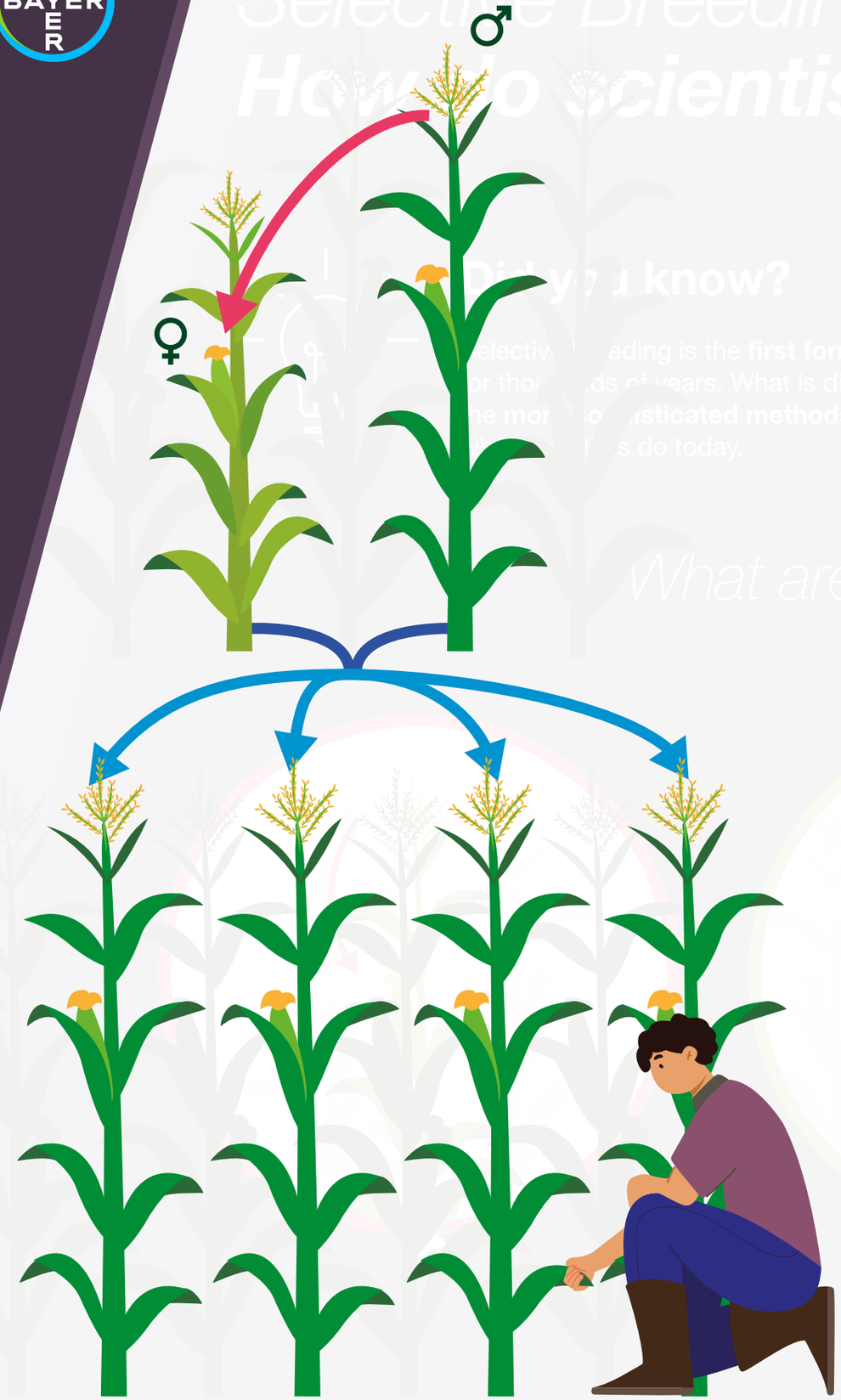
Selective Breeding:

How do scientists do what they do?



Hover for more information

Hybrid lines

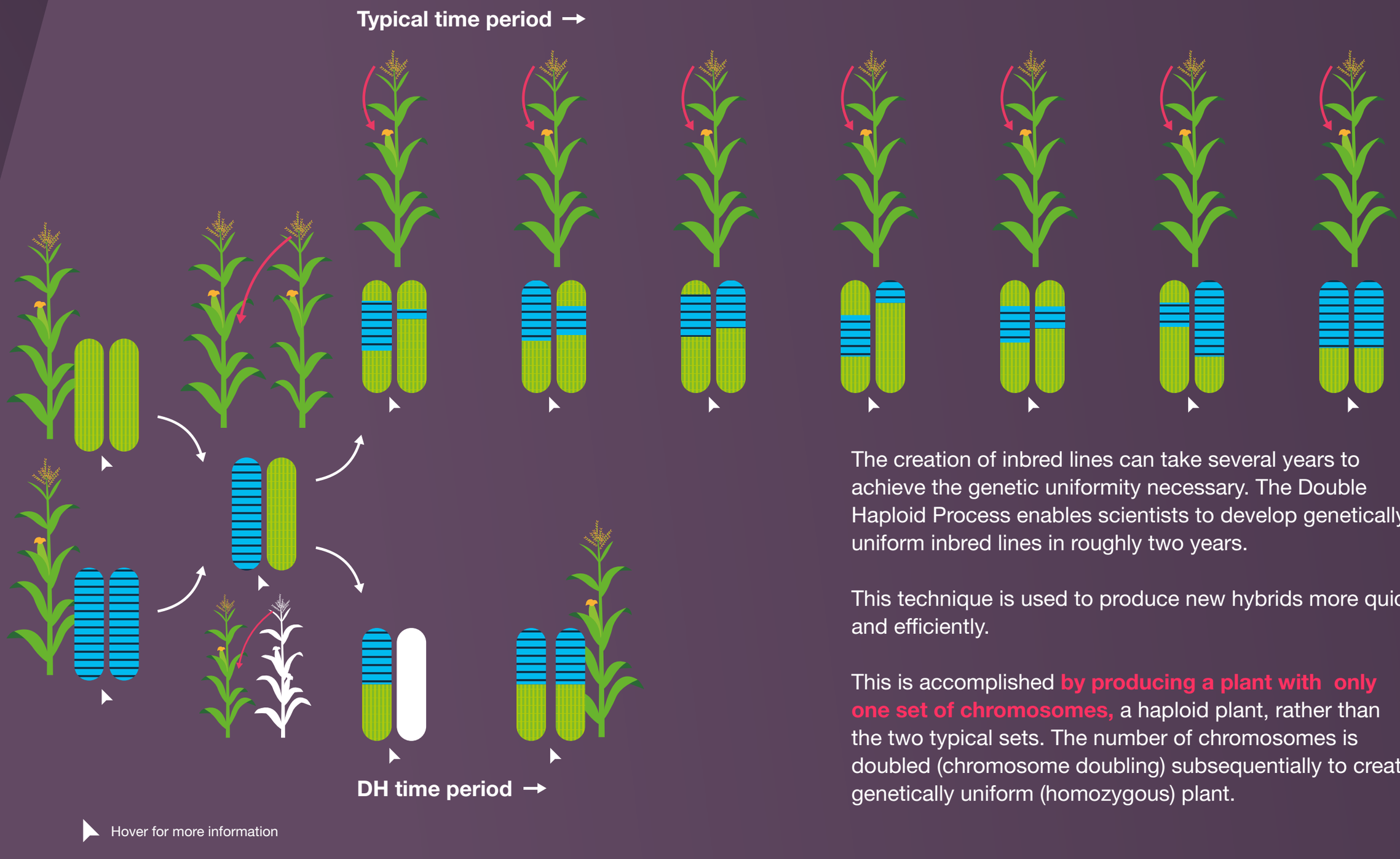
A hybrid plant is created when scientists intentionally cross two different varieties or inbreds of related plants to produce a superior offspring that outperforms either of its parents as a result of heterosis.

The **selective breeding process in the development of hybrid lines has its limits.** Without being able to specifically identify and harness the genetic regions and combinations that result in a specific desirable trait or combination of traits, **this method can transfer fewer undesirable traits in addition to the one(s) scientists wants.**

Getting the genetically pure inbred parents necessary to start the hybridization process has been made more efficient by utilizing **Double Haploid** technology.

The Double Haploid process

The Double Haploid process



The creation of inbred lines can take several years to achieve the genetic uniformity necessary. The Double Haploid Process enables scientists to develop genetically uniform inbred lines in roughly two years.

This technique is used to produce new hybrids more quickly and efficiently.

This is accomplished **by producing a plant with only one set of chromosomes,** a haploid plant, rather than the two typical sets. The number of chromosomes is doubled (chromosome doubling) subsequentially to create a genetically uniform (homozygous) plant.