

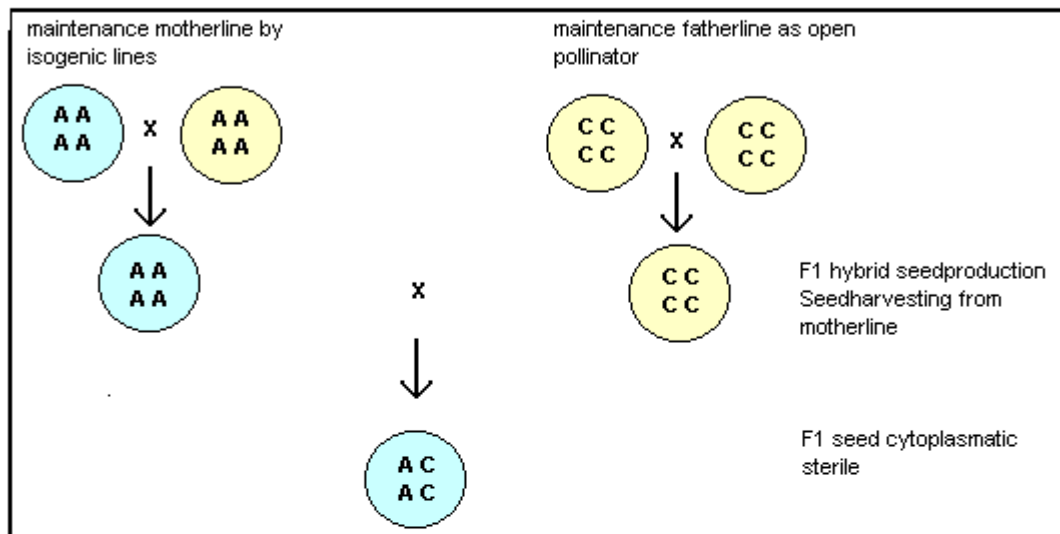
# Hybridization



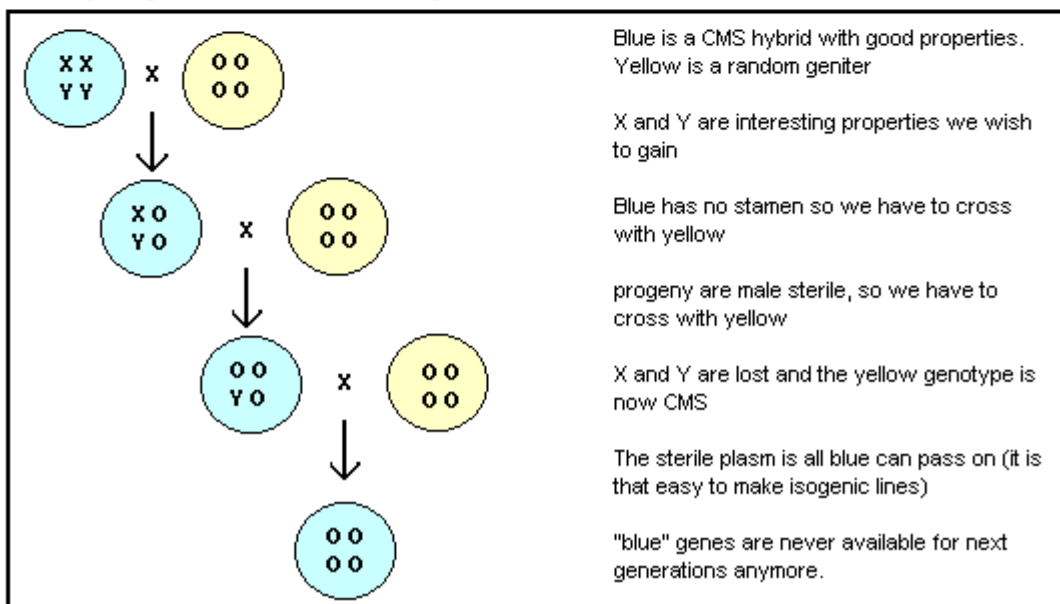
## Cytoplasmatic Male Sterility – CMS



### Principle of maintenance and seedproduction :



### Attempt to gene-transfer from CMS hybrid:



To be able to maintain the sterile mother line A (blue) you need a fertile version of the blue line (isogenic lines). In the scheme below this line is yellow (B line). The line with which the mother crosses to obtain F1 is a C-line. This has no specific maintenance line, because it is not sterile. Sterile is in this case male sterile (ms).

The greatest problem with progeny of a CMS motherplant is the progeny will be CMS as well. SO genes of the motherplant are reduced by 50% every generation until none are left.

Genes from a CMS hybrid (and all genetic variety in a company) are thus not available for other breeders. The genepool to work with is in the B -and C-lines, but they stay with the breeder. Hereby a breeder does not help in maintaining the heritage of a crop. Biodiversity is in danger. Breeders realize inbreedingdepression is a threat to their breedingprograms but they hope this will do more harm to the competition than to themselves.