UPOV
International Union for the Protection of New Varieties of Plants

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Technical Working Party for Agricultural Crops

TWA/52/5

Fifty-Second Session
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EXPERIENCES WITH NEW TYPES AND SPECIES

Document prepared by an expert from the Netherlands

Disclaimer: this document does not represent UPOV policies or guidance

The annex to this document contains a copy of a presentation “TG Hemp/Cannabis”, to be made by an expert from the Netherlands, at the fifty-second session of the TWA.

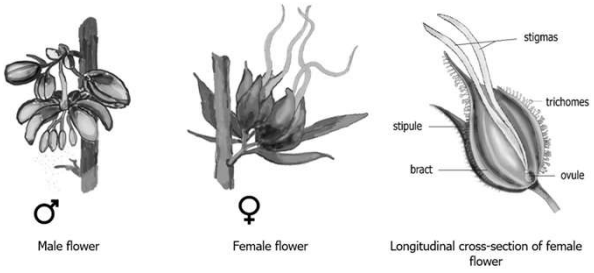
[Annex follows]


nak tuinbouw
TG Hemp/Cannabis
UPOV-TWA, 22-26 May 2023
Naktuinbouw (NL), Lysbeth Hof
15 mei 2023


Contents
Genetics of ♀♂ flowering
Biosynthesis cannabinoids
Modes of propagation
Characteristics
Feminized seed explained
Questions?

♂♀ flowering: definitions

- Hermaphrodite: flowers having male + female organs
- Monoecious: male and female flowers on the same plant
- Dioecious: male flowers and female flowers on separate plants



Male flower | Female flower | Longitudinal cross-section of female flower

♂♀ flowering: genetics

- Flowering is controlled by an XY chromosome system:

  XX = female

  XY = male
- In addition: 'masculinizing' and 'feminizing' genes have an effect on the sex expression
- Sex expression can also be influenced by 'environmental' factors:
  - stress
  - chemicals (e.g. STS)

Propagation methods

- Open pollinated (seed)
- Vegetatively propagated (cuttings)
- Feminized seed

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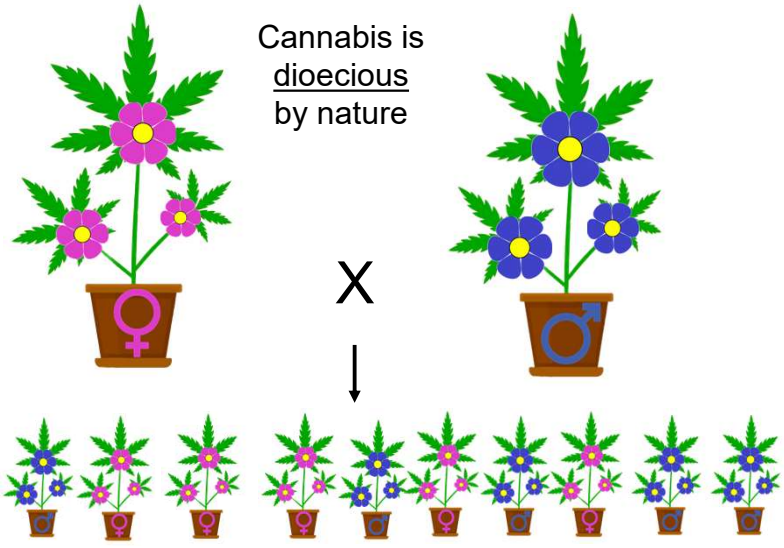
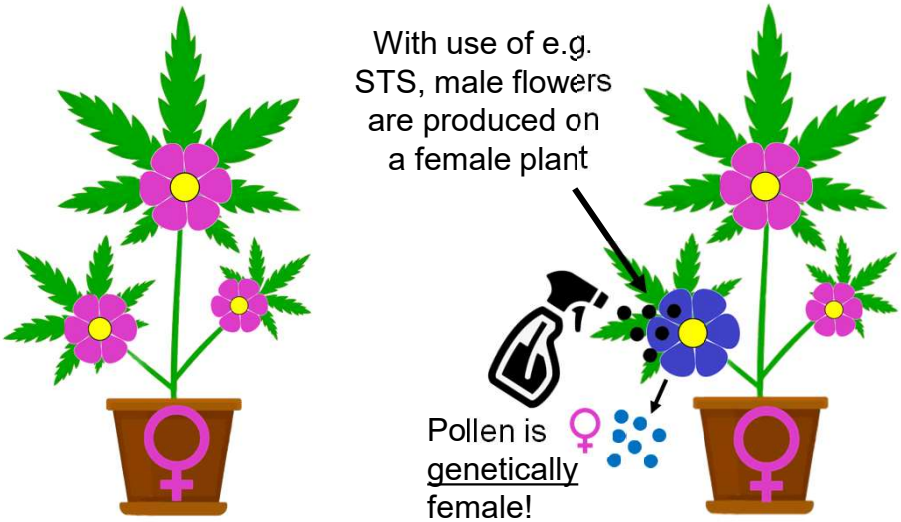
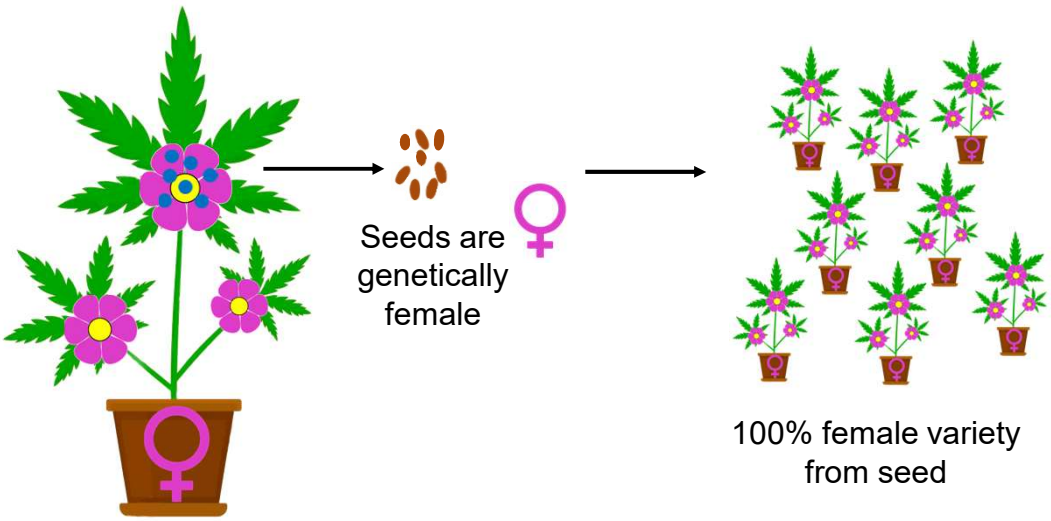
Feminized seed



Feminized seed



Feminized seed

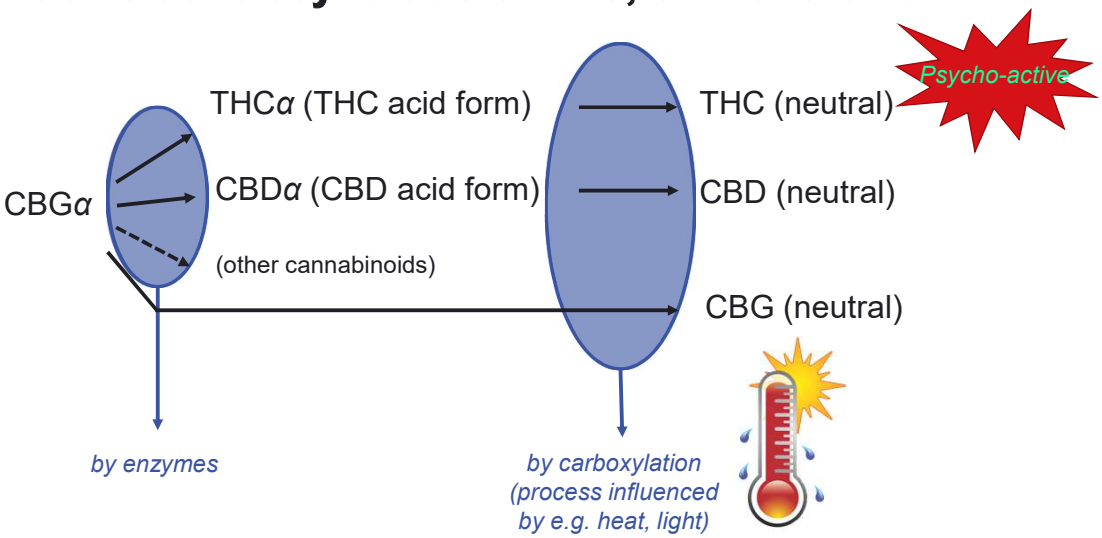


Feminized seed: propagation

Feminized seed varieties are made by using one of the following methods:

- Selected female lines are pollinated by induced male flowers of **the same** line
  - These varieties should genetically be considered self-pollinating varieties
- A female line is pollinated by induced male flowers of **another** female line
  - These varieties should genetically be considered as single cross hybrids

Cannabinoids: biosynthesis of THC, CBD and CBG



Characteristics

(2) Leaf variegation

Characteristics

(11) Female inflorescence: intensity of anthocyanin coloration

[End of Annex and of document]