



# Chlorophyll Fluorescence of Seeds A non-destructive marker for seed maturity and seed quality

Wageningen UR Greenhouse Horticulture

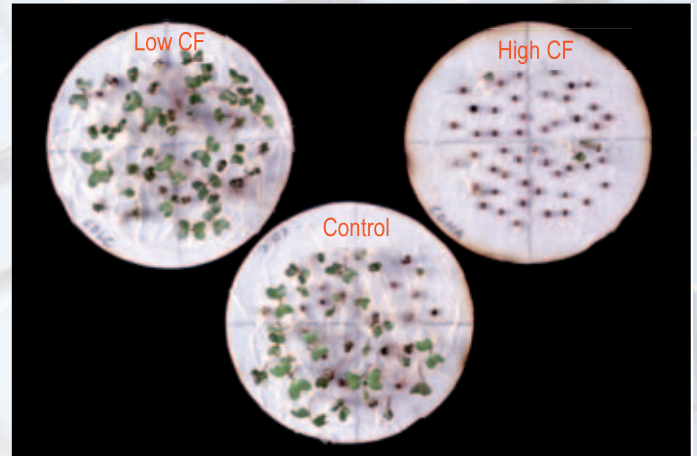
## Importance of seed maturity

A method has been developed for the assessment of maturity and quality of seeds. The method is based on a non-destructive measurement of chlorophyll-a in individual seeds.

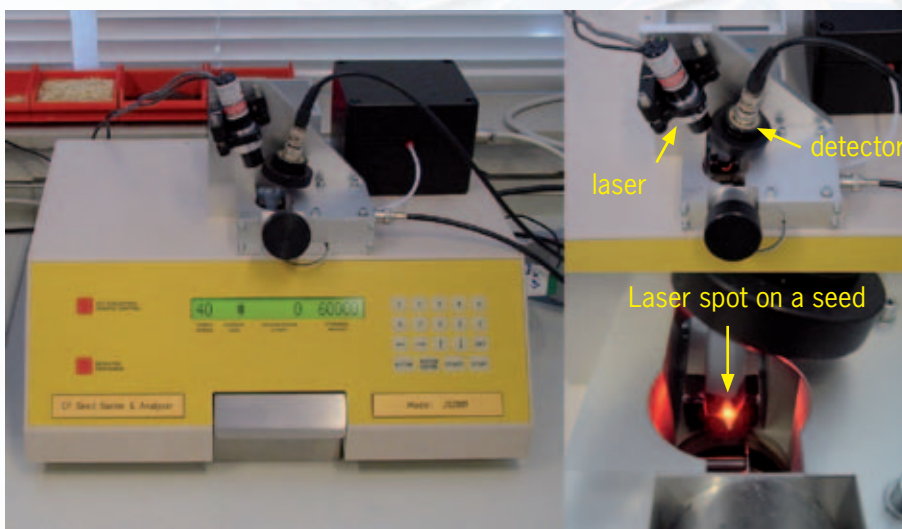
During maturation for the majority of seed species the amount of chlorophyll in the seed and seed coat decreases, whereas the quality of the seeds increases. Therefore, the quality of these seeds is directly related to the amount of chlorophyll in seeds. For instance, cabbage (*Brassica oleracea* L.) seeds mature in a dry silique as part of an indeterminate inflorescence with flowers of various ages located on side branches. A seed lot may therefore include seeds of varying maturation stages.

## Technology

The developed method uses the property of chlorophyll that it fluoresces when it is excited at a certain wavelength. Using this property and a combination of a red laser to excite the chlorophyll and narrow bandwidth filter to filter out the fluorescence, the chlorophyll in seeds can be determined.



Differences in germination quality of Brassica seeds after using chlorophyll fluorescence (CF) sorting in two fractions: low CF and high CF. There is a large difference in germination behaviour of the two CF fractions



The CF Seed Sorter & Analyser of Wageningen UR Greenhouse Horticulture

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