**Matherial and Methods**

Plant Growth Conditions and Temperature Treatments

The varieties of *Brassica napus L*. selected for the study were Dariot and Phoenix cl. Each cohort was made up half plants as control and half as stressed individuals.

Pollen Viability and Germination Assay

Pollen grains were collected directly from anthers using a brush and stored at -80 °C in a freezer. The viability test was performed using the MTT assay (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2H-tetrazolium bromide) is a mono-tetrazolium salt which consists of a positively charged quaternary tetrazole ring core containing four nitrogen atoms surrounded by three aromatic rings including two phenyl moieties and one thiazolyl ring. Reduction of MTT results in disruption of the core tetrazole ring and the formation of a violet-blue water-insoluble molecule called formazan.

The MTT assay is typically performed after one hour and pollen grains alive are distinguished by blue /purple color instead the yellow and dead ones. For pollen germination, the medium selected from literature was Lohani’s medium (XXX manca la composizione) that resulted the more suitable for the varieties. The pollen grains were allowed to be hydrated for 30 minute in an humid chamber at 22 °C on an incubator. Afterwards, pollens were mixed with the germination medium and incubated for 2h at 22°C to promote the germination and the counting germination rate was executed.

For pollen germination, pollen grains were collected from flowers with freshly dehisced anthers after each treatment. The pollen grains were allowed to hydrate for 30 min after which they were brushed onto the surface of the freshly prepared solid pollen germination medium (100 g sucrose, 25 mg boric acid, 90 mg calcium chloride, 50 mg potassium nitrate and 100 mg of Tris dissolved in 500 mL of water; 1% agar was used for solidifying it) ([Singh et al., 2008](https://pmc.ncbi.nlm.nih.gov/articles/PMC7872974/#B69)). The pollen grains were germinated for 4 h under high humidity (>70%) and light (200 μmolm–2s–1). After 4 h, the plates were observed under a microscope for scoring.