GEVES
Expertise & Performance

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Dormancy breaking methods for sunflower seeds

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Context

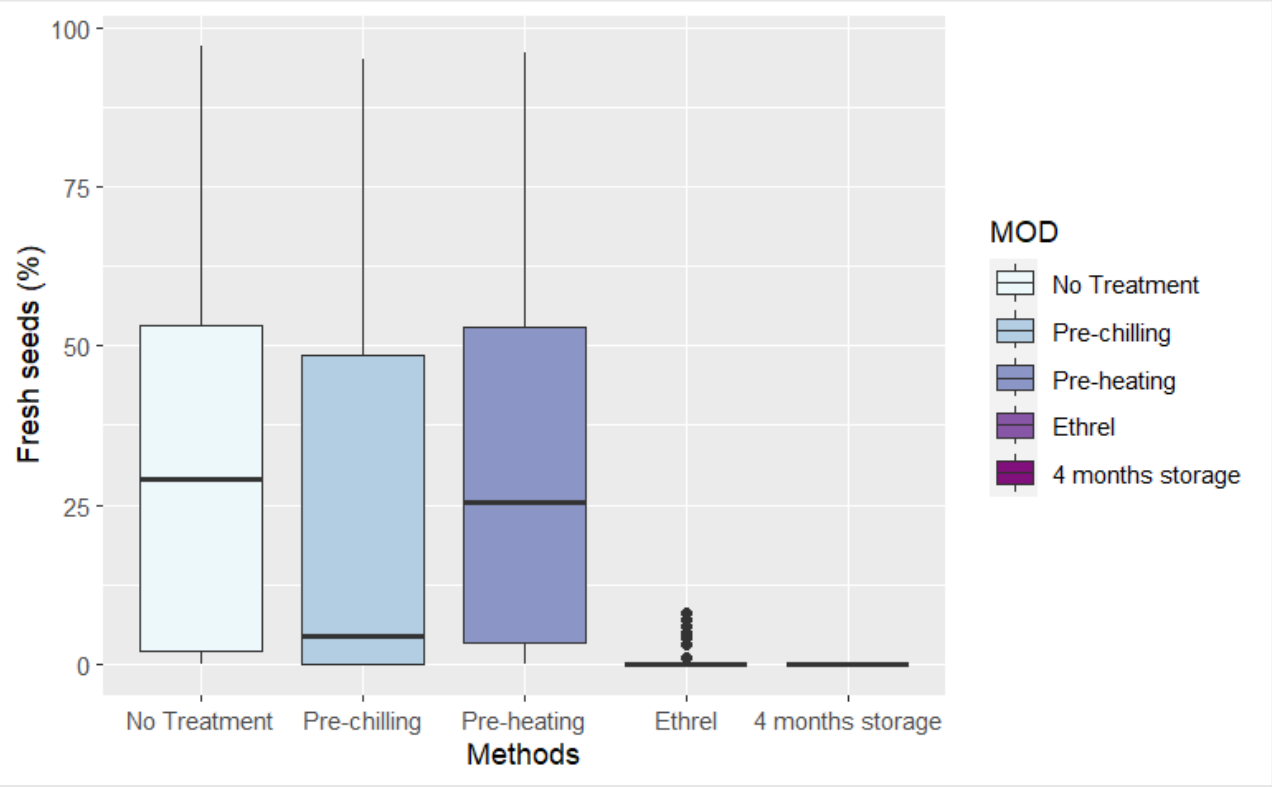
- Right after harvesting sunflower, seed dormancy is sometimes very deep and ISTA methods recommended to break dormancy fo sunflower (prechilling and preheating) do not release completely the dormancy.

- The objective of the study was to look for more efficient breaking dormancy methods for sunflower seeds.

- A preliminary study has been carried out in France between GEVES, a laboratory belonging to the corn and sorghum sector (FNPSMS) and 2 seed companies involved in sunflower breeding and seed production.

- The study has been done on 17 seed lots freshly harvested in 2021 and 2022. Among these 17 lots, 9 exhibited a low to high dormancy state

Preliminary results



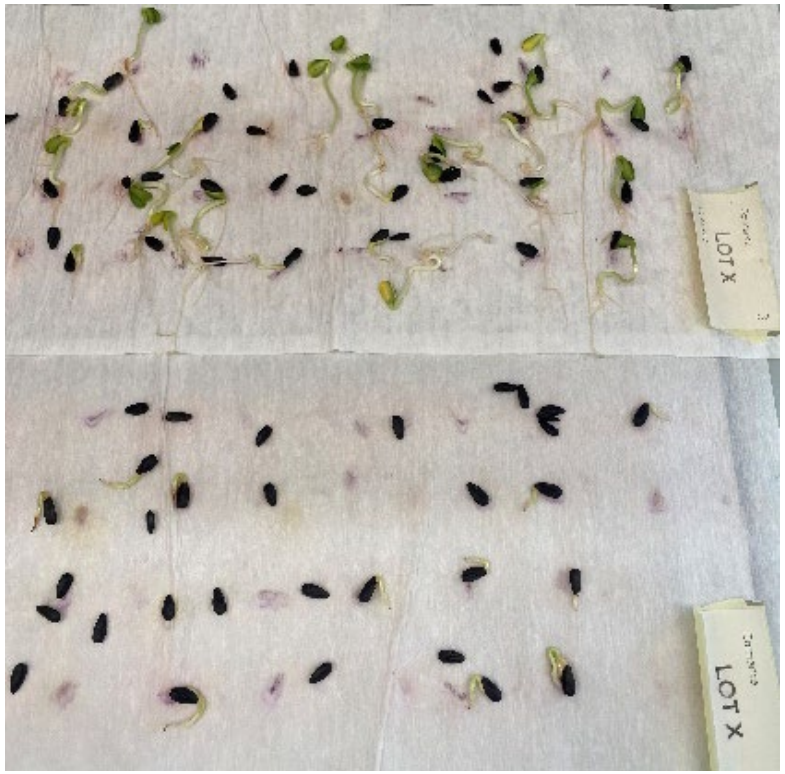
	germination	groups
Pre-heating	31.8333333	a
No Treatment	31.2205882	a
Pre-chilling	24.9558824	a
Ethrel	0.7391304	b
4 months storage	0.0000000	b

Ethrel treatment can release seed dormancy, better than the treatments currently prescribed in the ISTA Rules.

Additional results

- Tests using polyethylene envelop did not give good results, the method not being suitable to germinate sunflower seeds (many abnormal seedlings and no dormancy release)

- Tests on chemically treated seeds have shown no interaction with Ethrel treatment regarding the % of normal seedlings and the efficiency of the dormancy release



Validation study – Test plan

- ❑ 7 laboratory participants (France, Italy, Germany, The Netherlands)

- ❑ 10 to 11 seed samples of sunflower (2 to 3 seed producers)
  - ❑ Shipment is planned just after seed harvest, presumably at the end of September 2024
  - ❑ Tests are to be done very quickly

- ❑ 4 germination methods:
  - ❑ With no dormancy breaking treatment
  - ❑ With pre-chilling treatment
  - ❑ With pre-heating treatment
  - ❑ With Ethrel treatment
  - ✓ Each laboratory uses its own method to germinate sunflower seeds, according to ISTA Rules.
  - ✓ Tests to be performed on 200 seeds.
  - ✓ Etherverse product will be sent to laboratories out of France

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Thank you

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