



Liveseeding_E-learning

Module 15, Exercice 15.5

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Test hot water seed treatments on a small scale

1.1 Matériel

To test hot water treatments, you will need :

- a seed batch
- 2 resources for reference to define the range of temperatures and durations you want to test. You can print them if necessary.
- precise heating device, or a thermos flask (very small scale) or cool box (medium scale), or sous-vide device.

<https://liveseeding.eu/wp-content/uploads/2024/09/LS-PA-no.-6.pdf>

<https://www.umass.edu/agriculture-food-environment/vegetable/fact-sheets/hot-water-seed-treatment> (with this one you need to convert °F into °C)

1.2 Instructions and questions

In this exercise, it's your turn to test hot water seed treatments on a small scale !

🌱 **Choose a seed batch** you want to test hot water treatments on.

🌱 Based on this, **define 3 to 5 temperature-duration combinations** you want to test.

For example, you could choose to test 2 temperatures (50°C and 52°C) combined with 2 durations (15 min and 25 min).

- Use the instructions in the practice abstract indicated above to **perform your hot water treatment**.

If you don't have a precise heating device, you can also fill hot water at the desired temperature into a thermos flask (very small scale) or cool box (medium scale) and treat your seeds in it. In that case, be extra careful to control temperature and make sure the water volume is large enough not be cooled down too much by the seeds. You may also use a sous-vide device as used in kitchens to heat and stir water constantly. In that case, this video will give you useful indications: <https://www.youtube.com/watch?v=tLalwbUigsk>

- Once you have treated your seeds, **test the germination** of the treated samples to see which protocol(s) were tolerated by the seed batch.

You can do this directly after treatment, or after drying (depending on what you would do in practice).

You can try this exercise with any seed batch, just to get some experience with hot water treatments.

If you want to know if your treatment protocol is effective against a specific pathogen in a seed batch, that requires specific seed analysis in a phytopathology lab.