

### Hot water celery seed treatment

NOTE 1: ONLY HOT-WATER TREAT SEED BEFORE GERMINATION/PLANTING; HOT-WATER TREATED SEED LOSE THEIR LONG-TERM VIABILITY. **NEVER HOT-WATER TREAT SEED BEFORE IT GOES INTO STORAGE.**

NOTE 2: THE HOT-WATER TREATMENT ALSO REDUCES SEED GERMINATION. NONETHELESS, FOR SEED-BORNE PATHOGEN CONTROL, IT'S A GOOD IDEA TO HEAT-TREAT ALL SEED BEFORE A FIELD TRIAL.

1. Count out the seeds of the celery or celeriac variety that you want to treat with hot water. (If seeds are limited, weighing is not completely accurate because seed size varies with cultivar). For field screening, usually 1200 seeds and for green house screening 200 seeds are enough. PREHEAT THE WATER BATH AT 47C.
2. Cut out a double layer of cheesecloth squares- approximately 5"x 5" for fewer seeds and 8"X 8" for a larger number of seeds.
3. Place seeds in the center of the cheesecloth and make a small wrap around the seeds by folding in from the corners of cheesecloth square. At least 1 inch above the seeds, tie the wrap with one end of a long twist tie. (Two to three rounds of twist tie will be enough to hold the wrap.). Provide enough space in the wrap above the seeds so that all the seeds are submerged in the hot water. Label the seed bags. (Price tags with thread can be used; label with a permanent marker). Attach the label thread to other end of the twist tie and make a loop on the end of the twist tie to hold the bag to the side of the hot water bath.

**See picture below**



4. Immerse the seed wrap in a beaker of warm tap water (34C) for 5 minutes to lessen the shock of the hot water. Hang the loop of the twist tie on the edge of the beaker.
5. Transfer the seed wrap immediately into hot water bath that is preheated at 47°C. Incubate for 30 minutes.
6. After 30 min, remove the seed wrap from the hot water bath and place it in a beaker of distilled water (room temp) to stop the heating process. Soak for 1 minute and remove.
7. Pat dry the seed wrap with folds of white paper towel to remove excess water.  
Transfer the seeds onto white thick paper towel (WypAll® X50 TERI Reinforced Center Pull Wipers, 1 Ply, White, Pack of 150 (39300) labelled with seed ID for drying. This is very important step because i) if the seeds have lot of moisture they will stick to the cheesecloth and it will be very difficult to dislodge/remove from them, and ii) it will take longer time to dry the seeds
8. To speed up drying, place the seed wrap in the laminar flow hood. Alternatively, seeds can be dried on the lab bench. Seeds usually dry in about 30 min -1 hr. Drying times vary.
9. When the seeds are completely dry (no clumping, seeds feel very dry to touch), place the seeds in a coin envelope. Label!