

# Table 1. Hot-Water Seed Treatment Protocols

Prepared by Margaret Tuttle McGrath, Cornell University, Long Island Horticultural Research and Extension Center, 3059 Sound Avenue, Riverhead, NY. mtm3@cornell.edu

Crop	Temperature and time		Reference
Brussels sprouts	122°F	25 minutes	1, 3, 4
Broccoli	122°F	20 minutes	1, 2, 3
Cabbage	122°F	25 minutes	1, 3, 4
Carrot	122°F	20 minutes	1, 2, 3
Cauliflower	122°F	20 minutes	1, 3, 4
Celeriac	118°F	30 minutes	3
Celery	118°F	30 minutes	1, 3
Chinese cabbage	122°F	20 minutes	1, 4
Collards	122°F	20 minutes	1, 3, 4
Coriander	127°F	30 minutes	4
Cress	122°F	15 minutes	1, 3, 4
Cucumber	122°F	20 minutes	1, 4
Eggplant	122°F	25 minutes	1, 3, 4
Kale	122°F	20 minutes	1, 3
Kohlrabi	122°F	20 minutes	1, 3, 4
Lettuce	118°F	30 minutes	1, 3, 4
Mint	112°F	10 minutes	4
Mustard	122°F	15 minutes	1, 3, 4
New Zealand Spinach	120°F	60-120 mins	4
Onion (sets)	115°F	60 minutes	4
Parsley	122°F	30 minutes	5
Pepper	125°F	30 minutes	1, 3, 4
Radish	122°F	15 minutes	1, 3
Rutabaga	122°F	20 minutes	3, 4
Shallot	115°F	60 minutes	4
Spinach	122°F	25 minutes	1, 3, 4
Sweetpotato (roots)	115°F	65 minutes	4
(cuttings, sprouts)	120°F	10 minutes	4
Tomato	122°F	25 minutes	1, 3, 4
Turnip	122°F	20 minutes	1, 3, 4
Yam (tubers)	112°F	30 minutes	4

125°F = 51.5 °C    122°F = 50 °C    118°F = 48 °C  
 125.6°F = 52 °C    131°F = 55 °C    132.8°F = 56 °C

- 1 Seed Treatments for Commercial Vegetables in Kentucky. by Bill Nesmith 7-94
- 2 <http://agspsrv34.agric.wa.gov.au/agency/pubns/farmnote/1990/F09090.htm>
- 3 Hot Water and Chlorine Treatment of Vegetable Seeds to Eradicate Bacterial Plant Pathogens. Ohio State University Extension Fact Sheet. By Sally Miller and Melanie Ivey.
- 4 Vegetable Seed Treatment. University of Illinois Extension. RPD No. 915. March 1992. By Mohammed Babadoost.
- 5 Hot water treatment of vegetable seed – an alternative seed treatment method to control seed borne pathogens in organic farming. *Journal of Plant Diseases and Protection* 110(3):pp. 220-234. 2003. By Eva Nega et. al.

Note: Hot water treatment can be damaging or not practical for seeds of peas, beans, cucumbers, sweet corn, beets and some other crops. Some hybrid varieties of cauliflower may be damaged by the recommended treatment. From:

<http://agspsrv34.agric.wa.gov.au/agency/pubns/farmnote/1990/F09090.htm>

Vegetable seed treatments. Farmnote 90/1990