

Bed Steaming

Lessons Learned

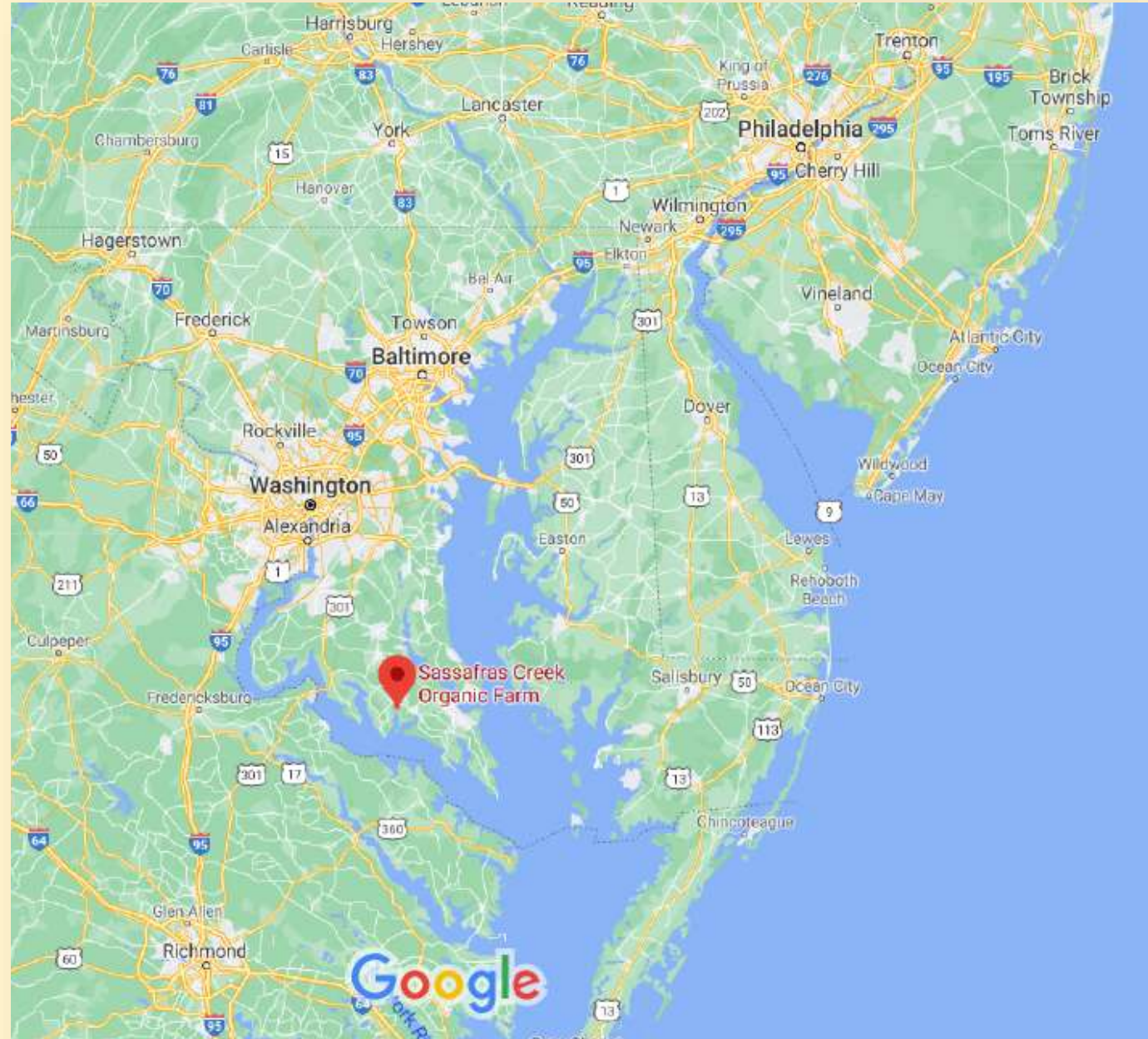


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Our Farm

- Location – sub tropical climate, Zone 7b
- Certified Organic
- High tunnels – year round
- Sandy loam soil
- Bed Steaming 1 year



Why Bed Steam?

- The Problem - Weeds & Soilborne Diseases



- The Fix - Results

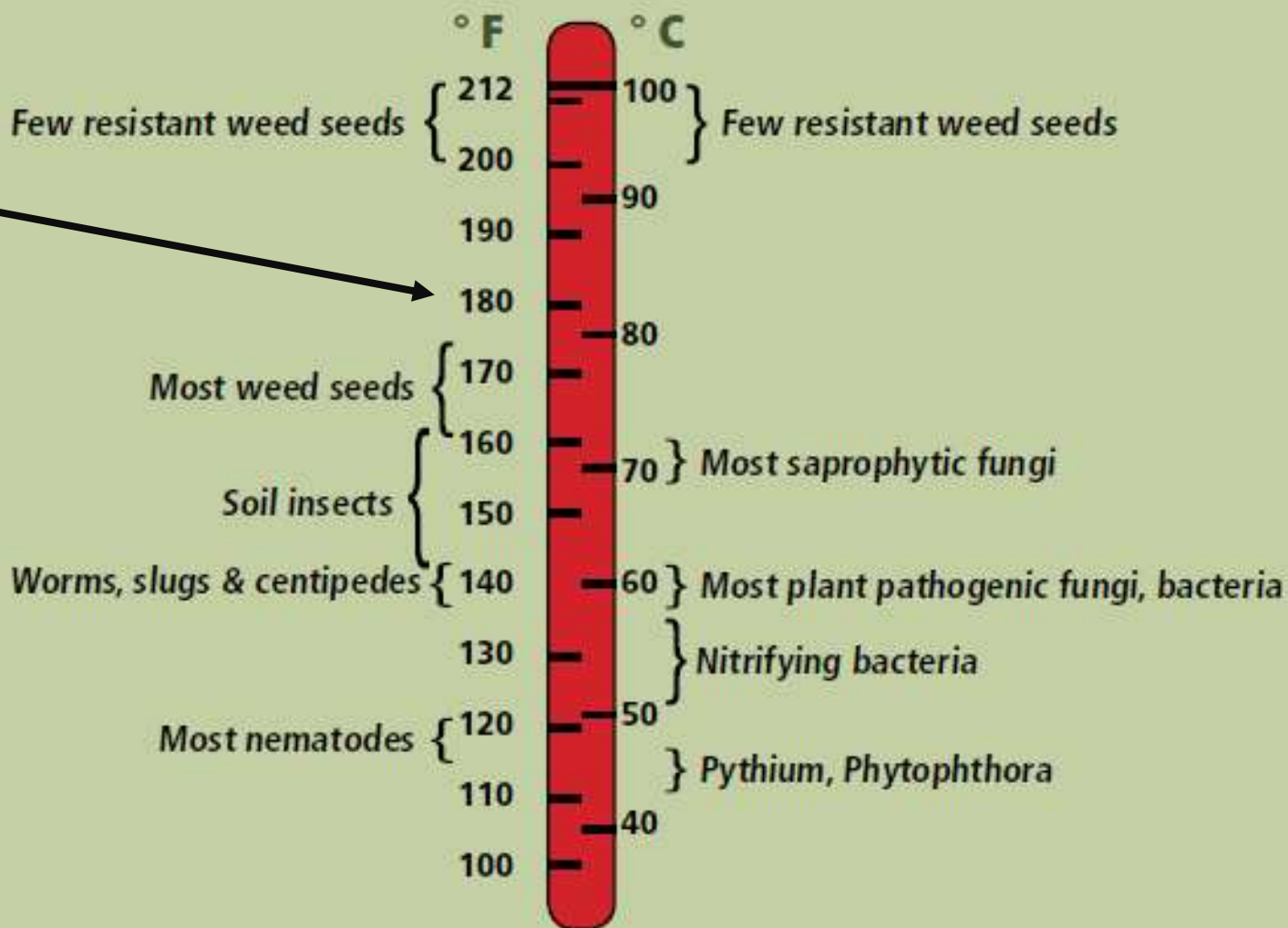
- Hand weeding - \$\$\$
- Mustard Meal – mixed results, slow and timing issues
- Grafting – mixed results, \$\$
- Steaming – It works!

- Steaming - unintended consequences?



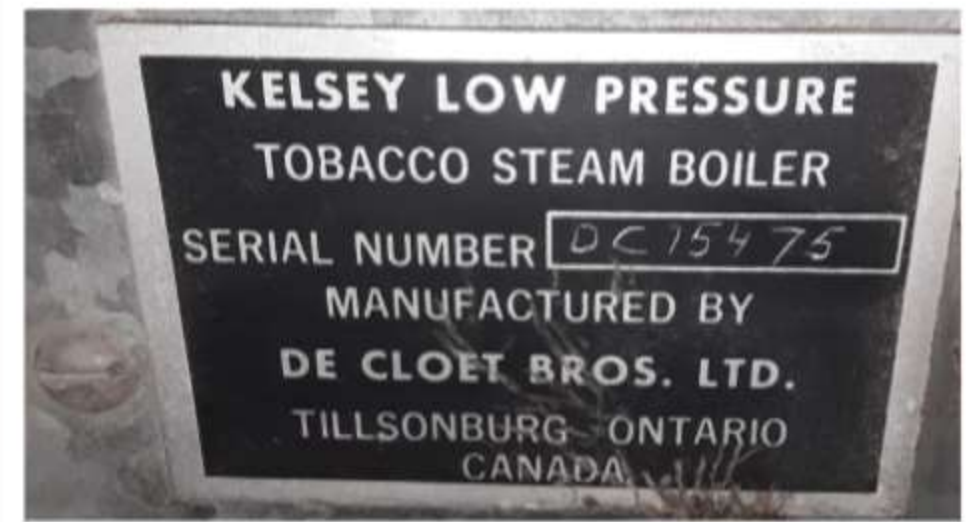
Figure 7.2.1.a — Killing pathogens with heat

Temperatures required to kill various kinds of soil microorganisms based on a 30-minute exposure to moist heat. Modified from Baker, K. F. & Cook, R. J. (1974).



Goal

Steamer



Equipment



Generator, steam sock and chains

Preparations



Preparation



Steam "Sock"

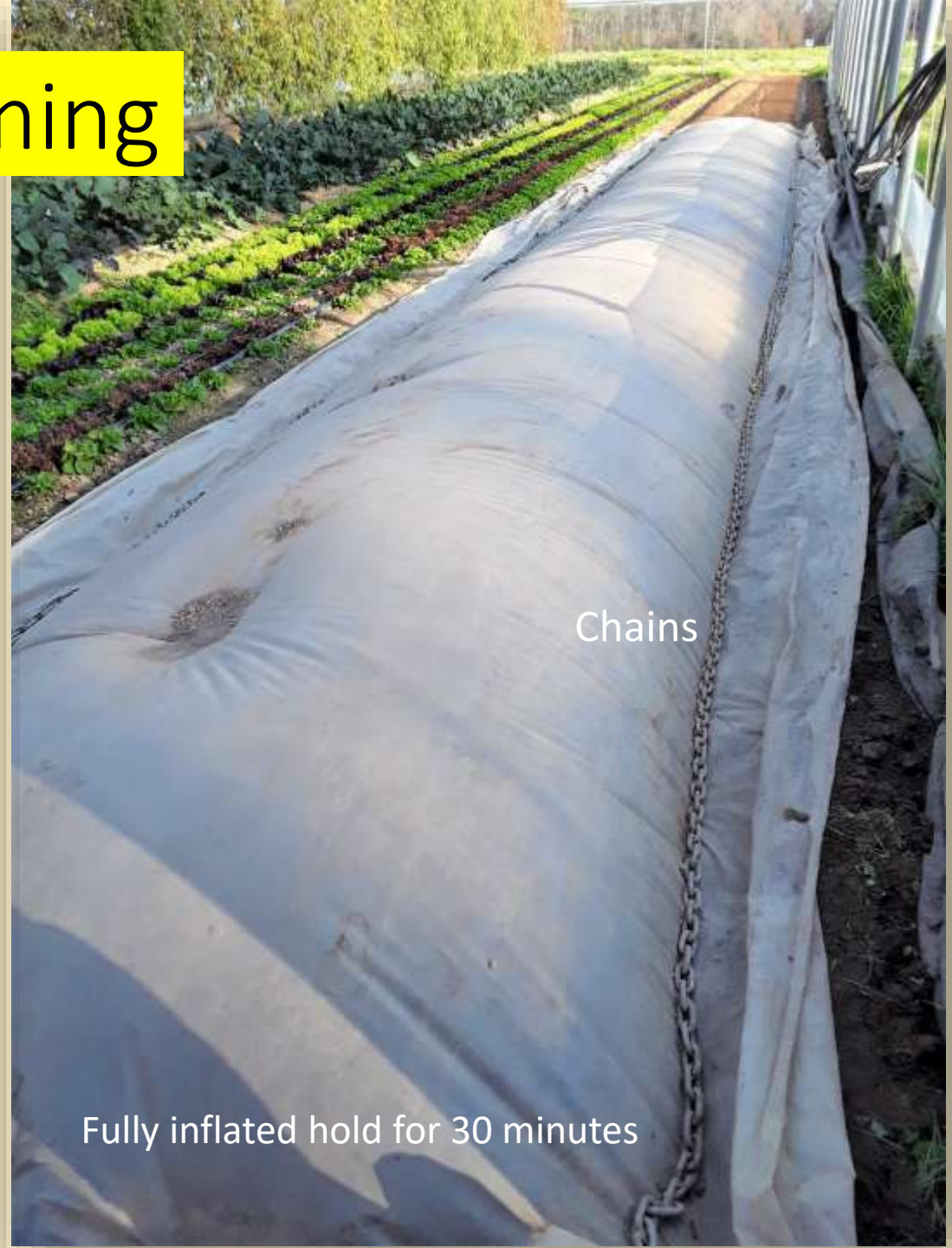


Steam "Tarp"

Steaming



Steaming



After 30 minutes at 180F (goal)

2" deep



4" deep



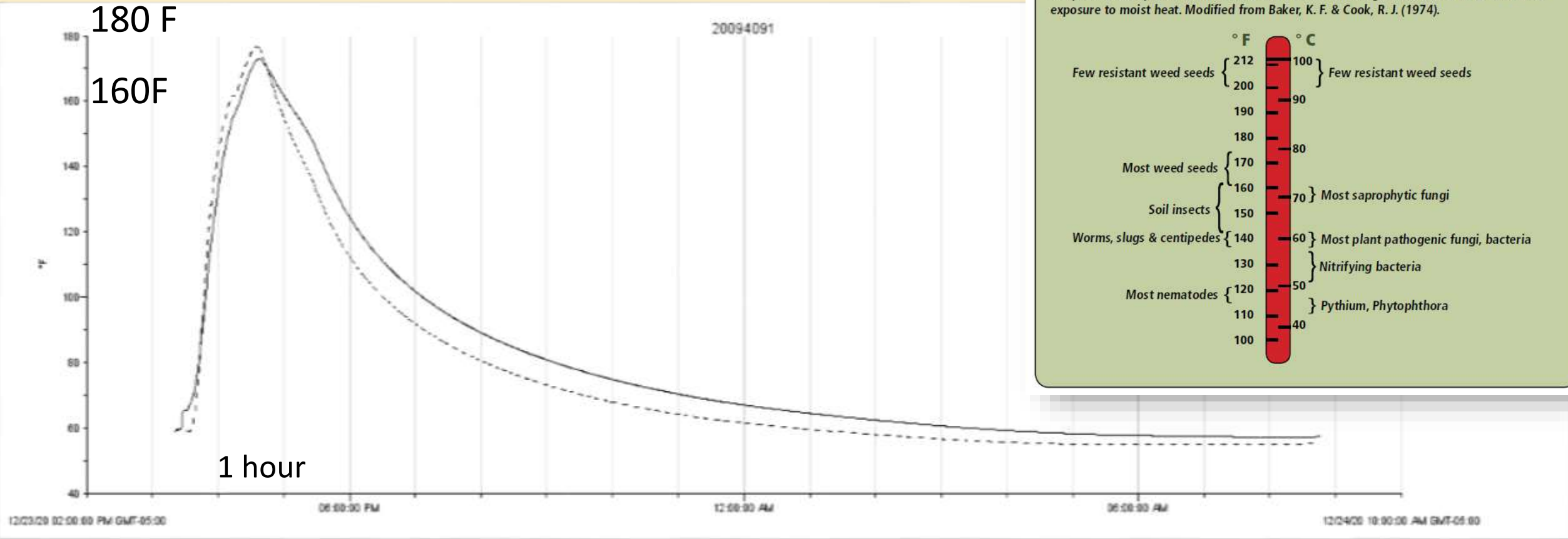
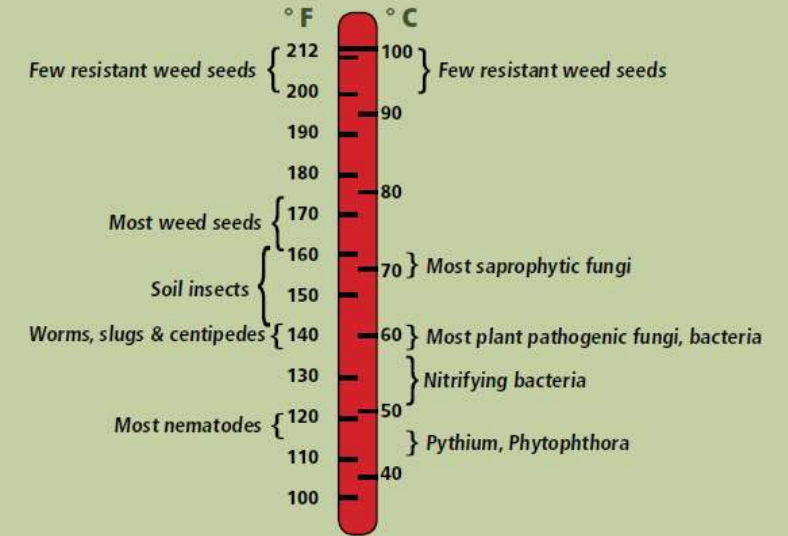
6" deep



Holding 30 mins at 2"

Figure 7.2.1.a — Killing pathogens with heat

Temperatures required to kill various kinds of soil microorganisms based on a 30-minute exposure to moist heat. Modified from Baker, K. F. & Cook, R. J. (1974).



Time & Money

Time

20 min to generate steam, 212 F

1.0 hr to reach 180 F at 2"

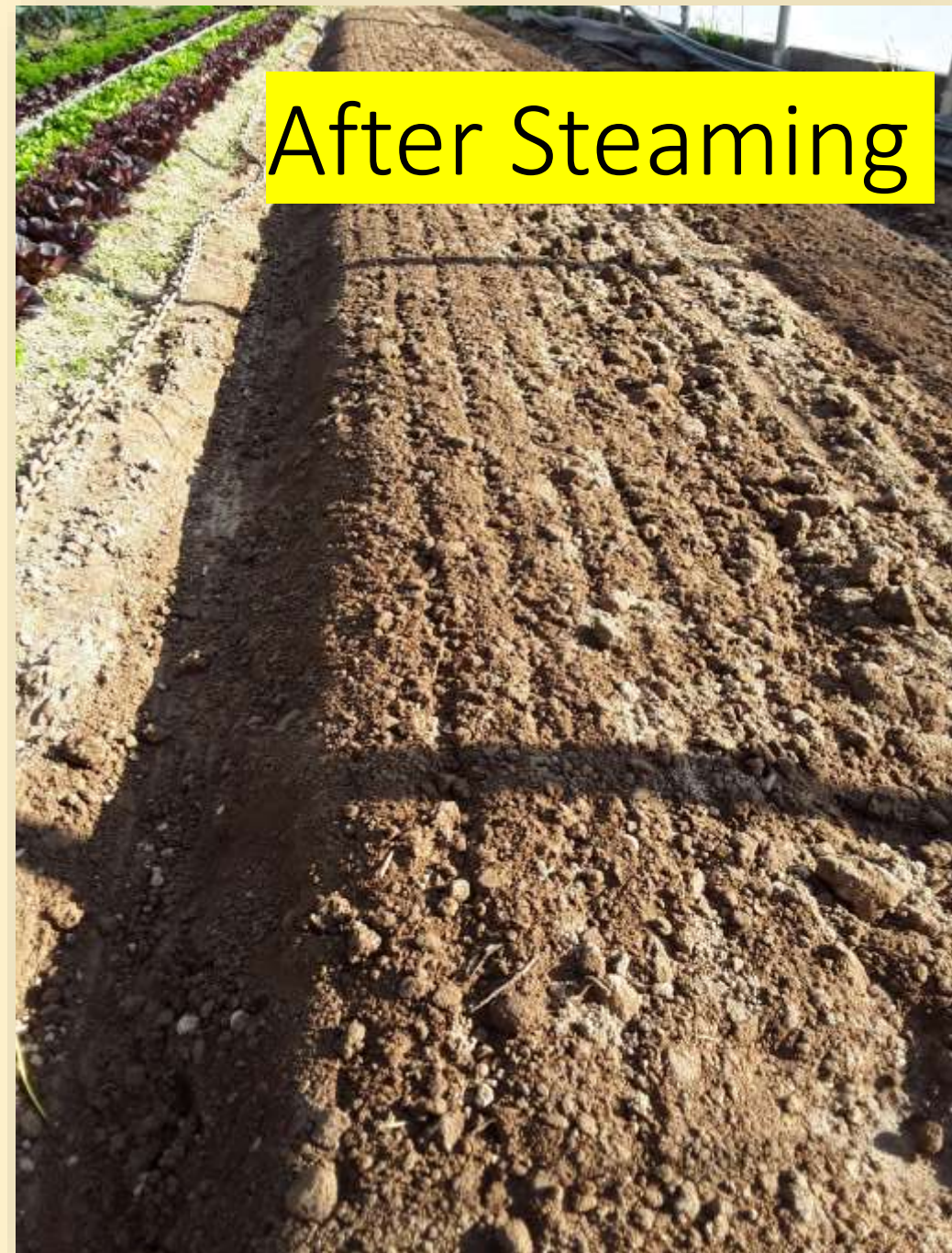
30 min hold at 180 F

Total Approx 2.0 hr per 275 sqft

Fuel

4.5 gal diesel/hr x \$2.50 = **\$11.5 per hour**

Approx \$225/per tunnel



Other Use

- Sterilize Plug Trays
- Pots
- Landscape cloth



Resources

- Steamers & Supplies

- Steamers - Harv Brenman (519) 281-1132
- Steamers - Sioux Industries
- Steam tarp – green house plastic, or Sioux.com
- Steam sock – Nylon Protective Hose Sleeve (Web or Sioux.com)
- Tarp anchor chain – 5/16" or 3/8"

- Research

- *The UC System for Producing Healthy Container-Grown Plants* 1957 Baker
- Steve Finnimore P.h.D safennimore@ucdavis.edu
- UVM on-going research

- Questions?

