

Postharvest Handling of Garlic for Successful Storage

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Topics for today

Why change post-harvest handling?

Drying treatments and their effects on garlic

Next steps





Prepare for Post-Harvest Success



Harvest at the right time
Undercut garlic before pulling
Handle well at harvest

Post-Harvest Trial

Six farms over two years

Treatments included:

- Cutting tops
- Cutting roots
- Washing garlic
- Drying in high tunnels
- Drying in barns/sheds
- Leaving garlic intact

Combinations of the above





Root Pruning. Roots were cut while garlic was still moist using a knife or pruning shears. Care was taken not to damage the basal plate.

Top cutting. Tops were cut to a height of six inches while garlic was green. The mechanical cutting showed some variation of height.

It's the little things...



And the bigger things...



Tops cut 6" tall with sickle-bar mower. Greens left in field. Garlic was undercut to harvest.

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Washing was completed using a garden hose and a nozzle. Power washers were not used. After washing, garlic was air dried before being placed in the curing area. Garlic was washed until dirt was removed from the bulb.



Drying in high tunnels: Garlic was moved to high tunnels immediately after other treatments were completed. All high tunnels had a shade cloth and were ventilated with fans, preventing temperatures from exceeding 110°F.



Open-Air Drying: These treatments were placed in solid but well-ventilated buildings such as barns and sheds to dry without supplemental heat from the sun.



Roots and tops uncut:
Garlic was left completely uncut in this treatment. It was spread out on drying racks to leave space for the bulbs to be one layer deep or it was tied into bundles of 6-10 and hung.

Results: Root Trimming

- *Trimmed vs. untrimmed:*
No significant differences were observed between these treatments in regards to bulb quality, weight, or disease incidence.



Treatment: Roots trimmed, tops trimmed, washed, open-air dried

Results: Washing bulbs

Disease incidence, particularly Aspergillus and Embellisia, was slightly higher in washed garlic.



R to L: Immediately after washing, after curing, 1 leaf removed, two leaves removed

Results: Trimming Tops

Table 1: Bulb weight comparison from year one-tops cut at 6 inches

Treatment	Average weight/head	Count
Cut at 6"	0.113	1036
Uncut	0.130	972

Table 2: Bulb weight comparison from year two—more cutting lengths are included

Treatment	Weight	Count	Average weight/head
10 inch	24.4	206	0.118
1.5 inch	23.7	183	0.129
6 inch	22.7	186	0.122
Uncut	39.4	302	0.130



Results: High Tunnel Drying

- *Garlic in high tunnels dried an average of three days faster in high tunnels than in open air structures*
- *Garlic dried in high tunnels had slightly better wrapper quality (tighter, less discoloration) at one site each year*
- *Garlic dried in tunnels also had slightly lower disease incidence (*Aspergillus* and *Embellisia*) in two of the three sites in year one, though disease was not severe in any site or treatment*
- *No garlic treatments showed damage from being dried in the high tunnel.*

Conclusions

- *Drying garlic in HT did not cause post-harvest breakdown or increase disease incidence*
- *Cutting the tops did not increase post-harvest breakdown or increase disease incidence. It also did not reduce weight in one of the two years of the trial.*
- *Washing garlic immediately improved appearance but had minor effect on long-term appearance and disease incidence*



Questions?

