Garlic Post Harvest Handling and Planting

2015 Allium Schools
Saratoga Springs and Burlington

Crystal Stewart
Eastern NY Commercial Horticulture Program
Cornell University Cooperative Extension
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…
Tops cut 6” tall with sickle-bar mower. Greens left in field. Garlic was undercut to harvest.
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
Disease incidence, particularly Aspergillus and Embellisia, was slightly higher in washed garlic.

Results: Washing bulbs

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**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Average weight/ head</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut at 6”</td>
<td>0.113</td>
<td>1036</td>
</tr>
<tr>
<td>Uncut</td>
<td>0.130</td>
<td>972</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Weight</th>
<th>Count</th>
<th>Average weight/ head</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 inch</td>
<td>24.4</td>
<td>206</td>
<td>0.118</td>
</tr>
<tr>
<td>1.5 inch</td>
<td>23.7</td>
<td>183</td>
<td>0.129</td>
</tr>
<tr>
<td>6 inch</td>
<td>22.7</td>
<td>186</td>
<td>0.122</td>
</tr>
<tr>
<td>Uncut</td>
<td>39.4</td>
<td>302</td>
<td>0.130</td>
</tr>
</tbody>
</table>
Results: High Tunnel Drying

- Garlic in high tunnels dried an average of three days faster 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.
For more information…

Crystal Stewart
Eastern NY Commercial Horticulture program
Cornell University Cooperative Extension
cls263@cornell.edu
518.775.0018
http://enych.cce.cornell.edu/

Thanks to Northeast SARE for the generous support of this project
Questions so far?
What’s going on with garlic now?
Storage
Quality control and garlic seed:
Garlic Bloat Nematode
A rare closer look....
Ditylenchus dipsaci

Images: Dr George Abawi
Fusarium diseases
Planting time:

How do you give garlic the best start?

- Fertility
- Raised beds
- Weed control
- Mulching
Storage
Additional questions, challenges, concerns?