

Workshop Title: Growing Great Garlic, Part 1

Speaker: Lenny Levine

Executive Summary:

Lenny emphasizes that garlic is not disease resistant but the process of crop management can foster resistance. Lenny grows Argentinian garlic but hasn't introduced any new garlic to his operation since the late 1980s. He produces all his own seed. In 2014 he planted 8,000 cloves. Seed saving is the key to long-term sustainability. What you plant is what you get.

Notes

Lenny began growing garlic in 1984. He tried many any different varieties. His average bulb is between 55 and 65 grams. He rotates his crops in four fields in a four-year cycle. He summarized his management activity by presenting a chronological description of his yearly tasks.

Spring - up until June 1

- Two applications of blood meal are applied to each bed that was planted in the previous fall. Application rate is approximately 2-3 grams per bulb. This stimulates biological activity and keeps deer away.
- Garlic beds are monitored to remove weeds and cull garlic that doesn't look healthy.
- The walking paths between the rows are tilled.
- No irrigation is used.
- The beds that will be planted in the fall are tilled.
- Lenny emphasized that most of the work in the garlic beds in a season goes into preparation of the beds for the following year. Three beds are in various stages of preparation while one bed is planted.

June

- Continue the hunt for poor-looking garlic and remove as required.
- Lenny owns no machinery except for a tiller.
- A tractor comes in to till beds for fall planting. This work is contracted out.
- The tractor tills in Buckwheat planted the previous year and three loads of composted manure are applied to next year's bed.

July

- Buckwheat is planted in the succession field established for the following year.
- All scapes are cut early in July. Cuts are square, not pointed and are done above the leaf joints. Pointed cuts could damage other plants.
- Keep the weeds out!
- His harvest in 2014 was on July 16 and completed in one day.
- A dedicated building for garlic curing and storage has been built. Garlic building is cleaned and prepared for the curing process at this time. Lenny uses fans and a dehumidifier. Direct sunlight damages garlic so as they are picked they are covered with straw. Do not expose garlic to direct sunlight.
- Garlic is pulled in one day and let to stand in the field. The garlic bunches are covered with straw to avoid direct sun.
- Garlic bruises very easily so handle carefully. By July 18 all garlic is in the building.

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- First two weeks of curing are very important. Curing is different than drying. Curing is a long process - taking up to six weeks. Humidity is carefully monitored. It is very important to keep air moving over the garlic. Plants are placed on bread trays in groups or 10 with 50 plants on each tray. Stems and roots remain on the plants.
- If the garlic begins to sweat the fans are moved around to facilitate curing.
- Constant vigilance is required

August

- Plants are trimmed around mid August. All stems and roots are removed. The average bulb weight is 55 grams. It took two days this year to trim the crop.
- Lenny keeps the fans and the dehumidifier on until November 1. He regularly checks the humidity levels.

September

- In early September (September 6 in 2014) the tractor is brought in again for a second visit. The field of buckwheat is mowed for 2015. Manure is spread and oats planted. White clover is planted in the field from which garlic was harvested this year. The final selection of 8,000 cloves is set aside for planting. Cloves are carefully examined and if any clove in a bulb is soft the entire bulb is rejected. A soft clove suggests that mould is present.
- Mid September sees the planting of the crop for next year. This is planted in the field that had the buckwheat turned in as well as the three loads of composted manure.
- The only insect that is a problem that Lenny encounters is the onion thrip. Evidence of their presence is looked for.
- Approximately 25% of Lenny's seed is used for planting on his farm. The rest is sold for seed.
- Great care is taken when the bulbs are broken up and the cloves removed. Garlic is easily damaged. If mould is present the infected plants and cloves are removed and care is taken to not spread the infection to the seed stock.
- Lenny chooses only four clove bulbs for replanting. He has found that five or six clove bulbs often have "runt" cloves which he rejects for planting purposes. They can be used for other things.
- Breaking up a clove - Peel skin off and find the line that separates the bulb in two. Then simply pull the bulb in two. Separate cloves.

Planting

- All garlic cloves are planted 5.5 inches apart in rows 14 inches apart. Lenny uses a specially built roller to set the spacing in a consistent pattern. He applies about 40 kilograms of crab meal to the top of beds to be planted.
- Straw is applied in mid November to the planted bed.
- Clover is planted in the bed that has been harvested in that particular year.
- Lenny averages seven bulbs per pound
- Quality seed is the single factor contributing to successful production.

A partial list of must "do's" in Lenny's experience:

- Be very selective and pay close attention to seed quality.
- Be sure to ensure a good cure not a dry.
- Monitor constantly for dryness.
- Make good use of green manures and mulch.

- Know your land.
- Keep a journal from year to year.

Lenny's "Don'ts"

- Avoid damaging garlic in handling.
- Ensure weed control.
- Avoid wet land.
- Never use anything other than the very best quality seed.

Harvest

- Nine thousand bulbs produced.

Q and A

Q. What to look for when culling?

A. Anything that looks bad.

Q. Planting depth?

A. Twice the height of the clove

Q. Length of prods on the roller?

A. 3.5 inch carriage bolts

Q. Which way do rows face?

A. All rows run north-south

Q Winter Storing?

A Lenny keeps his in an upstairs bedroom in his house with a window cracked

Q. Variety

A. No garlic brought in since 1987

Q Compost of garlic bulbs and cloves that are rejected?

A I use a garlic dump. Nothing is reintroduced to the field.

Q. Black spots.

A. Examine and deal with all signs of mould.

Q Why leave leaves on after harvest.

A Garlic continues to grow after it is harvested. So leave the leaves on during the curing process.

Q. Do you put off planting if weather is an issue?

A. Generally not. Lenny prefers to plant on the waning moon if possible.

Workshop Title: Growing Great Garlic, Part 2

Speaker: Lenny Levine

Executive Summary:

Lenny's session on garlic was continued after a short break. This second session focused on using green manure crops and feeding the soil. Additional details and clarification of his approach to garlic management were provided. Much of the conversation was in the form of question and answer.

Lenny's farm was purchased in 1973. His first crop was buckwheat. Buckwheat has no nitrogen content but the residue does contain 2% potash.

Buckwheat

- Ten pounds of buckwheat provides 100 pounds of organic material for the field. It also chokes out our weeds if planted densely. Lenny believes that buckwheat and leaving the field fallow in rotation promotes balance in the field for his garlic. Lenny still uses clover as well. Fava beans have also been used to fix nitrogen. Oats and barley are used primarily for weed control. Using these crops significantly reduces weeding.

Lenny keeps the ground covered at all times with green manure crops. The more variety of green manure crops the better. The best thing for organic process is to add nutrients in a natural way. The soil cycle is very important to maintain. It is also very important to know your land.

A summary of **Lenny's four-year rotation** on one of his four plots is provided below:

- Year one: Blood meal is applied in the spring in a light application between the rows of growing garlic. Garlic is harvested in July. White clover is planted after garlic is harvested and left to overwinter.
- Year two: clover is left in field and overwinters
- Year three: Overwintered clover is tilled in. Buckwheat is planted and allowed to flower. Buckwheat is then tilled in and plot is planted in buckwheat again. Buckwheat is overwintered.
- Year Four: Buckwheat residue is tilled in and plot is planted in oats. Oats are tilled in the early fall. Three loads of compost are applied and tilled in. Forty kilograms of crabmeat are applied to the top of the bed. Garlic is planted in the fall.

- Q. Is straw left on during the growing of the garlic?
- A. Yes, but garlic is checked to ensure that none is trapped under the straw. Twenty-eight square bales are used for 8,000 bulbs.

- Q. Do you mulch in the spring again?
- A. No

- Q. How would you use seaweed in garlic production?
- A. Lenny has never used any other amendments. Several participants reported success using seaweed as mulch.

- Q. When do you use compost?

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- A. One application to one field each year. Compost is applied before the green manure. Before the oats and before one of the buckwheat applications.

- The use of blood meal promotes the presence of earthworms. Lenny feels that this also raises the temperature of the soil.

Planting date this year was October 29. Lenny prefers to plant on the waning moon.

Lenny pays no attention to pH.

Lenny avoids using hay as a mulch.

Q. How do you choose your harvest date?

A. Lenny examines his 25 years of records and always harvests between the 17th and the 19th of July.

Garlic is not a heavy feeder. In the fall the cloves put their roots down and adjust to the cold.

Q. How will climate change affect planting?

A. Garlic that sprouts in the fall is garlic that has been dried not cured.

Q. Why four cloves?

A. Avoids runt cloves. This has worked well for Lenny who is producing seed garlic.

The blood meal is used as a stimulant for worms not as a nutrient.

Quality control is vital. Lenny is looking for long-term sustainability.

Q. Yellow staining?

A. That is smut. Reject those cloves.

Curing:

- Check before the curing stage to reject any poor bulbs.
- Use fans and dehumidifier
- Check several times a day
- Lenny uses a meter that measures temperature, dew point and relative humidity

A quick summary:

- clover for 22 months
- buckwheat for 12 months
- volunteer buckwheat and oats then plant