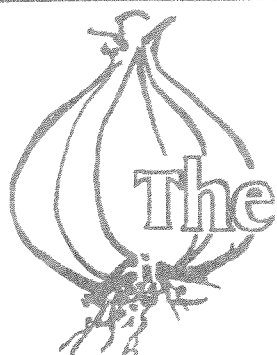
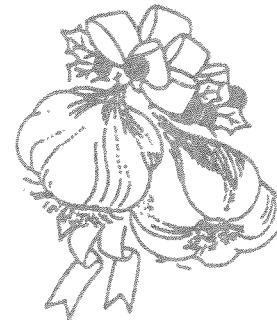


WINTER 1995/6



The Garlic Press

THE REGULAR, AND NOT SO REGULAR,
NEWSLETTER OF THE GARLIC SEED FOUNDATION



#25

Coping with Weeds Organically

by Vern Grubinger, University of Vermont Extension System
[Reprinted from *The Natural Farmer*]

To me, the term "weed management" is an oxymoron. Actually managing weeds is akin to managing teenagers, or the federal debt. Rather, one tries to set limits and then learns to live with them! Management is a term that implies control. Perhaps "coping strategies" better describes the continuous and multi-faceted process of suppressing, and co-existing with, weeds.

To be too laid back about one's weeds can be self-defeating. Some serious weed control efforts are invariably needed to produce crops profitably. Just because weeds may be indicators of certain soil conditions, or a source of organic residues for the soil, they must be recognized as more detrimental than beneficial. There are better ways to assess soil conditions or to maintain soil organic matter than to grow weeds. The following are some strategies for coping with weeds.

Identification is a critical aspect of weed management. Once named, the particulars of the weed's life cycle can be looked up, and an appropriate control strategy formulated. Common names of weeds can be unreliable, as there may be many for a given species. (Or the same name may be applied to many species - I am amazed at how many grasses are called "quackgrass" in Vermont!) Use a weed identification guide, several of which are listed at the end of this article, to get to know your weeds and their habits. Additionally, UMass, PennState and other Extension Services publish individual weed fact sheets.

Mapping of weeds is a way to document the different types of weed pressure on your farm. Then specific suppression strategies can be planned for particular

fields or portions of fields. Some fields may have a lot of perennial weeds, others may not.

Scouting, or walking the field and closely observing weeds, is a necessary step in making a weed map. (Don't do it from the cab of the pickup.) Scouting also helps you monitor weed development during the season. This can facilitate timely hand removal of a weed that has just recently arrived on part of the farm, or timely cultivation when a particular weed species in a field is about to mature seed.

Critical Periods define the time when control of weeds is most important to the growth of this year's crop. A short-term management concern, the "critical period" should be the time when you implement intensive weed control. For many crops, this period is from a week or two after emergence until a month or two later when the crop canopy becomes dominant. (Obviously the critical period varies depending on the competitiveness of the crop, weed species present, etc.) The idea is to keep up with weeds until the crop is "made." Letting weeds go toward the end of the season won't have much effect on this year's crops, except for interfering with harvest.

Weed Seed Bank management addresses the long-term aspect of weed control: reduction of the numbers of viable weed seeds in the soil. Although there are already many millions of weed seeds in your fields, the tens of thousands more than can be added by a single annual weed going to seed will not help. And although weed seeds in the soil are potentially viable for many years, many of them will suffer natural mortality before they are ever brought up to the

surface of the soil to see the light of day. If additional input of weed seeds is limited, and the soil surface is worked regularly, but deeper soil disturbance is minimized, the weed seed bank that you have to deal with can be reduced over time. To do this, keep weeds from going to seed by cultivating open areas later in the season, after the critical period but before weed seeds are matured. Use cover crops on open areas to suppress weeds. Keep alleyways and roadways between fields mowed. The importation of weed seeds in animal manures should also be limited by thorough hot composting before applying to the soil.

Crop Rotation affects weed pressure in years to come. Rotation alters the cultural practices and environmental conditions in a field so that a given weed is less likely to proliferate. Frequent rotation among diverse crops can be an effective tool for minimizing weed, as well as insect and disease, pressure.

Cover Crops should be liberally included in rotations, and weed control is just one of the many factors to consider in selecting a cover crop species. While weeds may germinate along with cover crops, their growth and reproduction can be limited by a more competitive cover crop. Winter cover crops like rye, or rye plus hairy vetch, can suppress autumn and early spring weed growth. A winter-killed cover like oats can also suppress autumn weeds, and for a short period of time, spring weeds. Warm-season cover crops such as buckwheat or sorghum-sudangrass can suppress weeds in the summer, between spring and fall crops. For very weedy fields, a year-long sequence of suppressive cover crops can

[continued on page 5]

Director's Notes

David Stern



Saturday Night, October 28

"When should I plant this garlic?"

"You want to give it 6 weeks before ground frost for the roots to grab 12" deep in the soil. Here in Upstate (NY) that means the middle of October."

That's what I tell folks, but I am seldom on time. I'm almost done: all the elephants and "production garlic" are in, with 2,000 row-feet of "trials" to finish. Radio says bad weather's on its way, so I worked on into darkness tonight covering the planted furrows. The sun dropped out on the west with a beautiful clear red/pink sky, while the moon and stars appeared to the east. Driving tractor at night is a totally different experience than in sunlight. The depth of your headlights and worklights is the depth of your world and, as with cultivating, you work alertly and with great concentration, controlling your machine and depth and location of the tool following behind. You don't move very quickly, but as the air gets colder, that slight draft of air can start to burn your face.

But there is tremendous satisfaction when planting's over, when it's all in the ground. That's why we're Brothers and Sisters in Garlic — we all experience/share in the same cycle, the same pains and frustrations, the same amazement and joy that we have for 5,000 years. I sat out on the silenced tractor in the barn before I came in tonight and thought about my cycle — which runs with the seasons — and fall is now to shut down/pre-dormancy. I "finish" another warm-sun cycle by planting the clove, which becomes the "start" of its life cycle to bulb. This has not been an easy fall for me. There have been times that I have not enjoyed farming.

Fall also means festivals, and I was blessed to be able to attend three in the northeast. Nicest part of this work — meeting people, talking and sharing ideas, information, bad jokes, and bad breath. Eating garlic must affect our facial muscles, because folks always smile when they eat/talk/think about it!

I've been contemplating about my future work with the GSF, which is described in *Predictions GSF 1996* (in this *Press*). Specifically with the *Press*, I want to create and share information to make us better growers of garlic. I'm going to start with our earth: its care and feeding. The earth in my fields is not the earth in your garden, but it doesn't make any difference! We need to protect our soils from erosion and nurture and balance their needs. I'll share a secret with you: the worst garlic on great soil will do better than the "best garlic in the world" when grown in concrete. All the talk on varieties puzzles me. I wish we spent as much time/energy/money on our land. That's one goal. The other is creating and sharing information on specific diseases and pests. The GSF just bought a \$30 book on the subject, and I plan to use it as a reference. The Onion Maggot will be my first target! My hope is that education in management will create better farmers/stewards.

November 21

Bad weather did come in: no frost (picked peppers and gladiolas into the first week of November), then 20°, snows of 4", 6", 6", 8", now rain and slush and slop. The sun ran away for 9 days! This morning I finished covering those 2,000 row-feet of trials (mentioned above). There is no longer a drought; that's been replaced by standing water in some lower fields, and wells and ponds are once again full.

The garlic is done for the year — except to clean, bag, and sell some to retail, grind and freeze #15-20, and make pickles! Garlic pickles for the holidays! How are you putting garlic in your celebrations?

I'm spending time in the woods. Firewood and culling, road work, a new lean-to constructed. An important place for me to reflect. It's a comfortable and safe place for me to work and to play also. Winter is our time to play, relax, read, and in some way try to catch up to what's left you behind while you were farming. On behalf of the GSF, we hope you have a happy and joyous holiday no matter what your belief or ritual. And, in 1996, well, Bob and I both agree that the injustice and violence shall end, Mother Earth shall heal, we'll eat lots of garlic, people will start to live responsible and sustainable lives, and it all starts inside of each of us, one step and one day at a time. Let us find peace on this green Earth, the very best to each of you and your families.

PREDICTIONS FOR GSF 1996

The Board of Directors will formalize the Garlic Seed Foundation in the eyes of New York State. A new name shall arise from the ashes of the old and a new brochure will be produced. Bulletin #387 shall be rewritten by our members under our new name. Regional garlic gatherings will happen in the Northwest, Midwest and South. New festivals will pop up like mushrooms on the manure pile with Saugerties outdrawing Gilroy at 650,000 over 3 days. The *Press* will go to a 4-color rag, publish a complete index for the first 29 issues, and Bob Dunkel will be awarded a Pulitzer Prize for his reflections and poetry. Dues for new members will go up to \$15 for the first year then down with the rest of us to \$10, and we'll have a renewal system to catch all you bad people who forget to send in your dues! And the weeds shall grow

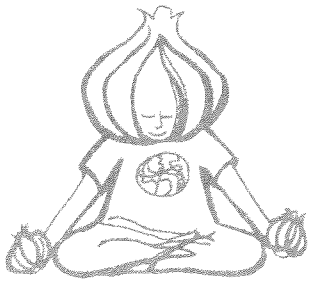
(D.S.)

ALLIO-FILE

- 🍷 **NAME GAME:** We need to change from the Garlic Seed Foundation to _____ and we need your help. We're not a "foundation" and the beast we grow doesn't provide "seed," so what are we? You tell us, and we'll put it out for a vote. The winner will get a swell prize and a swelled head (observing their creation). We're changing our name, not our identity.
- 🍷 **LAWYER** or legal knowledge to help the (still) GSF file some papers with the State of New York. We can barter — please contact us.
- 🍷 **REPRINTS:** We no longer want to carry the same reprints that we have for the past 6 years. Time for new ones, updated in interest and information. Order now. Please send any information: article/report/bulletin for us to distribute at cost. If we can't steal it, we'll contact the publisher for permission.
- 🍷 **Congratulations State Fair Winners:** GSF members who received BLUE RIBBONS for their entries of garlic before judges: Jennie Roof-Brown (South Carolina), Marty Horvat (Pennsylvania), Ron Antolini (New York) and year #2 for Tony Sarmiento (Maryland). Any other members like to come forward? We can't recognize your efforts if we don't know about them.
- 🍷 **NOTE OF THE ABOVE:** Next *Press* will reveal Tony's 10 Great Secrets to Blue Ribbon Garlic.
- 🍷 **ECONOMIC WORKSHEET** information will be mailed and in the next *Press*. We didn't make October, but winter's here and it will be completed soon. Keep track of all time and materials spent preparing and fitting ground and the amount of garlic and hours planting on your knees or otherwise.
- 🍷 **SEED REQUESTS:** Two major newspapers (NY Times & Detroit Free Press) carried GSF stories and interviews resulting in over 600 copies of our seed list going out (68 requests in one day!).
- 🍷 Still looking for **REGIONAL CONTACTS** for the GSF. Let us know if you're interested.
- 🍷 **THANK YOU:** Fred Schmeltzer, Clair Sue and Gary Price, Bob Dunkel and others who helped out in Saugerties. We grossed \$2,100 over the two days!
- 🍷 **SAUGERTIES '96:** September 28-29, 2-Day Festival!
- 🍷 **ARTISTS:** We continue to look for original work that illustrates the untamed power, the lust, passion, and bad breath that were all doing this for! A sketch, photograph, in oils or ink, cartoon, ad graphic or business card — what'a you got?
- 🍷 **1996** means we're 10 years old and planning a gala Anniversary *Press* to match the occasion! Submissions of testimonials, donations of money, ads, abusive angry letters, suggestions and well wishes are requested. Put Anniversary on your envelope. Yes, we've actually been doing this bullshit for 10 years!
- 🍷 **NEWSWEEK** 11/6/95 issue, page 65, "Sex, Lies, and Garlic," by Jean Seligmann and Geoffrey Cowley, two authors who either need to pull their collective head out of the sand or enjoy an herbal enema. I see nothing wrong in connecting our favorite herb to sex, but lies ...? In the 48 column inches of the story (with 2 fancy graphics, ½ page sidebar on "Herbal Ecstasy," and a ¾ page chart) 2" are related to legitimate medical and National Cancer Institute studies on the benefits of garlic.
- 🍷 **DO YOU KNOW** of any other single herb or vegetable or fruit organization as the GSF with a newsletter like the *Press*? Please let me know.
- 🍷 **NEXT PRESS:** A new product review (we ran out of worms), the Garlic Hot Line, mesh bags, worksheet, some tough questions to "Ask Alice," and once again I'll try to put together my reports of the diet of women in Iowa and the comparison of garlic to dog farts.

THE STINKY SIDE OF HISTORY

Sherlock Holmes and his accomplice Dr. Watson are well known for their investigative adventures in solving many baffling crimes. Did you know they were also garlic lovers? In their travels around England and, even moreso on the continent of Europe, they would notate certain unique varieties or cultivars of garlic, shallots and even onions. This eventually led to a common misconception of a term that they are often associated with. As each new strain was found, Sherlock would turn to his partner and say, "Allium entry my dear Watson," and the rest is history.



OUT OF MY HEAD

Bob Dunkel

It began in the most ideal of conditions, warm winds from the west and a crumbly soft friable soil ready for planting. This was Columbus Day in Upstate N.Y. and looking at the 8000 row-feet lying there ready I was excited. By Veterans Day things had changed, as I was up to my knees in mud and crawling in this brown goo, after slowly working to open up the long rows with my pogo stock, and hand-raking to cover. Three days after I finished plugging in the last clove, we got hit with 18" of wet and heavy snow.

I love this time of year! Make no mistake about it, in spite of what changes inevitably arrive, there is great consolation in the sleep that finally comes when long work ends. If the year was a clock, no doubt autumn runs from 3-6 o'clock, falling to that bottom point at winter solstice, from whence the day's length begins again a slow rise to the noon of summer's longest day. Gravity takes command now, and all of us surely feel the tug of time pulling us back to our roots. Families gather to celebrate the harvest and share with one another and finally there is time for reflection and the quiet dispensation that lies ahead and promises rest and recovery before the sap rises again in all of us.

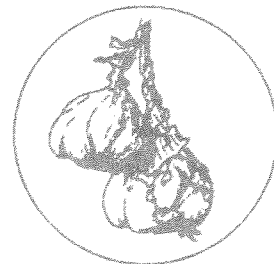
Perhaps where some of you live it is not so easy to sense the changes that time and weather bring, and so I apologize if my seasonal diatribe seems a bit much. You must admit, however, that as life cycles on we are all catapulted into a morrow that seems hauntingly familiar and yet oh so new. Regardless of where you are, I would like to think we have all been on our knees one last time before bedding down for winter. Surely, there is much to give thanks for and still "miles to go before we sleep." The GSF wants each and every one of you to know how indispensable you all are in our quest to repopulate the world with droves of cloves. Like Johnny Appleseed, we should all put a pot on our heads and spread the gospel of garlic, planting as we go the seeds to grow, with the knowledge that health is the only wealth and we are all so rich!

The Garlic Press is produced seasonally for and by members of the Garlic Seed Foundation. Membership in the GSF is \$10 per year and includes this newsletter and reduced rates at official functions. All submissions for *The Garlic Press* should be sent to the editor, and are published at the discretion of the editor and dependent on available space and the relevancy of each issue's theme. Please address all correspondence of newsletter value to Bob Dunkel, 2079 Washburn Rd., Stanley, NY 14561. (716) 526-5779 evenings, please.

**DEADLINE FOR NEXT ISSUE —
JANUARY 15, 1996**

The Dream Weaver

While trees have loosened all their leaves
To warm their trunks in time of freeze
Quietly resting, 'neath the snow
Not yet sleeping roots still grow
Our cloves are snug and nestled down
And nodding off in icy ground
'Till temperatures issue out a cry
And nascent moon sings lullaby:
While seasons ebb and seasons flow
Come winter night the dreams aglow
Will light the caverns hidden deep
And only then begins the sleep
Dreams unruly and wild with hope
Of springtime rains, a gentle slope
A nourishing sun in pledged return
This and more these cloves will yearn
For frozen in their frozen dream
There is a figure, so serene
With gentle hands that tucked in tight
These little heads and said "Good Night!"
And whispers on a thoughtful prayer
To calm and guide them lying there
'Tis you! 'Tis you! that's left to grow
There's a part of you in every row
We are all connected, dare say naught
As together, we unfold the plot.
'Till bulbs will light the fields of green
And leaves return to set the scene
This tapestry of soil and blood
On bended knees with hands of mud
We've woven forth, we'll weave once more
When Springtime knocks upon our door
For now though rest in gentle sleep
Counting cloves instead of sheep!



Coping With Weeds Organically *[continued from page 1]*

help bring the situation under control. A cover crop managed as a sod that is mowed and allowed to regrow may better suppress annual weeds, while covers that are tilled in and then re-seeded may be better for disrupting perennial weeds.

Localizing Resources is a simple but elegant way to suppress weeds. It involves placement of inputs like fertilizers and water where they benefit crops but not weeds. Rather than broadcasting, soluble fertilizers should be banded and sidedressed as much as possible. Water should be applied only to the crop row, by drip or furrow irrigation, where feasible.

Transplanting gives crops a jump on weeds because they can get to available resources first. When transplanting, it's also easy to concentrate water and fertility resources in the vicinity of single crop plants.

Mulching is a great means of weed suppression, and offers other benefits such as soil moisture conservation. Although organic mulches like straw, sawdust, leaves, etc. are perhaps the most environmentally correct mulches, they slow the spring warming of soil compared to bare ground or plastic mulches, reducing the early growth of many crops. Plastic mulches speed the warming of soil, promoting crop growth. Clear mulch heats the soil more than other plastics, but it stimulates weeds along with the crop. Pigmented plastics suppress weeds to varying degrees. Black is the most suppressive plastic mulch, as it blocks all light from the soil. The selective wavelength mulches, such as the blue-green IRT-76 and Climagro mulches or the brown AI-OR mulch, provide varying degrees of weed suppression while heating the soil more than black mulch. They are most applicable to heat-loving crops that produce enough canopy to suppress weeds on their own later in the season, such as melons. Photodegradable mulches such as Plasti-gone and Biolan have been developed in an attempt to alleviate the plastic disposal problem. These deteriorate more rapidly than other plastics when exposed to sunlight, leaving less plastic residue at the end of the season.

Cultivation of vegetables is essential when the use of herbicides and/or mulches is to be minimized or eliminated. The best time to cultivate depends on the size of weed that your equipment is most suited to, as well as to the stage of crop development that is most sensitive to weed pressure. In general, weeds

are most effectively cultivated shortly after they germinate or emerge. The challenge is to time cultivation around field preparation, irrigation schedules, cover crops and, of course, weather. A wide variety of cultivation equipment is used by vegetable growers. Here is a partial list, with some name brands in parentheses.

Rotovators (Howard, Befco, Maschio, Ferguson, Bush Hog) are PTO-driven rototillers normally used to prepare soil for planting. They provide aggressive weed control before planting and between wide-spaced rows. Depth should be set very shallow for control of small weeds, to avoid bringing up seeds from deep in the soil. They work well under many soil conditions, but can damage soil structure with repeated use.

Multivators (Maschio, Befco, Ferguson, Sovema) have independent PTO-driven rotovator units mounted on a tool-bar so they can be adjusted to row spacing. Used for aggressive between-row cultivation. Heavy-duty models handle rocky or hard soil, and can be used to strip-till, leaving sod between rows. Optional ridgers will move soil into the row.

Rolling cultivators (Lilliston, BHC) have gangs of slicer-tine "spiders" that are fully adjustable, toolbar-mounted and ground-driven. For cultivating between rows, or to cultivate wide areas if gangs are overlapped. The number of gangs grouped together determines cultivation width. Soil can be thrown into row to bury small weeds or to form hills, depending on angle of gangs. Work best on friable soils with little residue. Options include fertilizer attachment and crop shields.

Rotary Hoes (Yetter, Deere) have many narrowly-spaced metal shells each with about 16 curved teeth that work only the surface of the soil. Used within the first 2 or 3 weeks of planting on non-tender crops like corn or beans, they destroy weeds that have just germinated. Ground-driven, spring-loaded wheels do little damage to the crop. Work well at high speeds on dry, rock-free soils with little residue. Rear mounted, 15- to 40-foot widths.

Sweep cultivators and discs mount on a toolbar and cultivate between rows, moving some soil into the row. Trip shanks or springs let them move around rocks. Good for tiller weeds and a variety of soil conditions.

S-tine or Danish 5-tine cultivators have groups of curved metal shanks designed to break up the soil while destroying shallow-rooted weeds. Can be grouped to work between rows or in some cases

overlapped and used like a harrow. Attaching sweeps to the shanks will increase soil movement and weeding. Useful under many soil conditions.

Basket weeders (Buddingh) are high-speed, between-row cultivators good for control of small weeds in narrow rows when crop is small. They work the soil surface, and do not move soil into the row. Do not work well in hard or rocky soil. Custom made for a given row spacing, not adjustable. Available in 2 to 6-row units. Front-mount, 3-point hitch or belly-mount.

Finger weeders (Buddingh) scuff the soil and work it into the row around the plants using rubber and steel sets of "fingers" that can also hill a little. Good for widely spaced rows, at least 3 feet apart. Work best on small weeds in dry, friable soil with few rocks, no residues.

Spring-hoe and Spyder weeders (Bezzarides) spring-loaded blades disturb soil around base of plants. Ground-driven spyder wheel has staggered teeth in uneven pattern that breaks clods and throws soil into row. Toolbar-mounted. Use units together, separately or in conjunction with other cultivators.

Spring-tine weeder (Lely) is sold as a turf de-thatcher but can be used like a rotary hoe, running over a small crop to remove just-germinated weeds. Tine tension is adjustable, wide span of tool makes cultivation quick. Works best in friable soils free of rocks, when weather allows weeds to dry out on soil surface after uprooting.

Wiggle hoe (Friday) requires one driver plus one operator per row of unit to maneuver the handles that guide the two shanks around the plants in the row. Available as robotic with an electronic eye that replaces the need for manual control.

Flame weeders are not widely available, but a few growers have obtained them from Europe or have modified bumer kits to meet their needs. Used for stale-seedbed weed control before planting small-seeded crops and again just before the crop emerges. Weeds are injured by brief exposure to propane flame passing quickly over the soil surface.

Hand-held hoes are an important piece of equipment that should feel comfortable to the user, in terms of angle and weight. The blade should be kept sharp. Rounded corners help protect shallow-rooted crops.

Allelopathy is the chemical suppression of one plant by another. Although well-documented, it is not a principles that is widely put into practice intentionally,
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Coping With Weeds Organically *[continued]*

Research suggests that leaving the dead residue of small grains (rye, oats, etc.) on the surface of the soil can suppress the establishment of some weeds. The effect is probably not very long-lasting, and once residues are incorporated the dilution and decomposition of allelochemicals probably negates the effect.

Night Tillage may be an innovative way to manage weed germination. Research conducted in Germany indicates tillage in the absence of light does not stimulate photo-sensitive weed seeds to germinate. Large-seeded weeds, and crops, germinate in the light or dark, but small seeds tend to require some exposure to light before they will germinate. Thus, night-time tillage can avoid causing weed seeds to germinate when they are brought to the soil surface and then reburied. In side-by-side strips described in one study, ground cover by weeds was 80% in plots worked during the day versus only 2% in plots worked at night! The strategy proposed is to carry out early cultivations such as plowing on bright days to provoke a large flush of emerging weeds in the next 4 weeks, reducing the weed seed bank. Subsequent soil disturbances, such as planting and cultivation of crops should be done in the dark, at least one hour after sunset and before sunrise. Avoid all light pollution, including tractor headlights or other light visible to the human eye. Use of a military-type infrared scope for the driver, combined with an infrared spotlight or a searchlight with a short-wave cutoff filter is recommended. Cloudy skies at night are preferable, as light levels during cultivation should be as low as possible.

Some Weed Identification References:

Selected Weeds of the United States, USDA, Agricultural Handbook No. 366, U.S. Government Printing Office, Washington, DC.

Weeds of the Northeast: Aids to Identification by Basal-Leaf Characteristics. Phillips and Fisher, University of Delaware, Newark, DE.

Common Weed Seedlings of the United States and Canada, Cooperative Extension, University of Georgia, Athens, GA.

Weeds of the North Central States, Circular 718, University of Illinois, Ag. Expt. Station, Urbana, IL.

A Field Guide to Wildflowers, Peterson and McKenny, Houghton Mifflin Co., Boston, MA.



GROWER'S PROFILE **A Testament of Experiences, Treatments, & Band-Aids**

by Bob Nogash, Gillie Farms, Camillus, NY

After many years of doing our "Garlic" thing, I've decided it was time to share my tales. Over the past five years of trials and errors, I've compiled some interesting observations and tasty crops. I can only hope my experiences can educate and inspire other garlic lovers & growers. I caught the garlic bug after a 2-year attempt to run a grape juice plant in the Finger Lakes. The juice plant was not quite a success, but was a strong incentive to get involved with growing organically. Garlic proved to be the perfect crop, because of its natural immunities to most insects, its medical qualities, interesting history, and damn good taste.

Varieties: At Gillie Farms we are growing the Artichoke and Rocambole varieties. We find them so delightful because of their strong "hot" flavor. The Artichoke is unusual as it has an oblong profile. Even more unique is the number of cloves in each bulb, varying from three to as many as eight. The Rocambole has its own appeal with its very tight and thick clove skin. My customers truly appreciate the peeling ease of the Rocambole. To peel this variety, all that is needed is a quick blow with the face of the knife. The "western" grown garlic varieties have a thin, papery skin that is sticky and annoying to peel. Also distinctive of our Artichoke garlic is its predominant "red" coloring. The Rocambole radiates a lesser shade of red.

Field Prep: After purchasing an old Ford tractor and a brand new 6' PTO-driven "Rototiller," the tiller was our most effective tool for "fitting" the soil before planting. A disadvantage with tillers is that they usually require several passes over the field (2-3) at various intervals (days) to complete the preparation. I observed other farmers using a single pass with a moldboard in conjunction with one or two disk passes. However, not to complicate the observations with our tiller, a better cover cropping program could compliment ours or any soil preparation. Hopefully this fall and spring we shall have time to implement this program.

Planting: We initially started our planting by hand, with trenches created with a garden hoe dragged down the field in an attempted straight line. This proves to be adequate for the complimentary job of "hand" cultivation or small hand-tool weeding. If you plan on using a mechanical cultivation technique such as a tractor, you need to make sure those rows are very straight and evenly spaced. Tractors with a cultivator cannot distinguish a crooked row of garlic from a crooked row of weeds.

Presently we use a "dibble board" which consists of three rows of wooden spikes spaced 18 inches apart at 6" spacings. The dibble board is 8 feet long and attaches to the tractor's 3 pt. hitch. The dibble board is dropped behind the tractor and, with a little help from workers (the dibble dance), is enticed into the ground to create a nice concise set of three rows. The dibble board is lifted and the tractor moves forward 8 feet and the board again is dropped, creating straight rows and an interesting show for the neighbors. After the holes are punched, we place the garlic cloves into the holes and then, with a rake or hoe, sweep soil up into mounded rows. The typical planting depth is initially 5-6 inches. However, after weather compaction it averages 2 inches. Planting our 1/4 acre can be accomplished in 10 hours. Weather conditions, worker resources and attitudes can easily alter our planting schedule.

Winter: We do not mulch. We have an abundant supply of natural warmth from underground streams in our valley. They provide sufficient heat to prevent the ground from freezing until late January or February, and then only to a depth of 6 inches. We have had some winters with little ground freeze, and the snow pack has provided an excellent cover from wind and pounding winter rains.

Spring: We have our own Frankenstein creation! While most areas remain bleak, snow-covered, or with compressed leaves from wind-blown trees and flattened brown soil, the garlic is revitalizing. After some warmer sun, the garlic is the first to emerge from the ground and remains the sole growth until late April and early May. Presently, our tractor does not allow us to enter the field for early spring cultivation because of the proximity of the rear wheel to the two outer rows of the three rows planted beneath the tractor. Our fear is that the tractor weight on the spring ground would heave the close garlic rows and disturb their growth, or I would spend another long afternoon with the "come along."

Harvesting: Our method of getting garlic out of the ground consists of dragging a narrow shank cultivator tooth on each side of a garlic row to loosen the soil. We then

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Grower Profile

[continued]

pull the loosened bulbs from the soil and pile them onto a wagon drawn by a tractor. Our direct garlic extraction (from the soil) technique needs room for improvement. In the near future we are looking for a moldboard arrangement that could flop the garlic rows out of the soil.

Cleaning: Right from the field the garlic is washed and dried. First each bulb is blasted with a jet of water to remove soil from its root stems. Then each bulb is inspected for damaged skins, which are removed. Another rinse in a bucket of clean water is performed to remove any loose dirt that may be lingering. The bulbs are then placed on a 1-inch chicken wire rack to dry. The racks we use are 8 feet by 4 feet. The bulbs are placed with their roots at the center of the 4-foot rack and with their leaves hanging over the rack edge. Two rows are formed down the length of the rack and usually several layers (2-3) in height of garlics are in a row. The bulbs are allowed to dry at least one or two days outside in the sun to allow for good drying of any water and a kind of "Solar serialization."

Curing: After the bulbs are dry, they are hung upside down in "hanging bunches" for "curing." The hanging bunches are created by placing a gathering of bulbs (20-30) into a net/mesh bag (onion bags) and allowing the garlic stems and leaves to protrude from the bag's throat. The bag's drawstring is tightened around the stems to hold the bulbs in the bag and then the bag is hung upside down, which allows the leaves to remain straight during the remaining curing process.

Curing is accomplished by hanging the upside down bags from rafters in a hay barn. The barn provides protection from rain, direct sun (which can "crystallize garlic"), and also provides a "hot cure," which we feel helps kill off any molds or fungus. Over the years our incidence of garlic-related fungus has decreased, both from culling and hot curing, an assimilation of the California methods.

Cultivation: The jury is still out on this area of techniques because weed control is a difficult situation in an organically grown crop. We currently use a "harrow" toothed, multi-row, cultivator and sometimes use "crabgrass" or "shovel" tools on the harrows. Cultivation is not only a "method" important technique, but a "timing" technique as you get to know your weed problems and their growth cycles. In some seasons we have experienced little problem with leaving the weeds with one or no passes from the cultivator. Seasonally, too, the weeds change, as well as the field used when crop rotation is employed as we do. Some success was seen this year as we used composted horse manure (sawdust based) in other crops and may employ this into the garlic.

Closing: Some insight for our methods can be explained by our past experiences. The water cleaning method was decided upon after trying the "pick, dry & brush" cleaning method. Our soil is a silt/clay loam, and the dry soil is very hard and compacted if allowed to dry on the garlic before cleaning. The brushing of the dried soil became too difficult to deal with and increased skin loss was noticed during wet harvest seasons.

The hot curing of the bulbs was again another innovation from wet season harvests, but also is seen as an example of the California "sunny field" drying method.

Our garlic flavor, or "hotness" as many people refer to our garlic flavor, we attribute to soil conditions that are unique to our land. Just as grapes, such as the French method of applying regional accreditation to their wines, garlic must also be categorized likewise. We see this form of distinction in many crops: "Vidalia Onions," "upland potatoes," "muck raised," etc. So varietal qualities, not alone soil or regional characterization, are just as important to your crop.

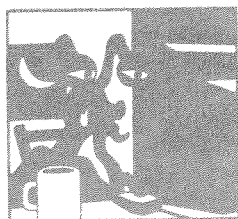
ON RAMP TO BIG BULB CITY ...

Thanks to one of our members, Tony Sarmiento of Silver Springs, Maryland, we have a traveller's advisory for the superinformation highway. Yes, it's garlic growing on the Internet! There's a dead bulb in the middle of the highway and it's stinkin' to high heaven!

Rudimentary, at this point, there is a garlic page out there, which provides some beginners clues to growing, and more importantly, opens a new door for communication about this crop we all tend. Oh my! if only smellavision were at our fingertips as easily as this, we'd have all we ever would need.

In cyberjargon: the reviewers and users at "Point Now" have voted The Garlic Page one of the top five percent of all web sites. So if you're ready, willing, and able, get those fingers ready to dig into this new turf.

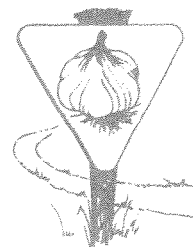
GARLIC GROWING RESOURCES ON THE INTERNET

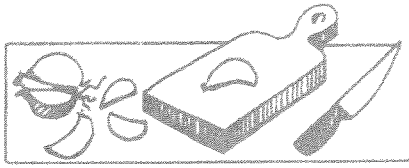


This Page Stinks! (Garlic Page)
<http://broadcast.com/garlic/index.htm> 1

GardenNet's Guide to Internet Resources
<http://www.olympus.net/gardens/welcome.htm> 1

RotWeb (about Composting)
http://net.indra.com/~topsoil/compost_menu.htm 1





Recipes

SWISS CHARD & POTATOES, ITALIAN STYLE

From Janet Schmelzer, New Berlin, NY

Quantities are approximate. Play it by ear.

- 1 can (28 oz.) crushed tomatoes or chopped
- 2 lb. Swiss Chard, or a very large bunch
- 5 medium potatoes, about 1½ lb. cut into chunks
- 5 cloves garlic, or more, crushed or chopped
- ¼ tsp. crushed dried red pepper
- ½ tsp. Oregano
- ½ cup Parmesan Cheese
- 3 tablespoons Olive Oil
- 1 cup Chicken Broth - may be canned or from cube

Boil a large pot of water and blanch cut-up chard. Cook potatoes until just tender; drain.

In large non-reactive pot, heat oil and sauté red pepper flakes a bit, then add garlic and sauté until lightly colored. Stir in tomatoes and oregano and cook until thickened a bit. Add chard and potatoes and simmer on very low heat until you are ready to eat it.

Optional: about 3 Italian sausage links, sweet or hot. Skin and chop them and brown in a separate pan first; drain well. Add them with chard and potatoes, but cook mixture longer if sausage is used.

DOUBLE BROCCOLI (BROCCOLI WITH BROCCOLI PESTO)

From Paula Simmons Green

Cooked Broccoli: Any amount. Cook briefly (in microwave, by boiling, or steaming), then refresh in cold water to keep its bright green color, then recook until tender-crisp. Serve with Broccoli Pesto. Recipe follows.

Broccoli Pesto

- 2 cups broccoli florets, chopped
- 10 cloves garlic, peeled and chopped in half
- ½ cup olive or grape seed oil
- ⅓ cup lemon juice
- ¾ cup pine nuts, ground in mini-chopper
- ½ cup grated Parmesan
- salt and pepper to taste

Zoom first four ingredients in blender or food processor, scraping down sides as needed. Stir in ground pine nuts and Parmesan. Keeps well refrigerated.

Broccoli Pesto is wonderful on cooked broccoli, but also good on pasta, terrific salad dressing when blended 50/50 with yogurt. A most useful mixture for many uses.

GARLIC JELLY (CANNING RECIPE)

This unusual jelly can be used as a condiment. Simply add it to a meat marinade or brush it on a roast while cooking. The combination of ingredients results in an attractive light green color — no food coloring needed!

- ¼ pound peeled garlic cloves
- 2 cups white vinegar (labeled 5% acidity)
- 5 cups sugar
- 1 3-ounce pouch liquid pectin

In a food processor or blender, blend garlic and ½ cup vinegar until smooth. In 6- to 8-quart saucepan, combine garlic mixture, remaining 1½ cups vinegar and sugar. Over high heat, bring mixture to a boil, stirring constantly. Quickly add pectin, return to a boil and boil hard for 1 minute, stirring constantly. Remove from heat. Immediately fill box, sterilized half-pint jars with jelly, leaving ¼-inch headspace. Wipe jar tops and threads clean. Place hot lids on jars and apply screw bands firmly. Process in Boiling Water Canner for 5 minutes.

Yield: 5 half-pints.

GARLIC ROASTED NEW POTATOES

- 1½ pounds new potatoes, washed
- 1 whole head garlic
- Around ⅔ cup olive oil
- Salt and pepper
- 8 bay leaves
- Springs of thyme

Use a paring knife to cut a strip from around the middle of each potato.

Separate the garlic into cloves, but leave skins on each clove. Place potatoes and garlic in a gratin dish. Add oil and seasoning and stir to coat ingredients.

Arrange bay leaves and thyme amid the potatoes. Bake at 350°F for one hour.

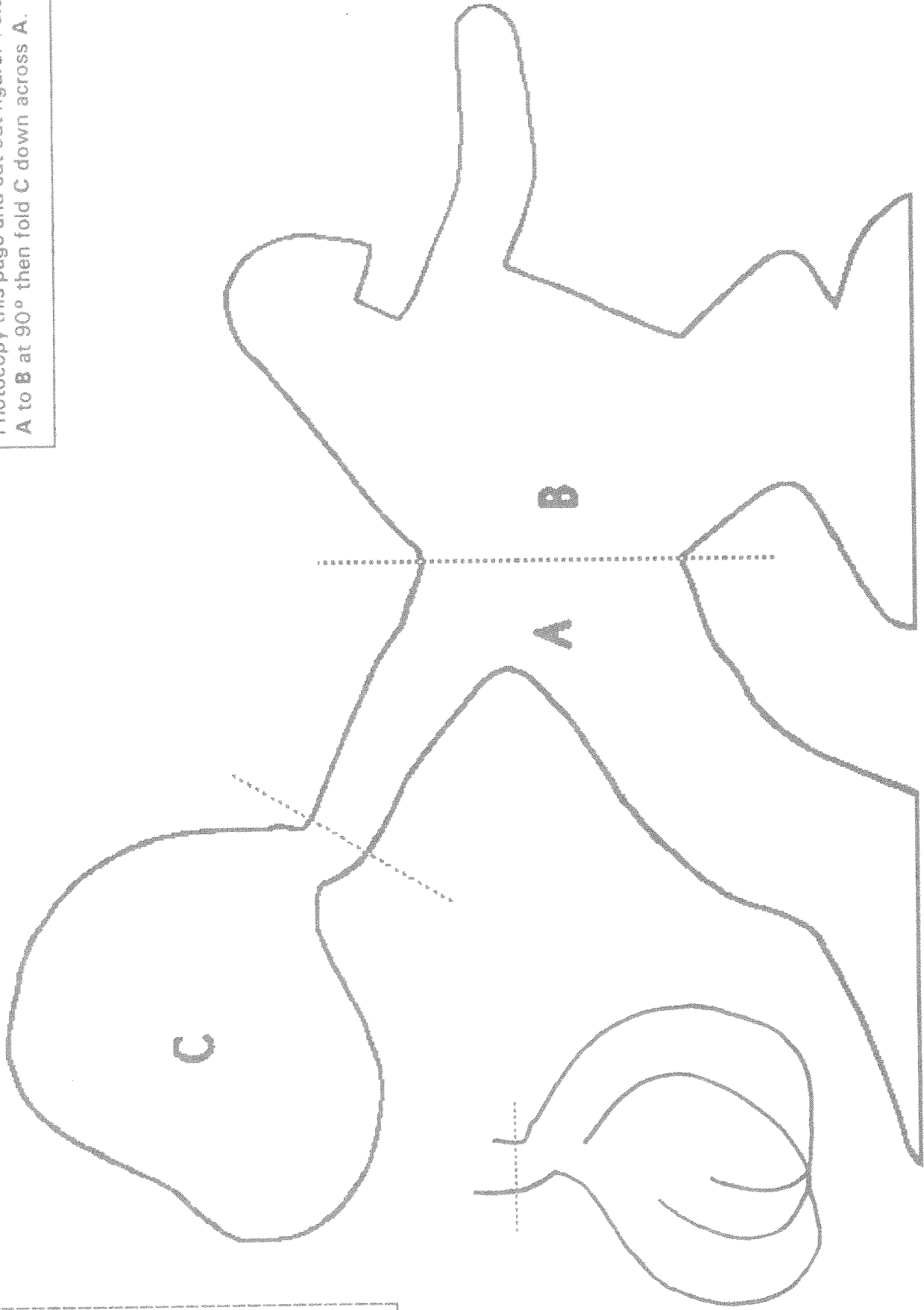
To eat, squeeze soft garlic from skins and mash, along with oil, into potatoes. Makes 4 to 6 servings.



SUGGESTIONS: Heavier/stiffer papers work best. Use appropriate color. Draw clove lines on garlic face that faces front.

GARLIC HOLIDAY CARD

Photocopy this page and cut out figure. Fold A to B at 90° then fold C down across A.



Peaceful Joyous Healthy Holiday Wishes from Dunk and David

FESTIVAL REPORTS

Hudson Valley Garlic Festival Cantine Field, Saugerties, NY September 28 & 29, 1996

The seventh annual Hudson Valley Garlic Festival played to record-breaking crowds on Sunday, September 24, 1995. An estimated 45,000 people streamed into the mid-Hudson Valley bringing traffic in the area to a standstill. The area police agreed that it was beginning to look like Woodstock '94.

By 3:00 in the afternoon, many of the food vendors were sold out of food, the craft and business vendors as well as the Garlic farmers all enjoyed a very brisk day of business. Bob Yerick, one of the Festival organizers, said, "I received phone calls from a number of people who were just not able to make it to the Festival grounds. Thank goodness, they were not irate - yet - but were just asking me to do something about the traffic."

Nippon Television Network sent a three-person crew and filmed the entire day of which a three-minute segment aired in Japan on Tuesday, September 26th during their version of "Good Morning America." Pat Reppert, who is in charge of Publicity and Public Relations for the Festival, said, "We were fortunate enough to get really good coverage nationally with Willard Scott, the indomitable weatherman on the "Today Show" flashing the official poster and the New York Times had two short articles. This always sends hordes of people up our way."

The Saugerties Kiwanis Club wishes to express its appreciation to the Garlic Seed Foundation and the garlic growers who helped to make the Festival a big success. The Garlic Braid was a resounding success, and many thanks to all of you who donated garlic and helped to braid it. Thanks too to Bob Yerina for his enthusiasm in teaching people the art of braiding garlic, Chadd Weaver from Weaver's Garlic Shedd in Shedd, OR, who traveled cross country to be a part of the Festival. He was one of the Garlic Lecturers, talking about "The Care and Feeding of Elephants - or How to Grow Elephant Garlic." Rod Wilson is due a big round of applause for his work in organizing the vendors, and David Stern for coordinating the many details of the Garlic Seed Foundation meeting and the Garlic Banquet. Thanks to everyone from all of us.

The Garlic Board met on Thursday, October 5th and decided to host a two-day event on Saturday and Sunday, September 28 and 29, 1996. According to Jack Wilsey, one of the Board members, "We're hoping that this will help to alleviate traffic congestion by spreading the crowds out over a two-day period." He continued, "although we've had rain in the past and it didn't affect attendance that much, this two-day window will help to eliminate the chances of a total rain-out."

Because of the increased work involved with a two-day Festival, vendor contracts will be going out earlier, so that potential problems will be able to be addressed properly.

The Garlic Festival Board:
Bob Yerick, Richard Kappler, Jack
Wilsey, Alicia McCaig and Pat Reppert

The New York City Garlic Festival

After twelve years in Los Angeles, promoters determined that New York City (NYC) was the place to hold Garlic Festival number thirteen (13).

Extensive advertising in the NYC print media, including two full pages in the Village Voice, an article published in the New York Times, promoted the New York City Garlic Festival which was held at Madison Square Garden on the weekend starting Friday evening, October 20.

On my visit to the garlic festival Friday after work, I found the space at the "Garden" decorated in a Halloween theme, with restaurants numbering about fifteen, the aroma of cooked garlic hanging invitingly in the air, and the festival sponsor, Captain Morgan Rum, offering, for a considerable price, a libation.

The Halloween theme is explained in two ways, the most obvious by the fact that Halloween is just around the corner, and that the logo for Christopher Ranch, the world's largest producer of garlic and assorted products, is a black Bat. So you can put one and one together.

As I walked around the designated demonstration/promotion space, I sampled such foods as garlic shrimp wrapped in fried Won Tons, garlic gaufrette potatoes, ginger-garlic cole slaw, penne with tomato and garlic, to name a few of the choices available.

The restaurant participation included some well-known Manhattan eateries. However, the food items being cooked and offered to the audience were very atypical of food the vast majority of people anywhere would find available. Plus, the tasting prices ranged from three to five dollars per. By the end of the evening, you could easily leave the festival both broke and hungry.

The only garlic grower in attendance was, curiously enough, Christopher Ranch. No Mr. Christopher, but many representatives of the company were on hand.

There was no fresh garlic around, but plenty of manufactured product was on display. Having a dearth of fresh garlic at a garlic festival is, to me, an oxymoron.

As a matter of fact, walking around the festival created a sense of longing for a real garlic festival like the one coordinated by my father, Gary Skoog, namely the Western New York Garlic Harvest Festival. There we see real growers selling their own product, food at reasonable prices, and considerable education of the public about the many good things garlic provides.

If a more earthy type of festival was held in NYC, it would be successful. But this particular garlic festival experience left me feeling on the empty side, a sensation not unlike what the ticket cashier's money box probably looked like.

Stephanie Skoog

FESTIVAL REPORTS (continued)

Garlic Festival Report: Batavia, NY #2

It seems like yesterday that David Stern asked me to write up something about the first annual Western New York Garlic Harvest Festival (WNYGHF). Well, here it is, one year later and time to report on Festival #2.

We saw an increase in attendance up to 1,205. This is approximately an increase of ten percent (10%) over 1994. I am very pleased with the turn out, and expect another increase for 1996.

The Genesee County Cooperative Extension, under the direction of Martin Culik, was most helpful in supporting this year's festival. Staff, equipment and facilities were made available to help organize this agriculture-focused event.

Our theme is continued education of our customers, the public. Hence we provided lectures and demonstrations; handed out to each customer a pamphlet with information about garlic; and twenty (20) growers from Western New York and Ohio talked with customers for six (6) hours at the Garlic Market. The Food Court proved to maintain its popularity, and two (2) commercial vendors offered products made with garlic.

Planning for August 10, 1996 is underway, as this is being written. If you would like more information, contact Gary Skoog, (716) 637-6586.

BULB FICTION: ALLIUM AUTOPSY - REAL THING OR HALF BAKED?

Insiders from Roswell, New Mexico have come forth to renounce claims from government spokespeople of "just another weather balloon" and seem to have testimonies of a craft that was spotted and immediately confiscated by U.S. officials upon impact in what appeared to be a crash landing. The craft appeared to look almost exactly like a huge floating bulb of artichoke garlic from beneath, with cilia-like mechanisms that dangled below. Remarkably, there are eyewitness reports and video footage of a vegetative substance that closely resembles *Allium longicuspis*, the ancient relative of modern garlic. An immediate autopsy was ordered and there was no doubt, immediately following the first incision, that some form of sulfur (a precursor of allacin?) was released, as medical officials found themselves literally knocked off their feet in what they described as an incredibly sensual and overwhelming experience. Perhaps those once-visitors to the ancient lands of Sumer and Egypt had again returned to ennoble our country with this magical healing substance we have come to call "our own!" Even Cornell scientists, from Geneva's Food Science Laboratory, admitted that today's modern genetic technology could not duplicate the impact of this sulfurous sensation and thus were hard-pressed to come up with any explanation. Perhaps this is why shortly after this discovery there was an explosion at the government facility, which destroyed the craft, as some unidentified soldier entered the room, covered his nose and instinctively lit a match

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WEED CONTROL IN COMMERCIAL GARLIC

By Keith R. Culver

I think there are four things that can have the most effect on the outcome of our garlic crop: weeds, diseases, moisture stress, and nutrient stress. Weed management can be achieved by a combination of cultural and commercial means. Diseases are primarily managed by cultural means. We can control moisture stress artificially through irrigation (an excess of natural water is a problem). We can amend nutrient availability both culturally and commercially. As more growers increase their acreage of garlic production, we have been getting more questions regarding weed control.

The first suggestion for weed control should be a cultural plan. The tool that we all have at our disposal is site selection. Proper site selection is determined by past history of weed pressure. A first-time grower would be ill-advised to select a grassy meadow for garlic. Extensive cultivation would be necessary, and competition from perennial grasses would surely add a question mark to the crop yield.

In order to select the proper site based on weed history, growers need to identify the weeds growing and understand their growth cycles in order to control them. Remember that weeds reproduce sexually (by seed) and asexually by vegetative means (by cell division), and they can be distributed by air, water and mammals. To make things worse for us, weeds can be present in dormant states that extend their existence.

Annual weeds complete their life cycle in one year and are the easiest to control. The best example is redroot pigweed. Biennial weeds make foliar growth the first year and set seed the

second year, thus taking two years to complete their life cycle. An example of a biennial weed is the common burdock. Perennial weeds are the most difficult to control because they reproduce in so many ways. Some examples by reproductive means are dandelion (by seed), nutsedge (by seed and tubers), milkweed (by seed and stolons), and quackgrass (by seed and rhizomes).

Mechanical and cultural measures should be the first choice, since they are usually the most economical, especially for small-scale growers. Practices can include mowing, burning, smothering (mulch), tillage (prior to planting and in season), crop rotation, plant population and row spacing. These methods of reducing weed pressure are fairly self-explanatory and should be implemented by all of us.

[Editor's Note: Keith goes on in his letter to recommend and advise about the use of various herbicides in his operation after stating, "Prior to this we used mulching and cultivation with great success to control our weed populations." Their operation last year, with two of them working it, grew to three acres and this was a choice they made. Anyone interested in finding out their experience with herbicides can contact them: Merrifield Garlic Merchants, R.D. 1, Box 184, Auburn, NY 13021. Cornell has also done studies with herbicides, and it has always been my editorial policy not to use this newsletter to advocate use of any substances that compromise the sustainability of the earth or the possible side effects on our own health.]