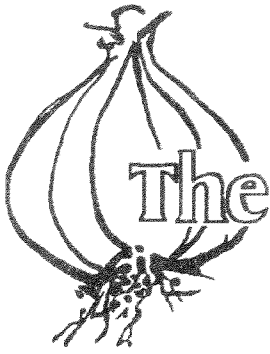
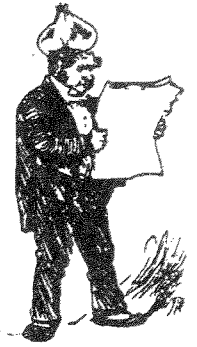


SUMMER 1996



The Garlic Press

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



#28

McCormick & Company, Inc.

by Ms. Leslie Norris, Research and Technical Development

McCormick & Co. is the largest dehydrator of garlic in the world. Evaluation of garlic at McCormick, therefore is serious business. Since we are in the business of selling the aroma and flavor experience of garlic, we must insure that our garlic products taste right. They will not be successful unless a consistent and desirable flavor profile is delivered to our customers.

Many factors affect the flavor of garlic. There are natural variations in agricultural products from year to year, variety to variety, field to field. Additionally, changes in processing parameters can alter the taste of garlic. Our consumers expect a certain flavor profile. Because chemical and physical tests cannot always predict how a product will taste to a consumer as a result of these external factors, other tools are necessary to monitor changes, thus, sensory evaluation or taste testing using scientific methods and controls has evolved.

Garlic products are rigorously tested by "trained" tasters or judges. A trained judge is an employee who has

Table 1. List of Garlic Reference Standards

Attribute	Reference
Green	Freshly cut grass
Fresh garlic	Oil of asafetida in 1.0% EtOH
Fruity Sulfur	Cantaloupe
Hydrogen Sulfide	H ₂ S
Rubbery Sulfur	Methyl allyl trisulfide @ 0.5 ppm
Musty	Alpha fenchol
Pungent	1 tsp. horseradish
Heat	Red pepper @ 0.15%
Sweet	2% sucrose solution
Metallic	0.1% ferrous sulfate
Bitter	0.07% caffeine solution

successfully completed a 14-month McCormick sensory program. The program teaches the students to describe what they are tasting in terms of its "notes." The method is referred to as Descriptive Analysis. Much like music can be broken down into notes, flavors can be broken down into chemical notes or attributes. For example, perception may be broken down into two parts: basic tastes (sweet, sour, bitter, umami) and volatiles (those chemicals that are sensed by the nose). References or standards are then applied to refine the definition so that all the panelists are "speaking the same language," and are tasting with a single reference in mind.

When our panelists taste garlic, they use the following notes to describe the flavor: green, fresh, fruity, hydrogen sulfide (boiled eggs), rubbery sulfur, musty, pungent, heat, sweet, metallic, and bitter. The standards (the chemical definition of each note) are listed in Table 1.

Once a common language has been established, the group will meet and evaluate the products by quantifying specific flavor notes or attributes.

Each descriptive panel consists of 10-12 trained panelists who taste 2 to 3 products during a panel. Panelists rate the intensity on a 15 cm line scale with 1.5 cm = threshold (barely detectable), 5 cm = slight, 10 cm = moderate, and 15 cm = strong for intensity of the specific attribute. The panel is conducted in such a way as to minimize human bias (for example, randomizing the sample presentation and evaluating under red lights to mask any appearance differences).

[continued next page]

KIWANIS CLUB of SAUGERTIES
presents

Hudson Valley Garlic Festival

SATURDAY & SUNDAY
SEPTEMBER 28 & 29, 1996
10 AM - 5 PM

CANTINE FIELD
SAUGERTIES, NY

EXIT 20 OFF THE NY STATE THRUWAY
40 MILES SOUTH OF ALBANY

FOR INFORMATION CALL 914-246-3090
OR WRITE

KIWANIS CLUB OF SAUGERTIES
P.O. BOX 433, SAUGERTIES, NY 12477

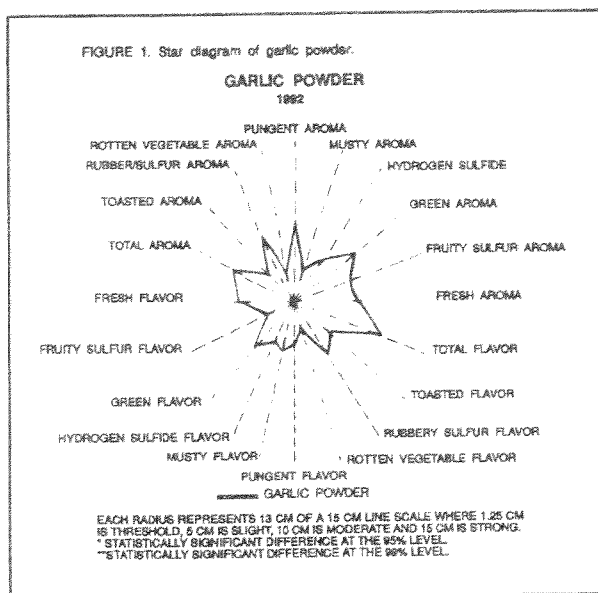
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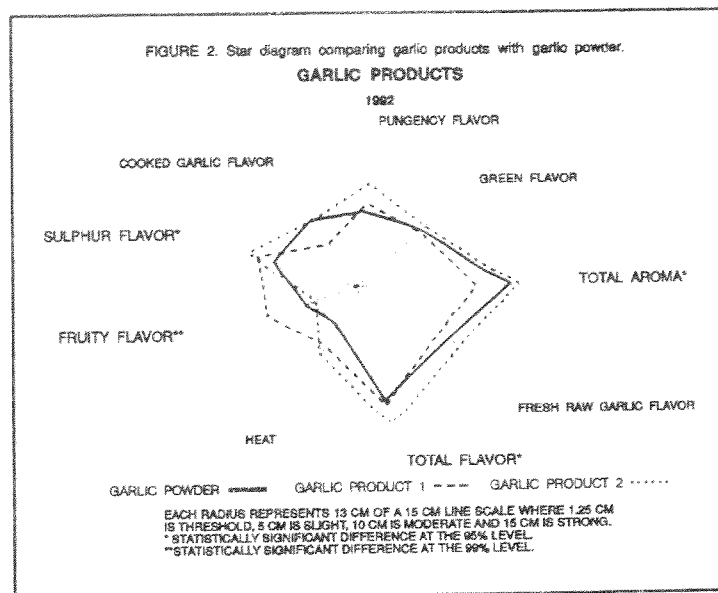


McCormick (continued)

The individual panelist ratings are compiled, and statistically analyzed using a customized data analysis program. The data are presented as a flavor profile (see Figure 1), allowing the observers to visually compare the attributes found in an item, in this case garlic powder.



Furthermore, panelists can taste multiple samples and the star diagrams can be used to illustrate the differences between samples. Figure 2 depicts the difference between two garlic products and garlic powder. As we know, "a picture is worth a thousand words."



GARLIC 101 - Bulbhead Chemistry: How & Why Garlic Works

Adapted from Paavo Airola's *The Miracle of Garlic*

Although there is plenty of empirical and clinical evidence that garlic is effective both in prevention as well as treatment of disease, scientific studies are meager as to what specific factors in garlic are responsible for these beneficial effects. It is generally considered by most researchers that the sulfur-containing compounds in garlic, especially allicin, alliin, cycroalliin, and diallyldisulphide—at least 33 such compounds isolated as of now—are the most active substances. I am sure that future studies will reveal more "unidentified factors" in garlic in addition to the factors which are presently known. For example, the famous Finnish Nobel Prize winning scientist, Dr. A. I. Virtanen, in his thorough biochemical analysis of onions, discovered 14 new beneficial substances. At present, research and clinical observations quoted previously have shown the following active factors being present in garlic (*Allium Sativum*):

- **Ajoene**, a substance discovered by Dr. Eric Block shown to prevent loss of platelets and to increase rate of restoration of platelet clotting activity.
- **Allicin**, the substance in garlic that is believed to be largely responsible for garlic's antibacterial and anti-inflammatory effects. Allicin is also the odorous factor in the garlic.
- **Alliin**, a sulfur-containing amino acid in garlic from which allicin is made by the action of the enzyme alliinase. Russian studies ascribed the antibiotic effect of garlic to its alliin content.
- **Diallyldisulphide-oxide**, a chemical compound into which allicin is changed in the system. The essential oil of garlic contains 6% allylpropyldisulphide and 60% diallyldisulphide. The cholesterol- and lipid-lowering effect of garlic is attributed to the presence of this factor.
- **Gurwitch rays**, the mitogenetic radiation factor that stimulates cell growth and has a rejuvenating stimulating effect on all body functions.
- **Anti-hemolytic factor**, responsible for its beneficial effect in the treatment of anemia. Note: this factor was proven to be present only in allicin-free garlic preparations, such as Kyolic or Leopin.
- **Anti-arthritic factor**, shown in Japanese studies at Fukuyama Hospital.
- **Sugar-regulating factor**, which makes garlic useful as an adjunct in the treatment of both diabetes and hypoglycemia.
- **Antioxidant factor**. Garlic was shown to inhibit peroxidation (rancidity) of foods, and thus, can be used as a natural preservative.
- **Anti-coagulant factor**. According to clinical studies, garlic contains effective blood anti-coagulant factors.
- **Allithiamine**. Garlic is an excellent source of biologically active compounds of vitamin B₁. Japanese researchers [Matsukawa et al.] have isolated from garlic a substance, allithiamine, which is formed by the action of vitamin B₁ on alliin. This component has been found to have beneficial therapeutic properties and to be effective, among other things, in preventing and curing beriberi.
- **Selenium**. Garlic is also an excellent source of biologically active selenium, and it is believed that garlic's anti-atherosclerotic property (preventing platelet adhesion and clot formation) is due to its high selenium content. Selenium also normalizes blood pressure and has been shown to protect against infections.

Director's Notes

David Stern



The walnuts are already shedding their leaves from the hedge rows into the fields and the fall colors of yellow (hawkweed and rag weed), white (Shastas and Queen Ann's Lace), blue (sweet peas and chicory), red/purple (clover and asters) are here again. After its year here on this farm, the garlic starts to leave in braids and bags by car and post and UPS. Festivals are all about and the mail starts to double in numbers. Already my thoughts are to cracking and planting, firewood and skiing.

This year's field will be a special one, for it was the first field I converted into organic production in 1979 and in asparagus until after harvest 1995. Then it was plowed and chiseled, 3 tons of lime spread, and fall-planted to rye/vetch, which I chopped off for compost this summer. Then, 20 8½-ton loads of compost and some Sol•Po•mag were disced in. For the past several years I've experimented with early September planting of oats in the field, which are lightly disced prior to planting. The disc-opener easily slides the dirt and oats aside to create the furrow. Post planting I disc roll the dirt back over the cloves. The oats look like hell—mashed, crushed, trampled, squashed—but they live and the field returns green. Erosion control: bio mass that winter kills and won't plug up cultivators. I don't like the look or feel of bare earth in November. Life keeps the earth warm. Erosion is a major problem; we must take better care of our soils, and it's part of our contract with this earth.

Test your soils, balance your pH and nutrients, increase organic matter and build a solid foundation for a good crop in '97. Farmer or gardener, it makes no difference in the size of your land. The principles are the same. Probably, the pH is the single most important consideration next to organic matter and Cation Exchange Capacity (CEC).

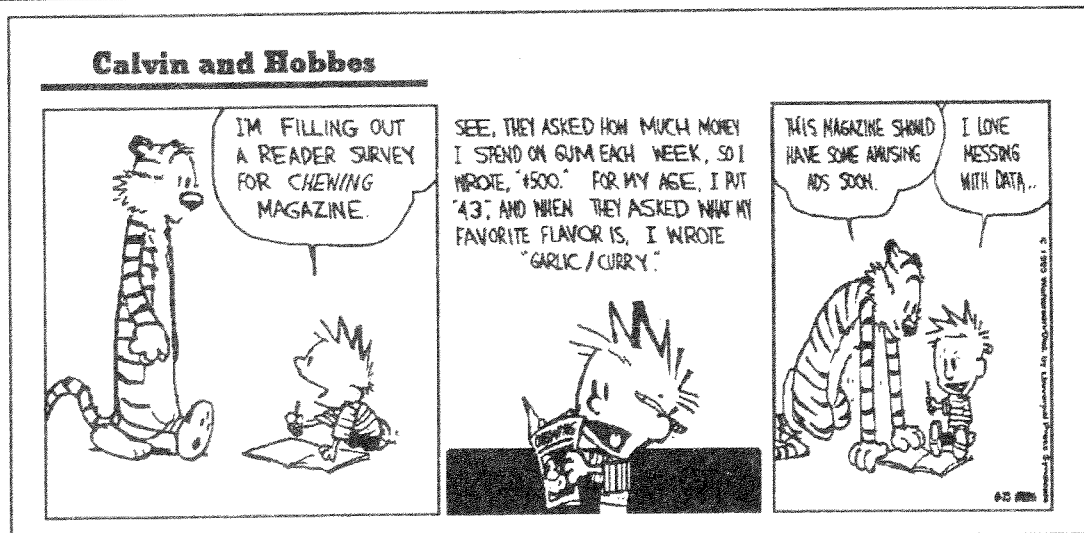
Already, I've enjoyed getting off the farm for the D.C. and Western New York Festivals, and I'm looking forward to Saugerties (Hudson Valley) and Virginia Celebrations. As I've said many times in this space, "I'd rather shake your hand than read your letters." It will be my first time to the Virginia Clan gathering, and I'm looking forward to learning from those folks.

In closing I take this opportunity to say goodbye to Pat Lyons D'Auria, a strong woman farmer, wife and mom, teacher, and my friend. She and Joe grew vegetables on their farm in the Catskill Mountains. She was harvesting her garlic as she watched the storm clouds roll into the foothills. They found her body in the field. Lightening had struck the ground near where she was working and travelled through the garlic into her body. At her funeral I walked into that garlic field to try to feel her presence and ponder all the factors that brought that event to happen, and all the times I've worked on my knees watching the storms race in off Ontario. I am not able to understand, only accept, and feel my selfish sadness of loss, and hope that Pat has found a better place to be.

Garlic Apprentice Positions

For many years the organic community has relied on the ancient tradition of apprenticeship to don knowledge. This farm has had dozens over the years. Some of you have asked if you could come help plant or harvest or look at machinery, or asked how I accomplish a particular task of the many it takes to produce this stinking stuff. It's a fair trade: your labor for my experience.

So, if you're looking for hands-on garlic experience, or you're offering to teach others, let's use the GSF to communicate. Write to us, putting "apprenticeship" on your envelope, and we'll put whatever we get in the *Press*. Put in as much information as needed on availability, housing, pay, experience, specific skills sought, etc., for us to describe to others. [D.S.]



ALLIO-FILE

- 🍷 Post Harvest trimming and dry down: Experiments in South America indicated a decreased weight loss in storage garlic. Our research has shown up to a 25% weight loss within 6 weeks post harvest with conventional dry down techniques. The Brazilian researchers find stem and root trimming immediately post harvest gave you more to sell. Our research found that opening (1" above bulb) the neck increased neck rot as compared to letting the necks dry down/shrink/collapse by natural and/or "forced-air"/"dehumidified" systems. Most of the garlic grown in Brazil is the industrial CA/China softneck, on dry lands using irrigation, high cost inputs of fertilizers and pesticides, on large monocropped factory farms, storing garlic in CA for many months, with "cheap"/"low-cost" labor. Most of us do not. How about some of you plan, experiment and write-up your findings for the *Press*!
- 🍷 Correction: Okay, Okay, we goofed! The key was incorrect on the crossword puzzle (*Press* #27) on #45 across "CLOVE", not "CLONE" is the correct answer.
- 🍷 Excellent Article on garlic as a pesticide, reviewing current research on preparation, pests, pathogens, and beneficials. *Common Sense Pest Controls*, Box 7414, Berkley, CA 94707, #XII(3), Summer 1996.
- 🍷 Blue Moon (Kentucky) Gartini: 2-3 oz. 90° Gin from the freezer, 5 drops Vermouth, 12-20 pickled garlics. **Notice**: Abstain from operating machinery or making important decisions for at least 12 hours. Follow immediately with dinner.
- 🍷 Mesh Tubing: Contact Dan Juba, General Bag in Cleveland, OH, 1-800-837-9396 - Has a selection of weights, colors, sizes, and roll sizes. Many of you have asked for larger quantities than we have. Any other suppliers?
- 🍷 Internet Hook-Ups: One kind member offered to help hotwire us up on the highway and, by foolish error, I've misplaced his/her name and telephone number. Please reconnect! Contact GSF at 14542-0149 U.S.A. or "ehenderson@elcbbbs.wseo.wa.gov."
- 🍷 Winter 95-96: The reports continue to trickle in, generally a smaller size/weight harvest, more winterkill and fusarium, some disasters, but our spirits are ready to plant again. I must also note that many folks commented on the cold/wet spring (cool soils slow growth) and poor field drainage being equally unfriendly. [P.S. Most of the garlic in Indiana didn't survive.]
- 🍷 Purple Mesh Tubing: We still have some left, but 200' (maximum) at \$7.50. The idea is to let folks try this product, not become a supplier.
- 🍷 Garlic Art: We need some new graphics for *Press* and other uses. How about trading some original art work for a subscription renewal or T-shirt?
- 🍷 Kid Garlic Art: Winter 96-97 garlic art contest for kids (12 and under)! We'll put them all together for the festivals as the only art exhibit ever dedicated to a single culinary herb! *Press* #29: Get your kids to sharpen their crayons — Swell Prizes! Instant Fame!
- 🍷 Thanks to John, Harvey, Harry, Mark, Eugene, Joe, Rich and Lt. Hamilton of the Wayne County Jail for their assistance posting labels and licking stamps.
- 🍷 Note Your Bar Code Label! Thanks to Andy Snyder in Wolcott, NY, for his speedy and reasonable service in helping us comply with the US Postal Service policy to reduce their work force via automation.
- 🍷 Thanks for Your Renewals: If a 25, 26, or 27 is on your mailing label, please renew without reminder.
- 🍷 What #27 Cost: Typesetting: \$50, Database and labels: \$115, Photocopy: \$515, *Press* Editor: \$100, Postage: \$300, Total: \$1100.
- 🍷 The *Press* is now accepting poems, songs, art, culture, cartoons, testimonials, downright bold-faced lies, mystical journeys, or serious prose for the BIG ANNIVERSARY ISSUE.

DO YOU HAVE SEED FOR SALE?

Get listed in the "GSF SEED SUPPLIER LIST" that is distributed to hundreds of individuals, markets and extension folks around the country.

NAME _____
 FARM/GARDEN _____
 ADDRESS _____

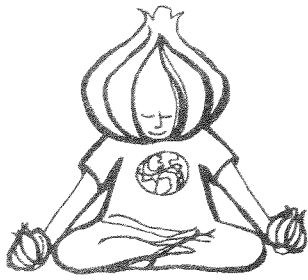
TELEPHONE _____ BEST TIME TO CALL _____

TYPES OF GARLIC AVAILABLE:

- Top Set Soft Neck Elephant
 Amount: Available _____ Minimum Order _____

Brief description of crop: _____

SEND IN QUICK!



OUT OF MY HEAD

Bob Dunkel

Summer 1996

There's a great short story by Loren Eiseley, the celebrated naturalist, about a man he called the "Star Thrower." He would watch from the oceanside as this man patrolled a particular section of beach shore and periodically he could see him cocking back his arm and throwing objects into the ocean. It turned out that he was picking up starfish that had washed in with the tide and was hurling them back to the deep water beyond the breakers.

The way this man had become part of a greater cycle reminds me of the work we do with garlic. We become a part of the force we call nature (among other things), and like the wind that scatters seed, we dip into that shoreline that is our row of garlic and pull forth that bulb, take it to our nesting barns where we store it in the best way we can mimic the earth itself, and then crack these bulbs open and redistribute them back to the depths of the earth, where they once again will begin anew their own preparation for winter, survival and the flourishing of another Spring.

It has always been a humbling experience to be part of this bulb's cycle. Though many a bulb will wash up onto the table, where feasting eyes and tantalized tongues await, the eye is always attuned to the progenitors that will carry on the wisdom and legacy of garlic's true being—like waves in crest and trough, there is only a rest between the crashings of time's march and it is now that we, as ants and not grasshoppers, must work busily to prepare for the seasons ahead. We grade, in field or at tables, the bulbs we have harvested, inspect for disease and cull, and set aside the seed we will dedicate back to the earth.

All is a process unending, and we come to see the fruits of our labors as the 90% of our crop that is sold, bartered and shared with one another and what is left is our seed. We are constantly learning better ways to listen to one another and to the garlic's song. Now is the time to make notes and store memories. Remember the weather patterns, look at moisture levels and disease as it may or may not correspond. Track and trace your strains against your land. What did well and where and what rotation should you consider using or changing. Remember, though, to listen a while, let the wind blow through you and sit back and, like a filtering sand, sift through the transom of your mind the melodies that play. Ask the garlic how you can better serve it. Thank the earth for all its bounty and think about what you are giving back in return.

Sulfur and the Sea

The tides roll in, then out again
and days break like waves
crashing on and on
and the garlic never dies.
Even inside us, the sulfur stirs
and eddies its way through and out again
as the courings of these compounds,
in fervent fray and dissolution, disappear
only to reassemble like morning clouds
that the moonlight had obscured.
We all have our time and passings
and in the flurry of moments forget
the balance that seasons and silence see.
Yet we, too, carry on in our way
this endless dance of reformulation—
Like the garlic, we only rest
when the weary day is done
and rise to work again, my friends,
all hostages to the sun.
From clods of clay to sandy loam
ever on the microbes roam
enriching both our soils and souls
as on and on the story goes. . . .
So set your sails for crimson skies.
Select your seed with watchful eyes.
The Future's but the past reborn.
Remember, then, the path you've worn,
for wisdom is the child's glee
listening to the singing sea.

— B.D.

Put yourself firmly into the circle and cycle of life around you and do not forget your part, your link to this process.

May the season be full to overflowing as your understanding and kindness abound, all in harmony with the song of the garlic. Please continue to share with this, our newsletter, and again thank you for your support in allowing me to continue to edit and write from my heart to yours.

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 — OCTOBER 31, 1996



ASK ALICE

A Chorus of Nose

I used to eat some garlic and smell for days; now I eat garlic as usual plus a clove every evening and I don't seem to smell anymore. Have you had similar comments? Is it a mutation? Is it me or have my friends and family lost their olfactory sense to my smell of garlic? We all still can taste it, smell it. I am not scared or frantic, just curious A Backyard Grower, Canada

First of all, my friend, let me commend you for your honesty. Certainly 'tis better to stink and know it, than to think you show it. If you have graduated your status from odiferous to subtle sulfur sublimity, it is quite a dis-stinktion indeed!! Either you managed to fry all the nasal hairs and sensory inputs of your family or you, sir, have truly evolved into a new and unique character. To put it mildly, you have blown away the stinkometer and gone to a whole new dimension where truly no nose knows what is really going on....

In my experience, most people who begin to acquire a regimen of garlic infusion — with the minimum daily intake of at least one clove — begin a process that rides roughshod

through the bowels and intestinal tracts and stampedes right on through some pretty funky accommodations. As time goes on, however, it is only natural to assume that those scavenging sulfur compounds have cleaned out your guts pretty well and even the release of fumes through your pores is less reactant. Then you are able to usher out the familiar pungency that all of our loved ones have come to acknowledge as the smell of garlic. As you have therefore maximized the absorption of that garlic magic and done run all those nasty varmints out of you, you are now an official garlic head and a member in high rank of the "no more smelly bellies gang." It's all really a matter of perspective, like the old story of the garlic eatin' skunk — you know,

THAT SKUNK SAT ON A STUMP
N' THE SKUNK THUNK THAT THE
STUMP STUNK, BUT!
THE STUMP THUNK THAT THE
SKUNK STUNK.

In your case I'd say — Your Skunk Don't Stink!

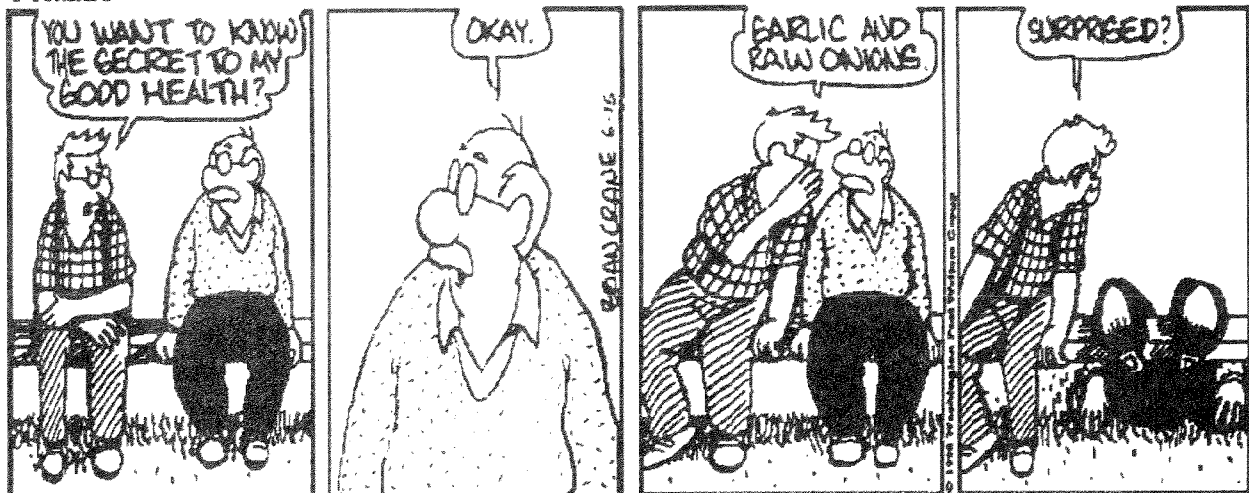
The 1000 Year Old Man

Once upon a time there lived a man who was over 1000 years old. Many people were interested in how he was able to reach such an advanced age. When he was finally approached with the question, he gave this explanation for his longevity. He said his secret was to eat lots of garlic with each meal.

Next he was asked if over the years he had any close calls with death. To this he replied, "Oh Yes!" He went on to tell how periodically the Angel of Death would come knocking at his door. He would then go to the door, open it, and say, "Whooooooo is it?" He then would look around and no one would be there.

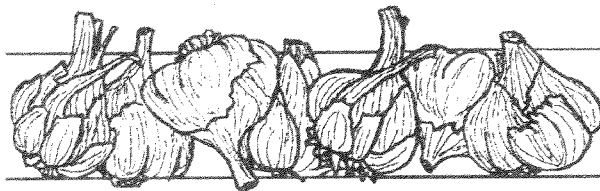
— Charles Sager, Warren, OH

PICKLES



A RECIPE FOR ACCURATE COMPARISON OF GARLIC VARIETIES

By David de Villiers



1. Take 10 healthy, good looking bulbs, all roughly of the same size, say about 2 oz., for each of two or more varieties to be compared.
2. For each variety separately, break down the bulbs into cloves and set aside the tiniest cloves and also outlandishly large cloves or those in the process of splitting if they cannot be parted without breaking flesh.
3. Using a marking pen, put a mode mark on each clove to indicate the variety. Do this early on to avoid mixing.
4. Count the cloves for each variety, and weigh them in tot. By trial and error, remove and add back cloves to the batches until the batches are matched both in number and total weight. There should be 75 or so cloves in each batch.
5. On a large table, visually rank order the cloves by size, each variety separately, but side-by-side. This will provide roughly 75 pairs of cloves.
6. Transfer the cloves in rank order, but alternating variety, to carefully labelled seedling trays so that they may be transported safely and in correct order to the planting site. If pairs are numbered 1 to 75 and the varieties A and B, then the order of planting should be 1A, 1B, 2A, 2B, 3A, ... 75A, 75B.
7. Plant to a uniform depth on a fixed spacing of, say, 6 inches, using a tape measure or marked rod to ensure uniform spacing. Spacing and planting depth can be varied as long as it is done systematically. Be sure to plant before October is out to allow time for root development.
8. At each end of the row or rows add, say, two buffer cloves of the same size and on the same spacing as the cloves they are buffering.
9. Drive steel reference stakes deeply into the ground at each end of the completed rows at a fixed and recorded distance from the planted cloves, and make good records of all that has been done.
10. Before the ground freezes really hard, apply an inch or two of seed-free mulch. This will help prevent winter heaving and generally protect the investment of time and effort.
11. Establish criteria for excluding plants from the study ahead of time, then take note of plants to be excluded as the season goes along. If one plant in a pair is excluded, the other must also be excluded, whether normal or not. Legitimate grounds for exclusion of plants are as follows: a deer, dog, cat, kid or heaven forbid, horse got loose in the garlic patch and permanently set back the plants they trod on; a vole or mole did the same thing underground; the clove was accidentally planted upside down or horizontally; a rock came to rest over the clove and stunted it; the clove produced multiple bulbs; the clove for some reason never emerged in the spring; the clove was frost-heaved and permanently stunted because of that; the plant is patently diseased—assuming this is random disease incidence, not variety specific; accidental mechanical damage to plants. You get the idea. It is not legitimate to exclude plants just because they do not look as big as they should come harvest time.
12. At harvest time, assess the identity of the plants with reference to the stakes and notes, and before digging, mark each plant on the stump of the scape, or if there is no scape, tag with sticky labels. Leaves and bulb skins are liable to fall away during curing, but the scape does not change much. Each plant needs to be identified as to both pair and variety.
13. After curing, clean, trim and weigh as accurately as possible each of the bulbs individually and tabulate the result. An electronic postal scale reading in grams should be adequate and inexpensive.
14. Do a "t-test for dependent samples" to see if the difference in yield is statistically significant. With the matching of pairs, this test should find significance a lot more readily than an ordinary 5-test on unmatched samples. Find a college kid with a statistics book and a calculator!

Note: If you have a way of weighing individual cloves, you can make more perfect matches of the pairs, which would be good. Also, if clove weights are recorded, they can be plotted against bulb weight if that is of any interest.

I am using the matched pair design for a number of other trials than variety comparisons, and haven't yet used it for that purpose. Seventy-five pairs may be excessive. If one makes assumptions as to typical variability of yielded bulb size and typical correlation between clove size and bulb size, it is possible to specify how many matched pairs are needed to detect a certain percentage difference in yield between varieties. I will figure this out when I have time and report back.

[Note: Often I am asked about variety trials and the best way to test garlic samples. David, a graduate student in Cornell's Fruit and Vegetable program, gave this to me following his presentation and the NYS Veg. Conference. Thanks David. (D.S.)]

More Stinky Replies

From Rod Wilson
Cambridge, NY

This past winter I unwittingly conducted an experiment on garlic storage that provided some interesting result. The experiment happened like this. In my house I have some braids made of softneck garlic varieties, Inchelium Red and New York White, hanging in the kitchen. The temperature ranges from 60° to 70°, and the relative humidity is pretty low. Also, in near proximity are some hardneck varieties, German, Spanish, Carpathian, etc., that were intended to be used in our personal culinary endeavors.

Meanwhile, down in the basement and in the connecting garage was a cart load of garlic in bags and in baskets. This was garlic waiting to be sold in small lots to a local food co-op. I had both softneck and hardneck varieties, and I was moving the cart from the garage to the basement and back, depending on temperature, keeping it as cold as possible. So the temperature range was between 32° and 40°, the lower temps early (in the garage), and then later when it got really cold outside, at a steady 40° in the basement. The relative humidity was pretty high.

So here is what happened. The braids in the kitchen, softneck, stored really well, and are not (mid-February) still firm and good. The hardnecks in the kitchen dehydrated by Christmas. In the basement, though, the hardneck are still in good shape, only slightly dehydrated, but having strong root nodules and bursting the wrappers a little. The basement softneck, however, have all begun to sprout, green stiff shoots piercing through the wrappers at interesting angles.

So it seems from my impromptu experiment that the softneck prefer a warmer, dryer environment, 65°? The hardneck would rather be cold and damp. It would be nice, though, to conduct a better controlled experiment and test this hypothesis out.

Note: Just so the "snowbirds" and folks living in Arizona don't forget, here's part of a letter
From Clara Sue Price in Minot, ND [D.S.]

In reading the last *Press*, I wasn't so sure that I wouldn't trade your snow for our erratic weather this winter. The snows started early for us and Gary thought that our garlic would have fine ground cover. But then we got wind—pretty much uncovered it again.

More snow made us hopeful but the temperatures were very cold the first week in January. We got relief from the cold as the high temp hit 50 above the 13th of January. Well there went the snow and on the 16th came the cold. If I remember it only got above zero once until the first week of February. It warmed enough to get more snow but then warm enough to melt again. Temps dropped and came up enough to again get snow the last couple days.

We will be surprised and thankful if any of our garlic survives. Last Saturday it was 30 above, snowing with 50 mph winds. The warmest blizzard I remember. Couldn't see but it was pleasant being outside.

During the long cold stretch we saw many days of 25-30 below getting down to 40-45 below in some areas. The worst was the wind chill with a low here of 93 below one day. The temps are moderate for us now but we've been fighting ice all winter.



Stinky Logic

The imperishable seed within that perishable garlic which one holds in the hand is the whole answer to where the garlic plant comes from to live and where it goes when it dies.

Garlic and Mosquitoes

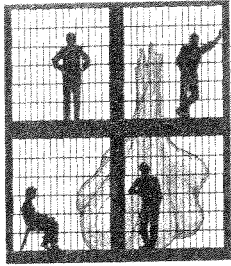
From *Science*, Vol. 269, 29 Sept. 1995, p. 1806

The report that marigold toxins kill mosquito larvae (Random Samples, 12 May, p. 809) is not necessarily unique. S. V. Amankan and others previously reported that diallyl disulfide, a major component of garlic that contributes a large share of its odor and flavor, readily kills mosquito larvae. I believe I have observed such an effect. In 1989, the severity of onion and garlic white rot disease was so great in a standing garlic field in central Oregon that the crop was a total loss, even though half or more of the plants remained alive in mid-June. To prevent further increase in the inoculum, to reduce the population of the fungal pathogen *Sclerotium cepivorum*, and to kill off the remaining garlic (which would become a weed in subsequent crops), we flooded the field continuously

between June and November. I waded weekly through the field collecting soil samples to monitor pathogen and garlic survival. No mosquitoes materialized in the field during these months, nor did the farmer who lived adjacent to the field notice any mosquitoes that summer. There were, however, many other insects and other invertebrates present in abundance. A slight garlic odor suggested that diallyl disulfide was leaking from the decaying garlic.

Fred Crowe
Central Oregon Agricultural Research Center
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Chow Time

Editor's Note: Folks ask why I spend time behind the walls and gates. Meet Chef Ed, born and raised in "The City" and that environment, now specializing his experience and skills in horticulture, and tending the largest Begonia in the world (Guinnis Book of World Records). Any ideas, suggestions or communications for Chef Ed: contact him via GSF. [D.S.]

Greetings fellow garlic connoisseurs. This is friendly Chef Ed writing to you from unfriendly Mid-Orange Correctional Facility. I would like to share with you some of my gourmet Jail House Garlic recipes and ideas that I have created to give my taste buds a flavorful fiesta and my body a natural defense mechanism to ward off any Jail House diseases that are floating around ready to attack. As a resident of the New York State Department of Corrections for seven years, I have to say that living in a controlled environment tends to discourage anyone's taste buds. Thanks to the saving effects of the Almighty *Allium sativum*, illness is a rarity. I have also been able to enjoy even the distaste-full dish they call "food" served in the Mess Hall. Now I know why they call it *Mess Hall!*

My Mother, God Bless her health, cooks with garlic all the time. (Boy do I miss Mom's cooking!) Mom always tells me, "Edward, eat Garlic and you will always be safe." Well, she's right! Chew a clove a day, and when a corrections cop wants to hassle me, he quickly moves on. Now I know it works on Vampires!

I can testify to this, my friends, prison is not the place to be. Before my incarceration, I took life for granted. Now I pray for the freedom I so misused. Getting involved with drugs is major uncool; it will make you do things

unheard of. But, as in life, we learn from our wrongs and move on to greener pastures, garlic fields, and a yearning to help your neighbor—to blanket the lives around you with peace, goodwill, and garlic breath. Prison life is a very lonely life—no friends, no letters, no life. But I have followed these famous words by yours truly: "Don't fill your life with time, fill your time with life!"

Speaking of filling, the stomach is one thing that is always empty when you're at this kind of resort. Cooking with Garlic is a chore when you are unwillingly detained. All we are able to use is a homemade hot plate and hot pot—both contraband, and if found would temporarily put my gourmet cooking out of business. Getting hold of the main ingredient is half the battle. The commissary sells garlic bulbs in a little blue box, but it's not like having the big elephant stuff. I've tried growing my own, but as with the rest of my vegetables, the produce seems to disappear at night. It must be the groundhogs, four-legged and two. Most of my dishes are with raw garlic; I love the taste and the effect it gives me. All this talk about food has made me hungry, so without further ado, let me share with you some of my favorite Jail House quick-fix dishes using the epic, extraordinary Garlic!

TUNA TURNKEY GARLIC SANDWICH

- 1 - 6 oz. can solid white tuna (save dolphin)
- 3 - chopped & crunched garlic cloves
- 1 - large squirt of Mayo
- 1 - pinch of Sazon

Smash up garlic with can of tuna. Open tuna and use can top to chop garlic to desired size. Mix tuna, garlic, Sazon, and Mayo in medium bowl. Slap mix on bread and chow down. Yields 3 sandwiches.

GARLIC BREAD BASTILLE

- Bread
- Butter
- Garlic

Chop garlic as fine as you can using a can top from Sing Sing Spaghetti. Spread butter on bread and add garlic. Absolutely scrumptious!

SING SING SPAGHETTI

- ½ pound of spaghetti
- 1 - 8 oz. can of tomato sauce
- 5 - chopped Garlic cloves
- 1 - pinch of salt

Bring fresh water to boil. Add spaghetti with pinch of salt. Smash up garlic with can of sauce, and chop as in Turnkey recipe. Pour sauce in bowl and add garlic. Drain spaghetti in toilet and add to bowl. Mix and eat. Yields 1 bowl.

GARLIC ON THE DOWN LOW

- Garlic

Smash up Garlic and chop. Wait till the cop calls for Chow. Put garlic in an empty pill bottle. Hide on your person. When you're in the Mess Hall, empty contents of pill bottle onto food and chow down.

Many times when I go to the mess hall to eat mess food, I bring with me some chopped Knoblach, mix it in the food, and "wah-la" instant success. One of the (rare) joy's of being incarcerated is that you get to meet some cool people from the outside. On one of the occasions I got to meet the Garlic King himself, David Stern! Now let me tell you, my friends, this is no ordinary man; we're talking about Mr. Elephant himself. David was nice enough to show my Horticulture class a slide show of

Stinking Rose Valley Farm, and he told us about life on the land. Everyone was enlightened and educated about farm life and the famous Garlic Seed Foundation. Instructor Dan Reo thought Dave's show was great for the guys. Big D.S. reinforced my desire to have a spread of my own when I get out.

Next time, my friends, I'll share with you my famous recipe for Rice Diablo and Garlic, and handy every day uses around the house (cell) with Garlic. Peace to all!

— Chef Ed

GARLIC GROWERS ASSOCIATION OF ONTARIO ANNUAL FIELD DAY, JUNE 22, 1996

Reported by Warren Ham, Garlic Growers Association of Ontario
38 Centre Street, Stratford, Ont. N5A 1E3, Canada (519-272-1742)

*And Lo 150 Garlicite growers descended like a swarm of locusts on the land of the Tobaccoites. And there was a great uproar in the village of Lasalette Ontario, and they were sore afraid when the Garlicite legend (The Fish Lake Garlic Man) Ted Macza's van, with a 4 foot garlic bulb on top came into view causing the Tobaccoites to cry out in fear at the prospect of the oncoming invasion. And there arose from the Garlicites executive council a garlic tour guide named Darrell Slaght, found floating in a reed basket in Big Creek. And Darrell led them like a roasted garlic bulb by day, through the dessert of Tobacco for four hours and fifty miles into and through the promised fields of Allium Sativum. And it came to pass that there was much mumbling in the tents over row spacing, irrigation, organic matter, herbicides, planters, harvesters, sizers, varieties, markets, scapes, trimming, and the ever-present Chinese garlic threat. And wallets opened and spoke with each other, and business cards changed pockets. And from the tour farms they went forth into the provincial Tabernacle of Agriculture at Simcoe and there heard from their scribes ... and at the end of the day as the Garlicites went forth to multiply even further, the executives looked back upon the day, stroked their bulbs and said ... **IT IS GOOD.***

I am trying to convey the *epic* proportions of this ??th version of "The Field Day" for the Garlic Growers Association Of Ontario. We appreciate the presence from our west coast by Robert Mcfadden of British Columbia, from the Quebec growers I didn't get around to meeting, and also from one Mel Gass from Prince Edward Island (former Premier, now garlic magnate) from our east coast (4500 km span - not bad, eh?!)

I would like to thank Darrell & Melody Slaght for organizing and leading the machinery and crop tour around their own farm with all the garlic implements hauled in from who knows where. Thanks to Mark & Betty Anne Devos for letting the crowds compact their soil, and also our gratitude to our perennial favourite garlic sage and varietal namesake Al & Neda Music, for showing us their crop.

In the afternoon most of the crowd, having had no lunch (forget the loaves and fishes, the executive is not that good), tackled the business portion of the day.

Our first guest speaker was Lois Mclean from the Plant Protection Division of Ag Can. Lois' central message: Some growers have the idea they can pick up garlic imported for consumption off the shelf or from the food terminal, plant and start into business. The potential diseases, i.e., nematodes, are definitely not worth it, not to mention getting involved with the government if they catch wind of it. Need a phytosanitary certificate? Who you gonna call? Lois Maclean 519-837-9400. Thanks Lois.

Our next speaker was Stephanie De Grandis, Ph.D., research coordinator with the Ag & Food series branch of Ontario Ministry of Agriculture. Dr. De Grandis presented the findings of a study, *The Influence of Processing and Storage on the Nutraceutical Content and Clinical Efficacy of Ontario Garlic* (breathe now), that was carried on this winter in conjunction with the University of Guelph and our Association. Stephanie's Message:

(1) Add nutraceutical to your vocabulary (food that provides health benefits including the prevention of disease), garlic is one of them.

(2) Ontario Garlic contains the same and or more allicin than the imported garlic whether processed or not.

(3) For a copy of the report (a good read) call Stephanie at 519-676-6311, Fax 767-6240, email: degranst@epo.gov.on.ca Thank you Stephanie for reminding us that we are growing healthy food.

The dumping of Chinese garlic into the Canadian Market

GGAO have hired Alex & Barbara Macdougall to research and file an anti-dumping complaint on our behalf, against the Peoples Republic of China, with Revenue Canada. China has been dumping garlic into our market at prices in the range of 26¢ per pound, and they now account for up to 80% of our market. Four years ago they were around 10% of the market. At the business meeting we were pleased to be joined by Claude Doucet, from Revenue Canada's Anti-dumping and Countervailing Division, who flew in from Ottawa for the day. (Hi! I'm from the government and I'm here to help.)

Claude had been working closely with Alex & Barbara on the document and explained the process of the steps: 1st proper documentation demonstrating dumping and injury, 2nd Revenue Canada's investigation, 3rd a preliminary determination, 4th Trade Tribunal investigation, and 5th a final determination (151 days).

A lot of dreams were and are at stake in that room! We passed the hat, and from the members present collected \$13,000.00 to add to the \$6,000.00 we had already committed to the project (**all of our money**). Alex and Barbara were paid, and the 4-pound document went back to Ottawa with Claude (better \$ per pound than they made selling their garlic). Thanks Alex & Barbara!

This is a turning point for our association and, simply put, the garlic industry in Canada. We will probably need twice this much money to finish the complaint, when the legal sharks get their teeth in us. But for just that day, it was great to see people I've done business with for the last five years, and those who founded the association 15 years ago, along with new growers, pull together and pool their resources in the hope that a level growing field will prevail. I don't know where the next \$ will come from, but we will get the job done. (I believe keeping prices up will be of benefit to growers on both sides of our border. If you feel you can help in any way, please contact me.)

To sum the field day up: The 15-year grower and those wondering about the right way to orient a clove when planting all benefitted from getting together. We've all had help along the way; seen growers some, go and hang in; tried things we would wish on no one; and been able to pass some good things on. I believe "the stuff" taken in grower-to-grower on what has or hasn't worked for them is worth hours of reading.

The learning curve bulb is there to try and hit every day.

Good Luck & Good Garlic!



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The Root Quarterly

A publication solely dedicated to what grows beneath the surface of the ground

WELCOME to the first issue of *The Root Quarterly*. The idea of a newsletter originated a year or so ago. I have been interested in most types of plants since I was a pre-teenager in the 1950s. Over the past several years I have become increasingly interested in several groups. As many of you are aware, information on many aspects of growing, storing, or saving seed to name a few is not readily available to those seeking more knowledge. The majority of the world's people currently rely on a small percentage of plants for food compared to what we did only a few centuries ago. In our hurried society, we also rely on thousands of prepared or nearly ready to eat processed foods, but these too are often based on a dozen or so primary plants. When one considers the economy or the nutrition of modern-type foods, ten dollars of potato tubers go a lot further than ten dollars of store bought potato chips.

I have thought for many years that plants with edible or medicinal roots should be grown more. Their importance is increased when they can be stored for several months deteriorating only slightly. Actually, if dried or pickled, many can have a usefulness of several times longer.

The organic trend seems to be expanding as increasing numbers of consumers become more suspicious of chemically sprayed and grown foods. Even if one grows his or her own plants using traditional chemical methods, the tastes are quite different than most store bought ones.

I am hoping some of you people will offer to submit articles on plants you have knowledge on and can share. There are numerous roots on which we all can use more information.

[Editor Roger Grinnel seeks articles for a "Garlic/Animal" page (farm animals, I assume) and additional garlic pieces. First issue has selections on mistletoe, carrot, propagation of roots, glossary of botanical root terms, and garlic. \$17/year (\$30, 2 years/8 issues), U.S. dollars. The Root Quarterly, 3016 Botanical Drive, Claremont, NC 28610, USA] D.S.

Virginia Garlic Festival

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22 miles north of Lynchburg, VA)

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