

# The Natural Farmer

## Inquiring Farmer, Louis Lego - Summer 2002 Special Supplement on On-Farm Research

By Jack Kittredge

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The Finger Lakes region of central New York is still prime agricultural territory. Good soils, gently rolling terrain, and lack of development pressure from large cities have kept farming a viable land use here. The infrastructure of implement dealerships, farm supply distributors, and machine shops is still in existence. The presence of Cornell and the Geneva Experiment Station nearby gives farming some stature. Local markets for high-end, organic, and specialty foods are growing rapidly.

Into this world almost two decades ago moved Louis Lego with his wife and two sons. Lego was a researcher at General Dynamics, but he had a hankering for the rural life. So he bought a 100 acre farm in Auburn, later bringing his 89-year old mother to live in a separate house on a couple of acres next to the farm. For years after buying, Louis worked two jobs — staying with the day job to pay the bills while working to build up the farm. Finally, in 1997, he felt the farm was ready and quit his day job.

By then he had built a viable operation raising fruits and vegetables, including over 100 varieties of heirloom apples and 40 varieties of plums. The apples are planted in both an organically managed block and one using low risk — but not organic — methods. They all are primarily semi-dwarfs because Lego has found that dwarfs in his area can't grow fast enough to keep ahead of browsing by deer. He prunes them each year, preferring a central leader system. Some varieties, however, like the Winter Bananas, never get a central leader so he has to open them up. Lego also has Asian pears. Although they are usually grown in climates like California, he has had good success with the pears since having them



photo by Jack Kittredge

**Lou Lego stands before his Winter Banana apple tree. This tree is in his low risk block, but the only treatments they had this year were Surround (kaolin clay) and a dormant oil.**

grafted onto Russian pear rootstock. They have been there 7 or 8 years without winter kill. But the winters haven't been as severe as is possible in that region, he cautions.

Lego is a strong believer in building up the health of his land. Not having any animals, he has developed other ways to strengthen his soil. "We have 100 acres," he says, "but only farm on about 30. To build fertility we use green manures and rotations. A neighbor raises alfalfa without chemicals and we rotate — he'll plant on the land I take out of vegetables each year. In any given year I might have as many as 18 acres in production."

Lego uses only one small tractor in his operation, and thus does a lot of hand work. To help him he hires college kids. "We've been very lucky with our help," he confides. "They come back every year and get very good at what they do. Of course they all go back to school at the end of August."

Louis is trying to integrate his two sons into the business so they can eventually take it over and support their families there. "When they were in high school," he recalls, "They resisted all this. You couldn't get them to help here at all, unless they were sitting on the tractor! I thought: 'I just want them far away?' But now they're interested in it. They're nice people now! It changes when they grow up. They love you and appreciate you. And you have a little grandson around!"

His younger son, Jeff, has always been interested in the farm and would like to manage it someday. Now 26, he got a degree in photography and has worked at various jobs, but now wants to bring his wife and boy, Tai, back to the farm to live. "He's been an enormous help to me over the years," says Lego, thoughtfully, "and it would be great to have him here. His wife is from New Jersey, however, and doesn't really have a farm background. So we'll have to see if this works out for her, as well."

The older son, Chris, is 28 and a chef. One of Lego's dreams is to start a gourmet restaurant on the farm, which Chris could run. The farm would sell organic produce to the restaurant, so both boys could benefit. "I think it's possible to make a living farming," he asserts. "The whole vertical integration thing can make it work. You just need to figure out whatever it is in your sphere you need to do to make money. It ain't selling at farmers markets, at least for us!"

"The Mennonites are an inspiration," he continues. "Their farms are maintained meticulously. They have money. Partly they don't consume a lot, but mainly they are very shrewd businessmen. And the whole family is involved. There's a Mennonite farm where we buy some of our equipment — our mulch layer and lifter. When I went there, a small blade was missing on a piece of equipment. A 12-year old girl came out and welded a new one on, and another 12-year old kid spray painted it. That business is the largest supplier of its type in the world. They have Chinese buyers!"

Although Louis' farm is certified by NOFA-NY, he doesn't think his certification pays for itself. "We send a survey out to our buyers every year to find out how everything is going," he recounts. "We ask them about certification and how important it is to them. They say they buy because we raise it. My wife says that means they know how demanding we are and they trust us. Every week we get calls from people telling us how excited they are about our food. I think it's a growing market. There are enough bad things happening to the environment that are getting publicity. It's even reaching the extension service and ag schools. The number of people there who are interested in alternatives to conventional ag is growing."

In Lego's part of New York there aren't a lot of other vegetable farmers and the organic movement is still young. But there is interest. He says he once did a little article in a farm paper on potato leafhoppers

at a time when they were terrible, destroying everything. He suggested that it doesn't do a lot of good to use an insecticide and kill the leafhoppers. They're everywhere and will just come back in on your farm. The best thing you can do, he wrote, is to repel them. He had tried Neem, an organic repellent, and it worked pretty well. He got calls from three local farmers wanting to know all about his logic and results.

Louis is particularly upset about the new certification requirement that you have to write threatening letters to your neighbors warning them to let you know what they are spraying in their fields. "I tried to reword the letter and soften it a little," he sighs. "I understand the point the certification committee is making. But I can see how there is stuff I'm doing that affects my neighbors, too. If I don't spray for a pest in my orchard, I'm providing a refuge for pests that can damage their fruit. There is always a give and take in life. You can argue that if I don't use a herbicide my weeds will blow their seed on my neighbor's fields. It can go both ways and I think you have to be careful."



photo courtesy Lou Lego

**Lou Lego obtained a grant to report on his "hybrid mulch approach" that uses a living mulch and extends the life of plastic used. The grain mulch between the rows is cut in mid-June or early July when the mulch is over two feet high and beginning to form seed.**

them to people's doors. We leave it off and they leave off the old basket and the jars on the doorstep when we deliver again. It looks nice to get your food in a basket. The members think it's wonderful! We think it's wonderful because it takes all the uncertainty out of it. My wife and I both do it. We do it on two days and it takes maybe 4 hours. We take only people who are close!

"Here's our newsletter," he continues. "We have a paragraph on organic gardening in every issue. Then we have a paragraph on what we're delivering. They get one every week. Every week we include recipes. You can't believe the amount of time my wife puts into those recipes. All week we're eating them. She'll redo a little thing and we'll try it again!"

When I visited in early September, a large share was getting: a dozen ears of sweet corn, a bag of mixed apples and pears, red, green, and yellow heirloom tomatoes, (with a recipe for a wonderful Mexican festival salad to use them in), cherry tomatoes, leeks and potatoes (with a recipe for potato/leek soup), a

Not long after he bought the farm, Lego opened a store on it to be able to sell retail. Over the last 15 years he has had built a strong customer base selling jams, jellies, teas, and other items, as well as produce, to a regular, repeat clientele. Business has gone up 30% a year for the last 5 years, he says. It is currently open on Thursday, Friday and Saturday, but Louis and his wife try to take Sundays off. But so many people now want to come out on Sunday afternoons, he says, that they are reconsidering: "We could probably do another \$800 in sales on Sunday. So we may open up then, especially in the fall. I hate to do it but from the customer's point of view it's one of the few days they have to enjoy a trip to the country."

Even more important than the store, now, is Lego's 50-family CSA. It has been going for 4 years. Louis and his wife deliver directly to the members' doors. "It's a great way to market," he says. "We like doing deliveries. When we had pick-ups people wouldn't show up, we'd have to call them, and it was a nightmare! Now we put every member's order in a bushel basket and deliver

big onion, cucumbers, and flowers. The Legos deliver on Tuesday and Wednesday , picking what they can on Monday for the CSA. Things like corn, however, they don't pick until the day of delivery.

Lego got the idea of opening a restaurant when he went to California and visited restaurants connected to farms in the Napa Valley. He figured there was no reason he couldn't make it work here, too. "Of course California is year round, farms have nuts and citrus and everything! It's a completely different things out there — farming. But right now people come to the farm from as far as Syracuse, which is 40 miles away. My dream is that it will become a Chez Panisse, a nationally known restaurant. It won't be gigantic — maybe seat 70. I think it will take years — five years, ten years — for the reputation to spread. If we do it well, it will happen.

"The idea of planting and growing for a restaurant is exciting. Chris is going to need smaller quantities of things, very fresh, more often. We're going to have to plant beans weekly for him. Smaller quantities. We're going to have to put in a tunnel to raise mesclun earlier in the season. In the winter we'll shut the restaurant down. We really want it to be seasonal, based on what we grow here. I don't know if we can keep doing the CSA then. Something is going to have to give. And the store makes sense if we're bringing people here for a restaurant. It might even increase our business there. I've thought about doing a hard cider to draw people. We've been working on that for several years, but it's still not very good! (laughs) I'd like to do one that isn't real hard, just naturally carbonated. The Geneva Ag center there has a food venture center which will help you develop food processing. They've said they would work with us on a cider because we have the apples."



photo by Jack Kittredge

**The tomatoes are growing up through plastic mulch and the field is covered with ryegrass. Lou's tomato cages are made from bent steel reinforcing wire and will nest together when stored.**

Coming from a background of scientific research, Louis is naturally curious about farming practices. Someday he would like to do some research on growing organic versus conventional foods and checking their nutritional quality. "Whenever people ask about the value of organic food we all say: 'Oh, it's better for you!' But there's no hard evidence," he insists. "My wife is a nutritionist and her big thing is to look at the food by its effect on the health of whoever eats it. Many studies just burn the food, analyze the ash, and determine the nutrient content that way. But comparative animal studies would tell us so much more about the vitality of the food! This would be a wonderful opportunity to involve everyone — conventional growers, university personnel, and organic farmers — in a key research question."

Lego has already been awarded a couple of grants from SARE for on-farm research. He feels SARE provides a mechanism for a small, tiny farmer who has a good idea to influence the whole way farming is done. And he thinks the program is easy to work with. "They don't require too much detail in your planning, project description, budget, etc." he says. "You have to submit a financial report every month

— whatever you've spent. The final reports you have to spend some time on, but they always seem to really read them and pay attention to them.

"I'd be very encouraging to other farmers about approaching SARE," he continues. "Just think about things you do and would like to do better. Don't be nervous. Call SARE and talk to them about what you want to do. David Holm will give you good advice. He's not the guy who's going to judge it — that's done by a board. It's such a great way to improve your farming. Part of your proposal is your outreach, telling them how you are going to share your results with others — publishing a report somewhere, presenting the results at a conference — what are you going to do to get the word out? It's been a great experience. I would like to do more and more.

Louis' first SARE grant was into a system he calls 'hybrid mulching'. The idea is to take a well prepared field, seed it in the fall to rye grain, and then lay down a strong plastic mulch (he likes a 48 inch, 1.5 mil film). Where the plastic covers a seeded area, the grain fails to germinate or is smothered. By winter the rye has grown to several inches as a cover crop, holding the plastic in place and preventing erosion. In spring it greens up and grows rapidly, so that it is tall enough to protect the plastic from UV rays when the sun is high in the sky. By mid may the soil is warm, and tomatoes are transplanted into the plastic mulch. The tall rows of grain on each side of the transplants protects them from drying winds, they are warmed by the mulch and grow rapidly. In June or July the grain begins to form seed and is cut (he uses a walk-behind sickle bar mower.) It is important to make sure the rye near the edges of the plastic falls onto it to protect it from the UV rays and keep the soil under it from overheating. The result is a plastic mulch so thoroughly covered by cut grain that you can't even see the plastic. Ripening tomatoes will rest on the stalks rather than the plastic.

No further work is needed for that year's crop. The plant residue is removed either in the fall (when the field with the plastic still down is reseeded to rye) or in the spring (when the field is seeded with oats.) The same steps are taken the following spring, when the plastic mulch is planted with melons or squash. The third year it can be planted with the cabbage family. All these crops benefit from being planted in plastic, he reasons, and the rotation progresses from the most disease prone crop in the first year to the least in the final year. Lego has found that he can get mulch to last three years under this system, vastly reducing the work of laying and collecting the mulch each year. He likes red or brown-red mulch because it warms the soil faster than black or green infrared transmitting (IRT) mulch. Cutting the grain should be done as late as possible in the spring to provide the best weed control.

"It's a spectacular mulching system," he enthuses. "When we use the rye grain we cut the rye in June, right after we plant the tomatoes. You get this tunnel down through the rye which really protects the tomatoes from drying winds. It's like a special microclimate in there and they grow like crazy. As soon as they get going you cut the rye. The rye just covers the plastic. There's no erosion at all. You can't tell there's plastic down. I've seen guys who grow vegetables on hilly land and use plastic. There are gullies at the edges of the plastic, sometimes 2 or 3 feet deep! I think I'll go to this system with a lot of my vegetables. I love it. The field is all in cover crop. It holds the soil.

"I can get this plastic up after 3 years, no problem," he continues. "I have a mulch lifter, but you can do without that if you want. Originally the plastic would crumble in the field, but plastics now hold together. Plus, by covering it, you prevent ultraviolet light from breaking it down. I was mowing the swaths with a small cutter-bar mower, mounted on my Gravely walking tractor. But not everyone has such equipment. Maybe there is some tractor equipment you could find — you could drive right over the rye. Now I'm investigating growing clover in the pathway. And I want to try an annual ryegrass and

clover mix that should all die out next summer. I never realized, until I started working with it, that an annual ryegrass starts up and lives through the spring, but dies in the early summer."

Louis had to talk to NOFA-NY about this mulching system because the standards require taking the plastic up every year. As long as he gets it all up with this system, they are letting him try it. One downside of this system, he admits, is that he has to lay down his plastic at the widest necessary spacing for three years. His rows are about 10 feet apart. It wouldn't have to be that wide for tomatoes, but the plastic is spaced for the widest drop, which will be melons. Also, the spring reseeding with oats doesn't get up far enough to make a really thick stand to last through the summer. So he is currently investigating a reseeded that he could run right down the row of oats which had gotten thin, reseeding with clover.

Louis's most recent SARE project is researching new, less toxic chemicals for pest and disease control in apple orchards. They are very specific chemicals, such as a sterile inhibitor for scab. You spray it on trees when they're dormant. For about 12 weeks it stops the tree from producing a very specific sugar, which scab needs to live. After that period of time, which is when scab is a problem, it starts producing sugar again. According to the EPA the product is completely harmless and doesn't affect any insects or other life. But it is a synthetic.

"The EPA calls them low risk chemicals," he explains, "because they don't know of any risk to people or the environment. They are so specific to certain problems. The down side is that they are generally expensive. But you can use very small amounts — one spray a year. It doesn't completely eliminate scab, but does a very good job. Scab is our biggest disease problem. For codling moth there's a new product out: 'Last Call!' It dispenses pheromones, which attract the male moths and then a synthetic pyrethroid kills them. It's an excellent way to reduce the impact of sprays — only the subject pest is attracted. Of course it's still not allowed in organic systems because of the synthetic chemical involved."



photo by Jack Kittredge

**Lou, with grandson Tai on his shoulders, shows one of his fields where he is conducting research on an experimental hybrid mulching system.**

Louis is not convinced that managing an orchard organically is a good thing. Before they used arsenic in orchards, he says, there was a pretty good balance. There were wormy apples, but not many. Apples had evolved with tough skins, apples that weren't attractive to pests. Natural evolution had protected orchards. But as soon as the insecticides arrived, and people started demanding redder apples, it all moved in the wrong way. The pesticides killed the beneficials and there was no more balance. The problem became terrible and you couldn't grow apples without chemicals. Now there are 'organic' products like rotenone or sulfur which aren't good for anyone, but are necessary if you want to get cosmetically saleable apples. One spray of Imidan can replace all those, he

argues, and isn't that better for the environment?

"We don't use any rotenone in our organic block,' he says. "We use "Surround", which is kaolin clay, for curculio. It appears to work well, but it is horrible stuff to work with. It plugs everything up; it gets over everything — the ground, trees, and the tractor. It's a nightmare. It's very finely ground. It's very expensive, too. You put it on thick and the insects get gummed up trying to get through it. They say there is also some effect by making the tree less attractive because it looks so white."

Lego tries to grow as many old varieties as he can. The oldest apple he has is a Jefferis, a beautiful striped apple. It comes from a farm in Chester County, Pennsylvania where it was planted about 1812. Altogether he has about 110 varieties. It's a problem for marketing, though, he says. Each week people come to the store who want the apple they had last week. But he doesn't have it anymore!

Reflecting a little on his decision to give over the corporate world for a family farm, Louis says: "We're up and down about this. One morning we can't understand why we're doing it, all the work! The next morning, it all looks different. It helps when people come out and it all looks so wonderful to them! You think: 'Maybe they're right! Maybe it is!' I miss the excitement of proposals and people rushing around, but I don't miss it as much as I thought I might. I like it a lot better spending my time here than at airports! I think about that every single day!"