

SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION PROGRAM
PRODUCER GRANT FINAL REPORT NOV. 1995

1. The goals of this project are to develop a cottage industry based on growing Chinese Chestnuts, specifically to improve the harvesting and marketing and to capture the 23 million pound imported market for Chestnuts.

2. Our farm consists of 20 acres of mature Chinese Chestnut trees, 8 acres of young Chestnut trees, 3/4 acre of Asparagus and 5 acres of Blueberries.

3. The cooperators in this project were my family. The pruning, clearing, and mowing was done by myself, Peter. The picking was done with my Father, Mother, and myself. Marketing was accomplished by my parents, brother, sister-in-law, and myself.

4. I pruned and cleared in the old orchard which accounted for 94 hours. I brush-hogged the orchard and fine mowed it. I tried a York Rake to pile nuts, thinking it would help in harvesting but that proved to not be the case. The mowing took 20 hours. The picking (about 1100#) took 136 hours. The sorting and packaging took about 33 hours. We used the Blueberry cleaning and sorting table to do this. This is definitely necessary when you use the vacuum method to collect the nuts. We also utilized the Blueberry Cooler, at 38degrees, to retain the quality of the nuts. By cooling the nuts within 8 hours of harvest we were able to keep the nuts at top quality for up to two months. The marketing (includes sampling) took another 138 hours.

5. We found that the two different sizes of 'Bag-A-Nut' equipment did not work well with the smaller Chinese nuts and the rough terrain. The vacuum method (Shop Vac and Generator) was better than hand picking but not practical for acreage larger than three acres or with a poor scattered crop. A unexpected result of this project was that we were able to reach a large number of people who had never tasted edible Chestnuts. To many people, Chestnuts were only the unedible horse chestnuts trees you see lining many city streets. These Chinese Chestnuts proved to be especially attractive to our new customers because of their sweet taste, low fat (1%) and high carbohydrate (49%) content. In marketing the nuts the small size was a deterrent until the people tried them, then the flavor and sweetness of the nuts allowed them to sell themselves. We tried various ways to provide samples to our customers. A smoker and a table top gas grill proved too slow and too cumbersome. We finally settled on a single burner propane stove and used a steamer pan on it. This seemed to be the fastest and best method to get the samples out to the customers. We also found it was best to peel the nuts, which we had cut in half with pruning shears before steaming. Many customers did not realize you did not eat the shell.

Because we had a small crop, we did not try the wholesale or

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grocery supermarket. We feel that to be successful in that area store sampling would be necessary. We would also have to educate the stores to the fact that Chestnuts are not like other nuts and must be refrigerated to prevent drying out, flavor loss and mold. Some of our customers who had tried the European Chestnuts offered during the holidays at the Supermarkets, were surprised that we did not have any moldy nuts. We had many people who bought a small basket of Chestnuts and returned the next week for larger quantities. We passed out many information sheets to the people, which included ways to prepare Chestnuts, nutritional value, and some different recipes. These sheets were very important in getting our information across. We have included copies of the two information sheets we used.

6. The drought affected the size and quantity of the crop this year. Deer, turkey, and squirrels were a big problem in that if you didn't pick the nuts a few days after they dropped from the trees, there were none left!

7. This is a very labor intensive crop. The vacuum method is better than hand picking if you do it yourself. In Asia they use hand labor to pick nuts but we were not able to find a source of labor. A look at the chart shows that it took 421 hours to produce an income of \$2500. Considering expenses, equipment, labor, we did not make any money but we learned a lot.

8. We investigated some picking machines in Georgia during February of this year. The Cooperative Extension of Cattaraugus Co. assisted us by putting us in contact with the Cooperative Extension in Albany Georgia and some dealers in picking machinery. We also toured a pecan factory. In October I went to Dallas on business and while there checked out a picking machine which we think would work in our operation. It is a tow behind picker used for pecans (no Chestnut pickers available).

We feel that perhaps an invisible fence could be installed to protect the orchard from the animals.

A vendors cart, so we could sell already roasted Chestnuts, would be well accepted by people.

We feel the trees need to be fertilized.

We feel that larger quantities of nuts could be stored and refrigerated in burlap bags.

Irrigation may prove necessary for orchards if you have a drought as the nuts are filling out.

9. We will continue to use the practice we investigated because there is a definite market out there for the smaller size (approx 150 nuts/lb.) Chestnuts. The vacuum method will do in a good year or for 1 to 3 acres. We need to keep marketing the nuts so as to increase consumer demands. We need to find a better harvesting method.

10. We tell other producers and would be producers that there is a market for Chinese Chestnuts.

1. They could compliment other crops and/or could be a good

crop for forest owners. Once established they could help pay taxes, enhance wildlife, and give them the pleasure of a tasty fresh nut.

2. Plant seedlings from Chinese Chestnut trees that produce the largest nuts.

3. Chestnuts would be a good sustainable agricultural crop once harvesting problems are solved.

4. There is a great potential for uses other than fresh market once we have enough of the crop in the U.S. Processors should be interested because of the low fat/cholesterol and high carbohydrates of these nuts.

11. My outreach program consisted of many things. I spoke at a Forest Owners seminar in January in which approximately 250 attended. I spoke at the Arbor Day program at Cooperative Extension this year on Chestnuts. I did a presentation at the New York Forest Owners Meeting (NYFOA) on Chestnuts with about 40 in attendance. My Father took a 4 pint basket to a meeting of the Agricultural and Life Science Meeting at Cooperative Extension. There were about 8 people there, none of which had ever tasted Chestnuts. They microwaved them and every last one was gone by the end of the meeting.

We gave samples of Chestnuts at Farm Markets in East Aurora, Downtown Buffalo, North Tonawanda, and at the New York Vintage Wine Festival, held in November, in Buffalo.

I intend to send a report to NYFOA, American Tree Farm, The Midwest Nut Growers Association, Cattaraugus County Cooperative Extension, The American Chestnut Association, Michigan State, The Chestnut Alliance and any others that show an interest in furthering the growing of Chinese Chestnuts.

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received
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CARE OF SWEET CHESTNUTS GROWN IN WESTERN NEW YORK

Fresh Chestnuts are quite perishable. They must be kept refrigerated or they will dry out and become hard. They will keep for several weeks if refrigerated in plastic bags which have a number of holes to prevent moisture accumulation. Chestnuts FREEZE WELL. You may freeze them in their shells and bring out just the quantity you need. To use, just let them thaw and proceed as for fresh chestnuts.

PEELING CHESTNUTS

BOILING - Split chestnuts, drop into pot of boiling water for 3-5 minutes. Drain and peel off skin and shell with paring knife.

ROASTING - Cut a half-inch gash on flat side of nut, put in oven proof pan, add one-half teaspoon butter to each cup of chestnuts. Put pan in 400 degree oven for 5 to 8 minutes. Remove and take off shells.

STEAMING - Cut chestnuts in half and put in steamer for 10 minutes. Cool a bit, remove shell and enjoy!

MICROWAVING - Cut chestnuts in half, put about 10 nuts in a microwave dish for 2 minutes (experiment) When done skins and shells will easily separate from nut.

CHESTNUTS ON AN OPEN FIRE!! Cut a small gash on each chestnut. Place them in a long-handled basket or popcorn popper and hold just above the flames. Shake occasionally. It will take about 15 minutes before they are done. When shells begin to brown on outside, they should be roasted enough. Put on a plate, peel and eat this wonderful treat!

VITAMINS

B1.....0.35mg
B2.....0.35mg
B5.....0.77mg
B6.....0.53mg
B12....0.00mg
Niacin 1.00mg
C.....9.60mg
E.....0.80mg

MINERALS

Sodium.....10mg
Phosphorus...141mg
Potassium...726mg
Calcium.....43mg
Iron.....2.7mg
Magnesium...65.6mg
Copper.....0.67mg
Manganese....5.8mg

NUTRITIONAL

Per 1 cup Shelled Nuts
Calories.....310
Protein.....4.2%
Fat.....1.1%
Carbohydrates...49.07%
Water.....43.95%
Fiber.....2.0%

CHESTNUT CHIP DIP; 1# CHESTNUTS, SHELLED, 2 CUPS CHICKEN BROTH, 1 ONION

Cook the chestnuts in the chicken broth until soft. Mash well with 1 and one-half cups of the broth or put into the blender and slowly add more broth until mixture reaches dipping consistency. (Have on chicken broth cube on hand to be dissolved in case chestnuts take up too much liquid. Add one small grated onion.

CHESTNUT VEGETABLE STEW; 1 ONION, 2 TBSP. OLIVE OIL, 2 CARROTS, 3 cups chicken stock, 1 TURNIP, 2 POTATOES, 2 CELERY STALKS WITH LEAVES, 2 LARGE CABBAGE LEAVES, 1 # CHESTNUTS. Saute onion in a large pot. Add stock and chopped vegetables, then add peeled chestnuts and simmer until tender (30 min.) Good with hearty bread and cheese.

CHESTNUT MUFFINS: 2 CUPS COOKED CHESTNUTS, 1/2 CUP FLOUR, 1 TSP. SALT, 1 TSP. BAKING POWDER, 1/2 CUP MILK, 2 EGG YOLKS, BEATEN, 2 EGG WHITES, BEATEN. Puree chestnuts in blender and add remaining ingredients, carefully folding in the well-beaten egg whites last. Pour into muffin pan and bake 350 degree oven

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CHESTNUT STUFFING WITH WILD RICE

1/2# BACON, CUBED	4 ONION, CHOPPED	3 CLOVES GARLIC CRUSHED
1 1/2 C. DICED CELERY	1 1/2# SLICED MUSHROOMS	1/2 C. MINCED PARSLEY
1/4 TSP. PEPPER	1 1/2 TBSP DRIED SAGE	8 C. CORNBREAD CRUMBS
1 1/2# CHESTNUTS	1 1/4 C. BUTTER, MELTED	1 C. BROTH/WATER
1/2 C. BRANDY.		

Brown bacon and drain. Stir fry onions, garlic, celery in drippings until golden. Add mushrooms, parsley and sage and saute, stirring occasionally for 8 to 10 minutes. Mix all remaining ingredients and use for stuffing. Wrap any leftover stuffing in foil, chill for 1 hour. Place in oven in roasting pan and let heat. This makes 3 quarts of stuffing.

COLONIAL PERIOD CHESTNUT STUFFING -ORIGIN-13 COLONIES- SERVES 6

(cooked)
 2# CHESTNUTS (PEELED) 2 TBSP. BUTTER SALT & PEPPER TO TASTE

Add butter to chestnuts and mash well. Blend in salt and pepper. Bake your turkey or chicken. Make your gravy and add the chestnut mixture to it. Spoon over your dressing and enjoy...