

Project Number:

LNE01-153

Project Title:

Beach Plum: Small Farm Sustainability Through Crop Diversification and Value Added Products.

Project Coordinator:

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Funding:

\$142,910

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March 1, 2001-April 30, 2003

Narrative

Summary

Beach plum, a fruiting shrub native to stressful dune habitats, has been wild collected since colonial times to make preserves and jelly. Today, jelly production from native stands is a small but thriving cottage industry in the Northeast. This project's goals were to develop an integrated system for a sustainable beach plum industry, including fruit production, processing the crop into value added commodities, developing niche markets for these products, and education of growers, processors and marketers. This research has helped to catalyze a new growth industry based on high value niche marketing in an at-risk agricultural region where small farms predominate.

Introduction

A fruiting shrub native to stressful dune habitats in the northeastern U.S., beach plum has been wild collected to make preserves and jelly. The goal of this research was to develop an integrated system for a sustainable beach plum industry, including fruit production, processing the crop into value added commodities, developing niche markets for these products, and education of growers, processors and marketers. Research falls into three main areas: horticultural production methods, fruit quality evaluation and processing methods, and economics and marketing.

A factorial experiment evaluating the effects of irrigation, mulch, and fertilizer on the growth and yield showed that fertilization increased growth and yield, while irrigation and mulch had no effect. This finding confirmed that beach plum is a stress tolerant crop that can be grown successfully without irrigation, even on sandy, low nutrient soils.

Wild fruit were sampled through the species range to determine the selection potential for desirable fruit traits. Fruit ranged from 13.5-19.7 mm in diameter and has consistently high in phenolic content and acidity. The antioxidant capacity of water soluble substances of selected samples fell

between 87 and 397 mg per 100 g of fruit, indicating that the beach plums are very good source of antioxidants.

Consumer focus group research conducted in New York City indicated that market expansion potential exists for beach plum products among gourmet consumers in coastal metropolitan areas. Consumer interest in beach plum presents market opportunities for new product development.

In spring 2001, 15 new beach plum plantings were installed in the northeast U.S. Plantings ranged from 10 plants to 800 (about 1 acre) with the mean number of plants/grower of 175. An additional 25 plantings were established on farms by May 2003. A website (<http://www.beachplum.cornell.edu/>) was activated in February of 2002 and includes handouts, photos, contacts, annual reports, a grower's guide, goals, news articles, a consumer focus group report and links to websites of similar interest.

Performance Targets

- We will contact all New England cranberry growers *and* 500 small farm entrepreneurs to identify early innovators desiring to enter the beach plum industry. By the end of this project, we will help early innovators plant 12 beach plum production orchards.
- Using the project's business plan, early innovators will mentor others. Forty new partners will be enlisted by project's end.
- Establish a germplasm collection for a beach plum improvement program; make an initial distribution of improved clones to producers.
- Establish quality control and assurance standards for fresh fruit, juice, pulp, jelly, jam and preserves.
- Link growers, producers and marketers; catalyze formation of a Beach Plum Cooperative to promote a sustainable niche market industry.

Materials and Methods

Our approach to sustainable new crop development simultaneously addressed three key components of long-term crop success: fruit production, processing and marketing. In order to get grower ownership of the project we distributed unimproved plants to growers. To maintain a high level of grower involvement in this project an Industry Advisory Board was formed to guide us at the projects start. We maintained that getting plants on growers' farms and the success of individual growers who will become champions of beach plum is necessary to establish this industry. Growers were recruited for this project by our website, extension personnel, newsletters, press publicity, and grower-to-grower interaction.

Below, headings indicate MATERIALS AND METHODS associated with MILESTONES of the corresponding heading.

Install beach plum plantings on private farms as well as regional research centers

Demonstration and research planting in Massachusetts--Located at Coonamessett Farm, a community supported agriculture farm in Falmouth, MA, this beach plum planting has served as a research and demonstration facility since 1997. Plants are being grown in a complete factorial experiment with the treatments of mulch (4" woodchip), fertilizer (lbs./a)-- N=60, P=138 pre, K=88, pH=6.5, and irrigation (1 inch supplemental water/week). A factorial experiment evaluating the effects of irrigation, mulch, and fertilizer on growth and yield of beach plum (1997-2001) was analyzed and is being prepared for publication.

Demonstration and Research Planting in New York—Andrew Senesac at the Long Island Horticultural Research and Extension Center in Riverhead, New York conducted a trial to determine beach plum's sensitivity to herbicides labeled for use on other fruit producing *Prunus* species. The trial followed IR-4 protocol. In June of 2001 two test plots were planted with beach plum that had been grown from wild collected seed. Plot A was planted with three-year-old plants that were trimmed to a

single stem (as a tree). Plot B was planted with first year seedlings. All plants were staked. Over two hundred beach plum plants were included in this field trial/demonstration planting.

The three-year-old plants were treated with Simazine and Oryzalin at the IR-4 protocol 1X and 2X rates (Princep 90WDG at 1 and 2 lbs. a.i./ac. and Surflan 4 AS at 2 and 4 lbs. a.i./ac). The first year seedlings were treated with Simazine, Oryzalin, Napropamide, and Fluazifop at the IR-4 protocol 1/2X, 1X, and 2X rates (Princep 90WDG at 0.5, 1, and 2 lbs. a.i./ac.; Surflan 4 AS at 1, 2, and 4 lbs. a.i./ac.; Devrinol 50DF at 2, 4, and 8 lbs. a.i./ac.; and Fusilade 2L at 0.125, 0.25, and 0.5 lbs. a.i./ac.).

Trial jelly runs/fruit quality

Samples of beach plum jam and jelly were produced following customary industry procedures and standards at the Food Ventures Center of the New York State Agricultural Experiment Station. The plums were pitted with a manual cherry pitter, the pulp was ground with a commercial food processor, blended with sugar and pectin mix, and cooked in a small kettle to make the jam. The jam conformed to the standards of identity with a Brix of 70 and a pH of 3.4. The jelly was prepared by partially chopping the fruit in a food processor, heating the fruit in a kettle to extract the color and flavors, and extracting the juice by squeezing the fruit through cheesecloth. The juice was then mixed with sugar and pectin mix, and cooked in the kettle to make the jelly. The prepared jelly had a Brix of 68 and a pH of 3.1.

In August 2001 fruit samples were collected from cultivated and wild stands for fruit quality analysis. Fruit samples were kept at 35°F until the analyses were performed. A total of 38 lots were studied. A sub-sample of each lot was reserved and frozen for additional analysis such as total phenolics, acid composition, and antioxidant activity. Whole fruit was evaluated for size, color and pulp yield. Juice samples for chemical analysis were produced by crushing the fruit and manually squeezing it through cheesecloth. The prepared samples were analyzed for color, pH, acidity and soluble solids (Brix).

The fruit was evaluated for size by measuring the height, width and depth of 10 randomly

selected berries from each lot. The color was measured by placing approximately 15 plums into a glass holder and by taking color readings using a colorimeter (HunterLab UltraScan XE). Pulp yield was estimated by weighing the pulp and the pits manually separated using a single fruit cherry pitter. Juice measurements were performed using a colorimeter, a pH meter and a manual refractometer for Brix readings. Acidity was determined by a standard titratable acidity procedure. All measurements were conducted in duplicates.

Tasting panels

In conjunction with other funding by Cornell University Agricultural Experiment Station Federal Formula Funds, Wen-fei Uva conducted consumer focus group research in New York City on March 13, 2002. A total of two two-hour focus groups were conducted among adults at a central interviewing facility in Manhattan, New York City on the evening of March 13, 2002. The discussion guide was developed by Richard Donovan of Donovan & Associates– a marketing research consulting firm. The discussions were facilitated by Richard Donovan and observed by Wen-fei Uva and Richard Uva.

The first focus group consisted of six adults, and the second had eight; each respondent was qualified on the following criteria:

1. He or she is the primary shopper for the household.
2. He or she regularly buys specialty, boutique or gourmet jams or jellies.
3. He or she had either bought a product made with beach plums and would buy again, or had not bought such a product but would be willing to try one.
4. He or she stated that three of four statements applied to them:
 - interested in and often buys specialty, gourmet or boutique food products not tried before

- personally prepares a formal dinner at home for friends or business associates at least three or four times a year
- often asked by friends and associates for advice or experience with various food products
- among friends and associates, is usually the first to buy new food products

All the respondents were between 25 and 54 years old except that one in each group was over 55 years old. All had completed a high school education, and there were two male respondents in each group. There was a mix of employed (full-/part-time) and not employed, and the spread of household income was from \$25,000 to \$75,000 and more.

Install germplasm planting

In the summer of 2001 botanists at herbaria across the northeast were contacted and polled as to the location of significant beach plum populations in their respective states. Access permission was obtained for the various sites and in late August/early September of 2001 a germplasm collection of beach plum seeds was made. The sites visited (Figure 1 and Table 1) cover almost all of beach plums native range. Seed and data from several plants per site were collected (142 plants in all). Additionally, fruit samples were collected and sent to the Department of Food Science and Technology, Cornell University, Geneva, NY where fruit quality analysis were performed as described above.

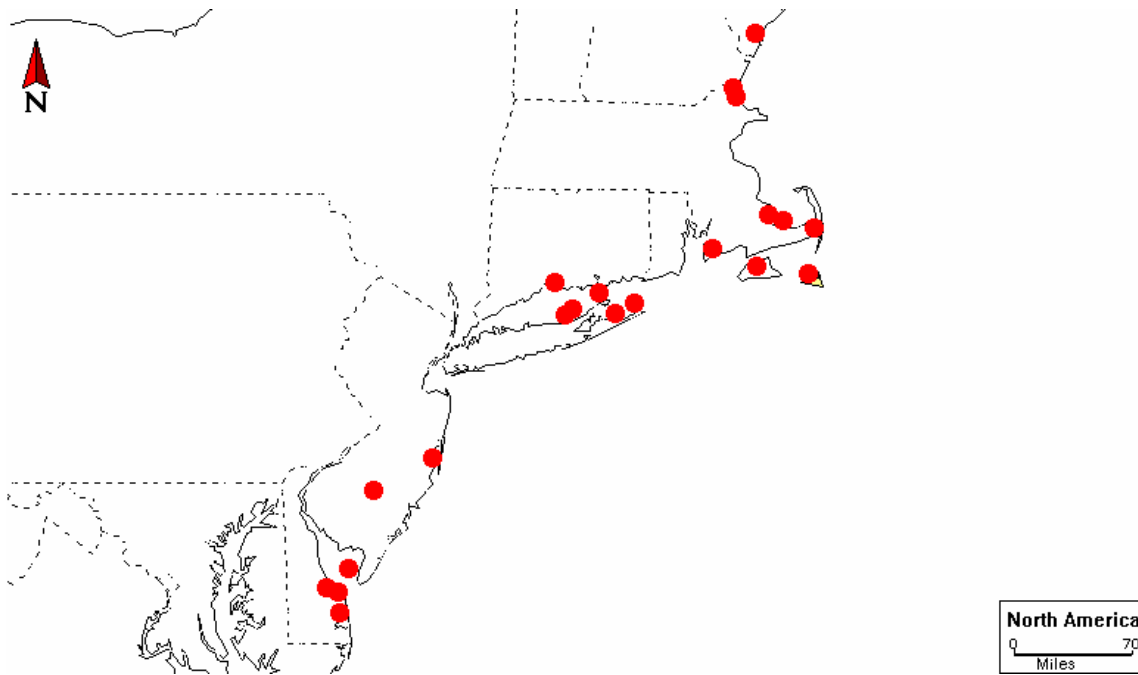


Figure 1. Map of seed collection sites. This also serves as a distribution map to where the species can be found.

Table 1. Names and locations of seed collection sites.

Site	City	State	Latitude	Longitude
Ogunquit Beach	Ogunquit	ME	43°15'57.5"	70°35'23.1"
Plum Island	Newburyport	MA	42°46'24.0"	70°48'23.4"
Crane Beach	Ipswich	MA	42°41'	70°46'
East Sandwich Beach	East Sandwich	MA	41°45'13.3"	70°26'52.5"
Sandy Neck Beach	Barnstable	MA	41°43'57.6"	70°21'33.3"
Gillis property	Chatham	MA	41°40'	69°55'
Westport Point	Westport	MA	41°30'39.2"	71°04'45.0"
North Neck	Martha's Vineyard	MA	41°23'	70°30'
Chaffinch Island	Guilford	CT	41°18'	71°41'
York and Madaket	Nantucket	MA	41°17'	70°
Orient Beach State Park	Orient Point	NY	41°07'47.0"	72°15'55.7"
Montauk Point State Park	Montauk	NY	41°04'33.7"	71°51'57.5"
Goldsmith Inlet	Southold	NY	41°03'25.4"	72°28'13.8"
Mattituck Inlet	Mattituck	NY	41°00'48.2"	72°33'33.6"
Hither Hills State Park	Montauk	NY	41°00'	72°02'
Island Beach State Park	Seaside Park	NJ	39°51'	74°05'
Wharton State Forest	Atsion	NJ	39°44'21.3"	74°43'32.2"
Higbee Beach	Cape May	NJ	38°57'43.1"	74°57'46.9"
Beach Plum Island	Broadkill Beach	DE	38°48'12.3"	75°11'11.5"
Cape Henlopen State Park	Lewes	DE	38°47'	75°05'
Delaware Seashore S. Park	Dewey Beach	DE	38°36'15.9"	75°03'43.0"

Milestones

Install beach plum plantings on private farms as well as regional research centers

In addition to distributing over 5000 plants to growers (details in the FARMER ADOPTION section) germplasm evaluation plantings were established at Cornell University, Western MD Research & Education Center, University of Massachusetts, Connecticut Agricultural Experiment Station as well as with Cape Cod Winery (MA), Lunar Berries (MA) and a Stark Bros. Nursery (MO).

Demonstration and research planting in Massachusetts--The results from the Coonamessett Farm trial (Figure 2) showed that fertilization increased growth and yield, while irrigation and mulch had no effect. This finding confirms that beach plum is a stress tolerant crop that can be grown successfully without irrigation, even on sandy, low nutrient soils.

A pest management phenological calendar (Table 2) was developed at Coonamessett Farm by David Simser of Cape Cod Cooperative Extension. This has become an important tool in preparing pest management plans because it links pest activity and harvest to degree-days.

Demonstration and Research Planting in New York--Results of the herbicide trial indicate that Simazine at 1 and 2 lbs. a.i./ac. injured the first year seedlings. This test has shown that many of the materials labeled for other fruit bearing Prunus species appear to be safe for beach plum. In 2002 the study was expanded to evaluate the tolerance of beach plum seedlings to a new active ingredient pre-emergence herbicide (azafenadin) and to a new formulation of an older herbicide dichlobenil was conducted by at our demonstration planting at the Long Island Horticultural Research and Extension Center. This study indicates that these herbicides caused no reduction in plant height in comparison to the hand weeded control.

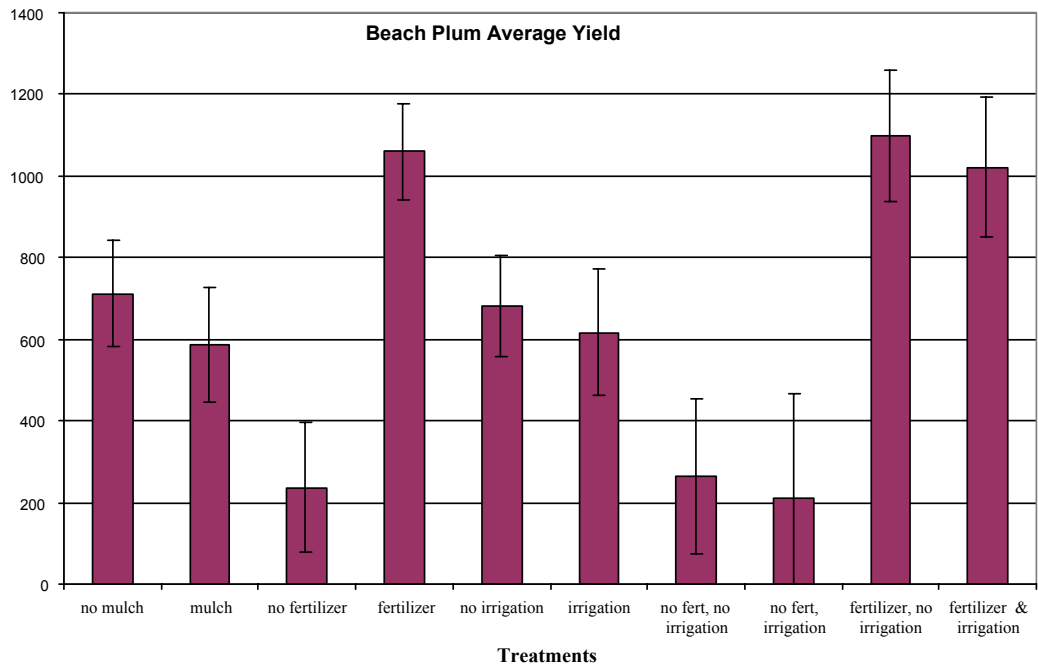


Figure 2. Average fruit yield by treatment at Coonamessett Farm for 2001.

Table 2. Beach plum phenology and management Inputs 2001

Date	Degree Days	Pest/Path	Action
14 April	6	----	Prune
22 April	43	----	Scouting
27 April	43	----	Scouting
28 April	43	Brown Rot	Sulfur ¹
3 May	80	----	Scouting
10 May	166	----	Scouting
20 May	228	Brown Rot	Scouting/Sulfur ²
29 May	273	Coleoptera ³	Scout/AzaDirect ⁴
4 June	332	----	Scouting
7 June	332	----	Scouting
11 June	405	----	Scouting
18 June	536	Coleoptera	AzaDirect ⁵
24 June	696	----	Scouting
10 July	1000	----	Scouting
30 July	1373	----	Scouting
7 August	1500	Brown Rot	Sulfur ⁶
13 August	1673	---	Harvest I
19 August	1800	---	Harvest II
24 August	1976	---	Harvest III
28 August	2100	---	Harvest IV
30 August	2100	---	Harvest V
4 September	2245	---	Harvest VI
6 September	2452	---	Harvest VII

¹ sulfur applied at 2.5 tsp/gallon (5 gallons finished)

² sulfur applied at 1.0 tsp/gallon (10 gallons finished)

³ Coleoptera includes plum curculio (*Conotrachelus nenuphar*) and plum gouger (*Anthonomus scutellaris*)

⁴ azadirect applied at 8 oz/20 gallons finished

⁵ azadirect applied at 4 oz/10 gallons finished

⁶ sulfur applied at 1.0 tsp/gallon (10 gallons finished)

Enlist new growers

Please see the FARMER ADOPTION section.

Grower field days

Please see the EVENTS section of the APPENDICES.

Enlist processors

The Chatham Jam and Jelly Shop, Chatham, Massachusetts, produced jelly from 3 selections of beach plum fruit grown at the Rutgers Cream Ridge Experiment Station. Steve Richards, a home-based wine maker in upstate NY as well as the Cape Cod Winery, produced beach plum wine. The Cornell University Dairy Plant produced beach plum ice cream. Products from the Food Ventures Center and our industry cooperators were used in consumer focus group research and to demonstrate beach plum's potential to growers, processors, and marketers at field days and events.

Exploratory interviews with chefs were conducted in the summer of 2002. Beach plum is particularly appealing to chefs who use locally grown produce to lend regional flavor to their menus. Desirable products for them include purees and fresh or frozen pitted fruits.

Trial jelly runs/fruit quality

The jam and jelly samples produced by the Food Ventures Center of the New York State Agricultural Experiment Station were used to explore market opportunities in demonstrations and focus groups.

The results of fruit quality evaluation show a large variation on all measurements for the beach plum samples studied. The fruit color values showed differences in intensity, hue, and lightness. Darker fruit had lower lightness "L" values such as 27.8 while lighter samples had higher values such as 41.9. Pulp yield varied from a low of 81 to a high of 91 %. Fruit characteristics varied considerably.

Height ranged from 13.5 mm to 19.7 mm, width ranged from 13.5 mm to 20.8 mm, and depth from 14.5 mm to 19.8 mm. The soluble solids (Brix) readings in the juice samples ranged from 9.4 to 19.0 while the acidity varied from 0.7 to 3.2 % (expressed as citric acid). The pH values ranged from 3.1 to 4.1. Fruit ranged has consistently high in phenolic content and acidity. The antioxidant capacity of water soluble substances of selected samples fell between 87 and 397 mg per 100 g of fruit, indicating that the beach plums are very good source of antioxidants.

Tasting panels

In conjunction with other funding provided by Cornell University Agricultural Experiment Station Federal Formula Funds, Wen-fei Uva conducted consumer focus group research in New York City on March 13, 2002. This results were as follows:

1. Market expansion potential exists for beach plum products among gourmet consumers in coastal metropolitan areas.
2. Packaging with price is the primary marketing tool to communicate that beach plum products are gourmet, giftable and otherwise special.
3. Gourmet jams and jellies are purchased from various independent stores or farm markets and not from supermarkets.
4. Jams or jellies made with cultivated beach plums will not impede consumers' interests in trying the product.
5. Consumers' interests in beach plum presented market opportunities for new product development.

Install germplasm planting

Seed has been grown and 1-year-old plants were distributed in April 2003 to Cornell University, Western MD Research & Education Center, University of Massachusetts, and Connecticut Agricultural

Experiment Station as well as with 2 grower/collaborators, in Massachusetts and a private nursery. Plantings at these sites (installed in late April/early May 2003) will be used in the future to evaluate and select beach plum cultivars that bear regularly, have good fruit quality, yield well, and are disease resistant. Having several test sites allows us to evaluate the same families in different environments.

Write quality standards and recipes

Our research is currently ongoing ('*Beach Plum: A New Crop for New Markets*,' funded by SARE 2003) and this will be completed over the next two years.

Extension guides

Please see the PUBLICATIONS /OUTREACH section.

Outcomes

An Industry Advisory Board was formed and met at Coonamessett Farm in May of 2001. The committee of 6 industry advisors met with 7 beach plum investigators to discuss the overall goals of the project. Discussed was the possibility of forming a collaborative group where different constituencies could exchange information. It was decided to communicate via e-mail and that information should be disseminated through a web site. A list of stakeholders was generated (Table 3), potential producers and processors who were interested in working with beach plum. Future challenges for the new industry were discussed. A second Advisory Board meeting took place at Coonamessett Farm on March 20, 2003 where it was decided to form the Beach Plum Consortium. As a result of these meetings a consortium group has met, a list serve has been formed, a stakeholder database and been made and an active website is posted.

Plants were grown and purchased to supply 33 farms with beach plum planting stock and 7 additional demonstration sites (Table 4). Our germplasm collection and the initial assessment of fruit

variability are complete. The amount of variation found in fruit quality indicates that there is ample opportunity for selecting superior traits. Germplasm collections are established at 4 of the demonstration sites in the northeast. Successful outreach activities brought in 46 ‘adopters’ in all to our project (Table 4).

Our research has shown that it may be feasible to grow beach plum without supplemental irrigation, thus reducing costs. Also, herbicide safety research has shown that herbicide products labeled for other fruit bearing *Prunus* species appear to be safe for beach plum. The lack of suitable pest control methods has been a stumbling block for other new crops but this will not be the case for beach plum. Our sample products, field days, presentations, publications and web site served as ambassadors for our research and education programs.

Please also see the FARMER ADOPTION section.

Table 3. List of active stakeholders by type and by state. The people enumerated below have corresponded with us about beach plum fruit production. Include are those who have requested information about the project or have requested plants and are current members of our electronic mail list.

	STATE																					
TYPE	CA	CT	GA	ID	KS	KY	MA	MD	ME	MI	MN	MO	NC	NH	NJ	NY	PA	RI	TN	VT	other	Grand Total
beekeeper							1															1
conservation									2							1						3
Farmer		2			1		22		2	1	1			2	2	14	1	1		1		51
farmer/processor							1									1				1		3
Gardener							2									3					1	6
government	1		1				5								2							9
Industry							2									1						3
landscaper																1						1
N.G.O.																	1					1
Nursery												1	1									2
Other																					1	1
processor							1	1								1						3
university		2		1		1	8	2							3	22			1	1		41
Writer							1									1						2
Grand Total	1	4	1	1	1	1	43	3	4	1	1	1	1	2	7	45	2	1	1	3	3	127

Table 4. The number of plants distributed by type of recipient, location and year.

TYPE	CITY	STATE	YEAR	PLANTS DISTRIBUTED
beekeeper	Falmouth	MA	2003	15
conservation	Freeport	NY	2003	40
farmer	El Dorado	KS	2003	100
farmer	Nantucket	MA	2002	10
farmer	Wareham	MA	2002	200
farmer	Plymouth	MA	2002	40
farmer	Brewster	MA	2002	40
farmer	Carver	MA	2002	500
farmer	Rochester	MA	2002	800
farmer	Cotuit	MA	2003	100
farmer	Siasconset	MA	2003	100
farmer	Amherst	MA	2003	20
farmer	Cataumet	MA	2003	200
farmer	Brewster	MA	2003	50
farmer	Mattapoisett	MA	2003	500
farmer	West Gardiner	ME	2003	30
farmer	Corrolla	NC	2003	30
farmer	Westmoreland	NH	2003	50
farmer	Cape May Ct. House	NJ	2003	15
farmer	W. Cape May	NJ	2003	250
farmer	Cutchoge	NY	2002	100
farmer	East Hampton	NY	2002	200
farmer	Southampton	NY	2002	200
farmer	New Paltz	NY	2002	200
farmer	Trumansburg	NY	2002	25
farmer	Dryden	NY	2002	40
farmer	Clinton Corners	NY	2003	10
farmer	Malone	NY	2003	100
farmer	Liverpool	NY	2003	100
farmer	Rome	NY	2003	100
farmer	Appleton	NY	2003	20
farmer	Ithaca	NY	2003	20
farmer	Riverhead	NY	2003	200
farmer/processor	Alburg	VT	2003	40
gardener	W. Harwich	MA	2003	5
gardener	North Chatham	NY	2003	15
gardener	Canton	NY	2003	15
gardener	Centerport	NY	2003	15
nursery	Louisiana	MO	2003	100
university	New Haven	CT	2003	250
university	Amherst	MA	2003	200
university	Keedysville	MD	2003	350
university	Cape May Ct. House	NJ	2003	100
university	Riverhead	NY	2002	200
university	Hudson	NY	2002	40
university	Riverhead	NY	2003	30

TOTAL = 5765

Economic Analysis

Cost evaluation templates were constructed to estimate costs of establishing and producing beach plum, however the analysis is incomplete and will be done in 2004. Worksheets were prepared for growers to evaluate their own costs and profitability of producing beach plum. Information needed to complete the cost evaluation, including capital requirements for establishing a beach plum orchard and cultural practices for producing beach plum in years 1 to 5, will be assessed by horticulturists and grower collaborators. Assumptions for input prices, potential crop yields, and fruit prices will be collected based on experts' opinions, grower and processor collaborators inputs, and input supplier's quotes. Standard cost budgets and break-even analysis will be developed based on the assumptions.

Publications/Outreach

Our website (<http://www.beachplum.cornell.edu/>) was activated in February of 2002 and serves as our primary outreach tool. It includes field day handouts, photos, contacts, annual reports, a grower's guide, goals, news articles, a consumer focus group report and links to websites of interest. This site will act as a critical magnet to bring those interested in beach plum together. An average of 355 website visitations per month have been recorded since August of 2002. In addition to the presentations listed below please see the EVENTS section of the APPENDIX.

Web site

Cornell University 2003. Beach Plum: Small farm sustainability through crop diversification and value-added products. <http://www.beachplum.cornell.edu/>

Reports

Senesac, A. and I. Tsontakis-Bradley. 2001. Weed management in ornamentals, turf grass, vegetables and fruit. Research Report 14, Long Island Research and Extension Center, Riverhead, NY

Uva, R.H. 2003. Growth and yield of beach plum (*Prunus maritima* Marshall) in horticultural, land restoration, and ecological systems. Dissertation, Cornell University, Ithaca, NY.

Uva, R.H. and T.H. Whitlow. Beach plum. The Encyclopedia of Fruits and Nuts, J. Janick ed., CABI publishing (in press)

Proceedings

Senesac, A.F. 2003. Herbicide tolerance of beach plum (*Prunus maritima*) for commercial cultivation. Proc 57th Annual Meeting of the Northeast Weed Science Society, Baltimore, MD.

Uva, R. H., T.H. Whitlow. Beach Plum (*Prunus maritima* Marsh): Small Farm Sustainability Through Crop Diversification and Value Added Products. ASHS Annual Conference, October 4, 2003.

Uva, R.H., T.H. Whitlow, and M.P. Pritts. Yield component analysis of beach plum, a new fruit crop. ASHS Annual Conference, June 24, 2001

Presentations

Senesac, A.F. Research overview: beach plum, A Symposium on Landscaping with Native Plants, Calverton, (Long Island) NY, Nov. 6, 2001

Uva, R.H. Beach plum, Small fruit processing meeting, Cooperative Extension, Hudson, NY, March 29, 2003.

Uva, R.H. and T.H. Whitlow. Beach plum new crop development, Long Island Agriculture Forum, Riverhead, NY, January 10, 2003.

Uva, R.H., From sand dunes to the orchard: beach plum new crop development. Liberty Hyde Bailey Garden Club, Nov 13, 2001

Uva, R.H., Low input beach plum production. HORT 415 Principles and Practices of Agroforestry, Cornell University, Nov. 28, 2001

Newsletters

Uva, R. H. and T. H. Whitlow 2000. Beach plum cultivation: a high value native fruit. Bogside, the newsletter of the Cape Cod Cranberry Grower' Association 12(7): 3.

Uva, R.H. and T.H. Whitlow. Beach plum: a shrub for low input landscapes, Landscape Plant News, Chanhassen, MN (in press).

Farmer Adoption

33 new beach plum plantings were installed on farms; 30 of these were in the Northeastern U.S. (Table 5). Size of plantings ranged from 10 plants to 800 (about 1 acre) with the mean number of plants per grower being 136. A break down of plant distribution by state is presented in table 5.

Table 5. Plant distribution by state type of grower.

Sum of PLANTS DISTRIBUTED TYPE	STATE											Grand Total
	CT	KS	MA	MD	ME	MO	NC	NH	NJ	NY	VT	
beekeeper			15									15
conservation										40		40
farmer		100	2560		30		30	50	265	1315		4350
farmer/processor											40	40
gardener			5							45		50
nursery						100						100
university	250		200	350					100	270		1170
Grand Total	250	100	2780	350	30	100	30	50	365	1670	40	5765

Areas Needing Further Study

We have already catalyzed a marketing consortium composed of industry leaders of different sectors, for the purpose of broadening the consumer base for beach plum products, and establishing a niche identity for beach plum. Tools for economic analysis of beach plum crop production have been developed but we need to complete the work and carry out a feasibility analysis. Through our established plant selection trials we need to propagate and distribute plants that bear regularly, have good yield, and fruit quality and are pest and disease resistant. Biennial bearing has been observed in beach plum. We need to verify that are cultural treatments, and pruning plan will moderate the effects of biennial bearing. We have to continue to council growers on beach plum culture and encourage them to take the lead in beach plum new crop development.

Appendices

1. Changes in Plan of Work

None significant

2. Resources

Please see Appendix 2.

3. Events

Twenty-five people attended the beach plum field day on Aug. 13, 2002 at our demonstration site at Coonamessett Farm in Falmouth, MA, including farmers, wine makers, food processors, extension educators, as well as Douglas Gillespie, Commissioner of the Massachusetts Department of Food and Agriculture. In addition to project updates from Cornell and Cape Cod Cooperative Extension, participants tasted and rated samples of jam and jelly from the New York State Food Ventures Center and The Chatham Jam and Jelly Shop as well as 3 beach plum wines made by Steve Richards, a home-based wine maker in Hector, NY and the Cape Cod Winery.

We manned a poster display and field tour during the Long Island Horticultural Research and Extension Center's 80th Anniversary Celebration on Sept. 19, 2002. The entire event had 200 attendees including New York State Agriculture Commissioner, Nathan Rudgers. The proceedings of the field days are posted on the web site with photographs of the event.

4. Publicity

The following was a feature article on the project:

Dunn, K.L., 2002. Ripe for development; beach plums as regional niche crop, *Farming: The Journal of Northeast Agriculture* Vol. 5, pp. 19,30-33. Farming has 36,000 subscribers, and the article was

responsible for recruiting 13 of the 22 new growers to the project. Other publicity mentioning our work, field days, and website was published in print (Country Folks Grower, Cranberry Station Newsletter, Community, food, and Agriculture Program News, Taunton Daily Gazette, 2003 SARE Annual Report, Healthy Fruit, Massachusetts Berry Notes, and internet media Ag. Upbeat, Cornell Farming Alternatives, and Great Lake Fruit Workers List serve).

Please see Appendix 4. for copies of the articles.

5. Economic Data

None presented.

6. Farmer Involvement

Please see Appendices 6 & 7.

7. Other Audiences

Please see Appendices 6 & 7.

8. Farmer Testimonials

Please see Appendix 8.

9. Final Financial Report

A Final Financial Report will be submitted under separate cover by the Cornell University Division of Financial Affairs.

10. Project Profile

Please see Appendix 10.

11. Slides/Photos

Please see Appendix 11.