

Department of Agriculture, Trade & Consumer Protection
Division of Marketing
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Grant Program

2002 Project Final Report

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Commercial Hazelnut Development Project

Final Report

1. Description of original intent & perceived benefit to WI agriculture.

The goal of this project was to create viable economic opportunities for farmers in Wisconsin through the development and implementation of commercial hazelnut plantations.

The intent and objectives of the Commercial Hazelnut Development Project were as follows:

1) Development of a hazelnut establishment handbook 2) Development of a maintenance handbook for hazelnut production 3) Implementation of field days and workshops that will provide educational opportunities to Wisconsin farmers

The objectives of the project were carried out in accordance with the original grant proposal and all objectives have been met.

This project was undertaken to provide Wisconsin producers with documented agronomic practices for hazelnut production that are field-proven. Production of the handbook will provide the foundation for producers to integrate hazelnut production into existing agricultural systems. This integration will help landowners increase profits, diversify, and protect the environment.

2. Describe the work conducted in this project.

Funding from the ADD Grant Program has been key in the dramatic advancement of the hazelnut industry in Wisconsin. Without the ADD funding for this project, Mark Shepard would not have had the ability to devote so much time to developing the agronomic and economic data needed for new growers to be informed. There would be literally hundreds fewer people who would know about the possibilities of growing Hazelnuts commercially. There is no doubt the "Hybrid Hazelnut Handbook" would have never been developed with funding from the ADD program.

The development, publication, and printing of the "Hybrid Hazelnut Handbook" in just one year was the major success of this project. Other successes include the multitude of information that has been presented to Wisconsin landowners and the general public on hazelnut production.

The biggest challenge of this project was to gather and condense all the existing information on hazelnut production and combine that with the research that is on-going at both New Forest Farm and Badgersett Research Farm into the document we have today.

3. Describe the public outreach efforts of this project.

The "Hybrid Hazelnut Handbook" is enclosed with this final report and represents the literature/educational product of this project.

During the 2001 and 2002 season, a total of 10 hazelnut related public presentations were held as well as 4 public farm tours. Two, one-hour radio interviews were held and many interviews with newspapers were given. Probably the most significant workshop was an Agroforestry Workshop held April 13th in LaCrosse. Fully half of the workshops sessions held at the conference were hazelnut related. The total number of landowners that received information through these workshops was estimated to be six-hundred. Another 150 landowners were mailed information regarding the project as of 06/30/2002.

Media contacts are far too many to list but some of the more important include the Milwaukee Journal and WI Public Radio.

4. Describe the results of this project.

The "Hybrid Hazelnut Handbook" is the major product of this project. The results of the handbook have exceeded our expectations as we never envisioned the handbook would be so inclusive and thorough. The assistance of Phillip Rutter from Badgersett Research Corporation was a major factor in allowing us to produce such a great document on a limited budget.

Several innovations have occurred through this project. A hazelnut husker was built and tested during this project. It was because of this project that at least six growers in Wisconsin have begun planting commercial-sizes hazelnut fields. In addition, interest in hazelnut production has grown to the point that we have started the development of a Hazelnut Growers Association. The first meeting was held in April and another meeting will be held in August. Contacts have been made with BEI Company regarding the development of a mechanized hazel harvester. Tentative plans are being made for BEI to do a test run of their blueberry harvester on hazels this fall. It is assumed that with a few modification the blueberry harvest may work quite well on hybrid hazels. We are maintaining correspondence with Badger Oil Company on the prospects for hazelnut oil. Last year Badger Oil completed the first commercial press of hazelnut oil from Midwestern-grown hazelnuts. The potential markets for hazel oil may turn out to be much greater than the raw nut meats themselves.

One thing we have learned from this project is that the Hazelnut Handbook can not be a static document. Since the growing of bush hazels is so new, innovations will come quickly and changes will be rapid and dramatic. Therefore, the Southwest Badger RC&D Council will continue to work with Mark Shepard and Phillip Rutter to update the manual as needed and provide it free of charge at the council website and the Badgersett Research Corp. website.

This project has led to a flurry of interest in hazelnut production which has created a demand that the council and Mark Shepard are having a hard time meeting. The project will inevitably lead to more hazels being commercially planting which will increase bussiness for New Forest Farm.

The successful completion of the Commercial Hazelnut Development Project has encouraged many people to plant hazelnut on their farms as an alternative crop. This not only represents new capital investment on the part of the entrepreneurs that have established hazelnut plantings, it represents an new emerging agricultural industry.

Since hazelnut has been a relatively unknown crop in to Wisconsin producers, this project has introduced farmers and consumers to an entirely new product. Hazelnut production in the Midwest is minimal so the potential for expanding production is enormous. Approximately 80 percent of the hazelnut that is consumed in the U.S. is imported. This fact alone emphasizes the incredible potential for Wisconsin producers. Until this project was initiated, few if any landowners in Wisconsin were growing or even thinking about growing hazelnut as an agricultural crop. The only reason for the lack of adoption was the sheer lack of agronomic data. At one point soybeans were as unknown as hazelnut and we know all too well about that success story. As a result of this project, at least 20 landowners in the state are growing hazelnuts for production, six of these are of commercial size.. The impact of this project on widespread adoption of hazelnut production will not be realized for several years. However, there is no doubt that the development of the handbook will increase interest in this crop and encourage the establishment of hundreds of acres of hazelnut.

This project has definitely improved the competitive position of Wisconsin's agricultural industry. This is not a blank statement! Consider the fact that the only source of commercial quality disease resistant hazels is in Minnesota, wouldn't you think MN would be the leader in developing this industry in the Midwest? Their not, and due to the efforts of Mark Shepard in cooperation with Southwest Badger RC&D and funding through the ADD program, Wisconsin is becoming the leader and WI producers will be the beneficiary of our efforts.

5. How will the Wisconsin agriculture industry be able to use the information from this project?

The development of the handbook was a major accomplishment as it contains invaluable information for producers getting started in hazelnut production. Prior to the handbook, landowners were left to experiment by trial and error and at \$3.50 - \$4.00 a plant, experimentation that fails is costly. This lack of data is the exact reason hazelnut production has not been accepted in main stream agriculture. The handbook constitutes a major achievement in the progression of woody agriculture in Wisconsin.

Phase one of this project has proven that hazelnut production is profitable, actually more profitable than corn and soybeans. Since the markets for hazelnut are so large, any farmer in Wisconsin contemplating some type of diversification can utilize the handbook to successfully grow hazelnut on their farm. The potential for marketing hazelnuts on a small scale is enormous so a planting of 1-2 acres is still a viable enterprise.

The handbook will be available at no cost from the Southwest Badger RC&D Council. In addition, the handbook will be listed on the Southwest Badger website and the Badgersett Research Corporation website.

6. Include an analysis of the information gained from this project.

The attached document contains the "Hybrid Hazelnut Handbook". The handbook contains 50 pages of detailed field trialed procedures for planting and caring for hybrid hazelnut.

Analysis of Trials Conducted Through this Project

Some very interesting and cost saving information was gathered through the fertilizer, herbicide and tube trials conducted through this project. The field trials were conducted only on hybrid hazelnuts that were planted during the project duration. More research needs to be conducted to determine the effects of herbicides, fertilizers, and tubes on established plants. Due to the fact that the trial provides such short term data, the actual benefits/detriments of the trials may not be realized for some time.

The addition of fertilizer to newly planted hazels showed no quantifiable stem or leaf growth even with increasing rates of fertilizer. Although addition of fertilizer at planting is still recommended, it appears that year-one fertilization may not justify the cost. More research should be conducted to determine if root growth indeed increases with fertilization which the results of would not show up until year 2 or 3 in regards to top growth.

The herbicide trials consisted of using three chemicals, Vantage, Fusillade, and Princept. The first two chemicals are grass herbicides and the last is a pre-emergence herbicide. Due to the fact that the grasses had exceeded ten inches tall at the time of application, the herbicide rates were doubled. Vantage provided no weed control at all and had little effect on the hazels. Fusillade provided some weed control but not at an economically feasible level. Fusillade did cause some mortality on the hazels. Princept provided some control of grasses and broadleaf's when applied and actually had good control the following spring. Princept did cause some mortality of the hybrid hazels. We have assumed that had Princept been applied prior to leaf out that little mortality would have occurred and weed control would have been good. It appears that mowing may be a better option when trying to control grasses over ten inches and pre-emergence herbicides should be tested on small areas before applying to a whole field as mortality may occur.

Tree tubes trials showed little benefit in regards to increase growth but did reduce hazel mortality during an extremely dry period that occurred in the summer of 2001. The tubes also reduced rodent mortality.