
Oriental Vegetable Production and Marketing Evaluation Project 2002 Report

(2002 Report to MRAC)

Project Objective:

To evaluate the agronomic and market potential of selected Oriental crops and varieties for irrigated commercial production under Manitoba conditions.

Project Sponsor: Manitoba Horticultural Productivity Enhancement Centre (MHPEC)

Project Partners:

- 1) Manitoba Rural Adaptation Council (MRAC)
- 2) Covering New Ground (CNG)
- 3) Manitoba Agriculture and Food Soils and Crops Branch
- 4) Manitoba Crop Diversification Centre (MCDC)
- 5) University of Manitoba Faculty of Agriculture and Food Sciences
- 6) T&T Seeds
- 6) Garden Market I G A
- 7) Phoenix Gardens
- 8) PlastiTech

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2002 Oriental Vegetable Project Overview

The project consisted of four trials:

1. Variety Trials:

Bok Choy- Green Boy, Green Farm

Napa Cabbage- New Summer King

Yu Choy- Yu Tsai Sum

Green Cabbage- Early 98, Winner 85, (Morris, check variety)

Cauliflower- Snow King, (Minute Man, check variety)

Cucumber- Chun Fenger #2, Outdoor#1, Sitai, Chun Fenger Hao

Watermelon- Black Baby, Green Skin Mini Bao, Mini Bao 99, Seenong, Zhongyuan Baby, Golden Skin, (Shencai 96-38 check variety)

Tomato- Dong Fang 93, Dong Fang 96

Baby Corn- Baby Corn #1, Yanong #6, Seenong #1 (Big Jim, check variety)

Soy Bean- Shennong, (Butterbean, check variety)

Carrot- Red Jade, (Nantes Half Long, check variety)

Lo Bok- Red Fleshed, (White Rat, check variety)

Asparagus Lettuce- White Skin, Shennong

Kolrabi- Jin Bai

Peppers- Yuan #3, Yuan #1, Yuyi #16, Lu #4, Richters Jalapeno, William Dam Cayenne, (Shen Jiao, check variety)

Hu Gwa- Hu Gua #2

Snake Bean- Long Snake

Fu Gwa- Shennong #1

Jingjie- Bigger Leaf

Long Bean- Lu Long

Hyacinth Bean- Douwang #1, Spring #1

Onion- Dachong #1

Wintermelon- Gian Gua

Sin Qua- Xianging

Tong Choy- Wide Leaf, Narrow Leaf

Peanut- Early 90

Zucchini- Zhenzhu

Pumpkin-Dahe #4, Changba, Yellowdog #2

2. Organic Pesticide Trial:

Pepper- Shen Jiao

Eggplant- Shen Quie

Bok Choy- Gracious

Gai Lon- Veg Gin

Napa Cabbage- Spring King

3. Plastic Mulch Trial:

Watermelon- Shencai 96-38

Muskmelon- Yellow Gold

Cucumber- Chun Fenger Hao

Long Bean- Liana

Pepper- Shen Jiao

4. Pest & Weather Module

Organic and Conventional Pest Control Methods:

BTK, End All, Hot Pepper Wax,
Worm Gold, Sevin, Thiodan.

Mulch Types:

Black Embossed, Solar, Green and Red

Executive Summary

In 1997 the Oriental Vegetable Project was initiated in order to address the growing market demand for a continuous supply of locally grown Oriental produce. The recommendations and conclusions for this 2002 report are based in part on research results gathered over the past five years. The project, sponsored by the Manitoba Horticultural Productivity Enhancement Centre Inc., is a multi partner initiative involving public groups such as Vegetable Growers Association of Manitoba, Manitoba Crop Development Centre, Manitoba Agriculture and Food, University of Manitoba as well as local, national and international retail / seed / horticulture supply companies.

Under the supervision of Manitoba Agriculture and Food Soils and Crops Branch the project continues to work toward its objective, which is the commercialization of Oriental vegetable production in Manitoba. The 2002 field season evaluated thirty different vegetable crops and a total of sixty-seven varieties of those crops. Field trials were conducted at the MCDC site in Portage la Prairie and demonstration sites at MCDC stations in Carberry and Winkler gave producers a first hand look at some of the Oriental crop varieties being grown in Manitoba. Where possible produce samples of field tested entries were harvested and sent to IGA Market Garden in Portage la Prairie, Manitoba for evaluation and market research, with the goal of providing producers with current market information.

Results from this years trials again indicate that a wide range of Oriental crop varieties can be produced in Manitoba, and have strong market potential as locally grown commodities. Many crops performed extremely well this season, including oriental cucumber, snow peas, oriental watermelon, oriental muskmelon, oriental tomato, oriental zucchini, and oriental carrot varieties. Severe insect damage contributed to significant crop loss in the Chinese cauliflower, bok choy, eggplant, and napa cabbage varieties. Market potential exists for many of the successful crops, but further work is required to optimize production and control pests.

This was the second year that organic pest control products were used on oriental vegetable field trials. However, intense insect pressures on most crops (napa cabbage, eggplant, bok choy) in this trial made the organic pest control products and as well as the conventional pesticide treatments ineffective. It is hoped that use of various pest control strategies can reduce this overwhelming insect pressure in future research years.

In the mulch trial, it was hoped that mulches could increase soil heat units, thereby accelerating plant maturity in our short Manitoba growing season. As well, the potential mulches have as an alternative weed control method were examined. Five mulch types were evaluated: clear, black embossed, red coloured, green coloured and solar mulch materials. Yields increased for all varieties grown on mulch as opposed to bare ground production with the exception of oriental watermelon. All of the mulch types also proved to be effective as an alternative weed control method. Management of weeds required less time and labour with all mulch treatments compared to no mulch.

Continued research will be required to develop production techniques and practices to minimize crop loss due to disease and pest occurrence, and provide producers with oriental crop varieties production information.

The project continues to receive positive support from all sectors, and we have seen a steady increase in the number of producers involved in Oriental vegetable production. Market research results indicate a keen interest in pursuing a number of the Oriental vegetable commodities for expanded production in Manitoba. Work undertaken in the oriental-style vegetable segment of the industry has shown that these vegetables can be commercially grown in Manitoba. Producers and processors have the interest and the intensive management ability to grow, harvest, store, process and transport top quality produce to market. There is tremendous potential for developing high value crops with potential for high return.

Site Specifics

Location: Manitoba Crop Diversification Centre Portage La Prairie

Progress: 2002 - Sixth Year

Soil Type and Fertility:

Soil-Clay Loam; nitrogen 65 lbs./acre, phosphate 41 lbs./acre, potassium 432 lbs./acre, sulfate 160 lbs./acre, pH- 7.8

Precipitation and Irrigation:

	May	June	July	Aug.	Sept.	Total
Precipitation (mm)	32.7	125.6	70.8	98.9	36.5	364.5
Irrigation (mm)	18.7	56.2	31.2	6.2	0.0	112.3
Total: (mm)	51.4	181.8	102.0	105.1	36.5	476.8

All data recorded at on site MCDC weather station.

Air Temperature:

	May	June	July	Aug.	Sept.
2002 Max. Mean	14.8	22.7	26.6	22.8	18.8
2002 Min. Mean	1.5	12.0	15.3	12.2	8.3
1971-2000 Normal Mean Max.	19.3	23.4	26.3	25.1	18.4
1971-2000 Normal Mean Min.	5.5	10.8	13.6	11.8	6.3

Temperatures units are in Celsius. All data recorded at Environment Canada Portage (Southport) weather station.

The first frost of the 2002 growing season occurred on September 26, 2002 for a total of 123 frost free days (Environment Canada Portage (Southport) weather station data).