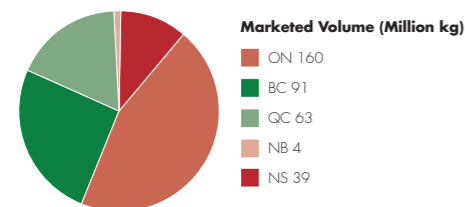
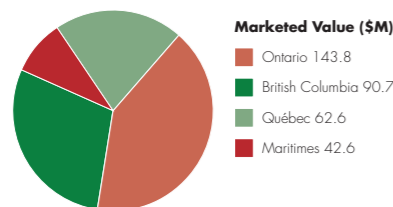


## VITAL STATISTICS OF THE CANADIAN APPLE INDUSTRY

- There are more than 4,500 commercial apple orchards in Canada
- The Canadian apple industry produces 340,000 metric tonnes of apples on over 20,000 hectares and a farm gate value of \$132 million
- In 2006 54,914 metric tonnes of apples were exported to other countries (mostly the U.S.). Value of this market was \$34.7 million
- Canada ranks 25<sup>th</sup> in the world's top apple producing countries
- Acreage of the traditionally major cultivars grown in Canada are decreasing (e.g. McIntosh, Red Delicious, Empire, Northern Spy, Spartan, Idared)
- Gala is the 4<sup>th</sup> major cultivar, by acreage, currently grown in Canada.
- Newer cultivars, like Ambrosia, Honeycrisp and Gingergold, make up a significant proportion of new plantings.
- Canadian apple growers have averaged a 50% reduction in pesticide use over the last 15 years by using integrated pest management strategies.



### Total Hectares

Maritimes: 2,732 Québec: 5,868  
Ontario: 7,325 British Columbia: 4,249

Sources: Agriculture and Agri-Food Canada, Statistics Canada, and the Canadian Horticultural Council.



### However, Canadian apple growers face many obstacles, such as:

- returns below their cost of production
- stiff competition from foreign product on the retail shelf as a result of global competition and retailer consolidation
- competing with an increasing diversity of fruit available to consumers (e.g. citrus, tropical fruit, etc.)
- climate change (e.g. drier summers, more frequent hail storms, etc.) and
- pesticide resistance in key apple pests.

### In response, Canadian apple growers have:

- planted new consumer-desired apple cultivars
- renovated orchards into higher density and more efficient plantings
- fine-tuned horticultural practices to produce the highest quality apples possible
- reduced pesticide use through the use of integrated pest management technologies.

These strategies have culminated in the adoption of a production method termed Integrated Fruit Production.

Integrated Fruit Production, or IFP, represents a blueprint for the future sustainability of our industry. IFP is a systems approach to orcharding, which promotes sustainable agriculture practices to produce optimal yields of high-quality fruit while protecting the environment. IFP seeks to balance farm inputs with outputs, maintain environmental integrity and biodiversity in the rural landscape, and encompasses the entire farm as a unit for economically viable crop production. In adopting IFP practices on our farms we emphasize the reduced use of pesticides through integrated pest management practices, attention to tree health through a balanced nutrition program and production of high quality fruit. IFP includes elements of grower training, mentoring, networking and information-sharing, as well as working on a continuum of changing practices to improve performance and quality.

GROWN IN HARMONY

## A NATIONAL APPLE RESEARCH STRATEGY FOR ALL CANADIAN APPLE GROWERS

The national apple research and development strategy, summarized in this brochure, is the result of an industry workshop held in January 2007 in Toronto. The workshop was attended by industry representatives from all major apple growing provinces, as well as provincial apple specialists, private consultants and federal researchers. This strategy speaks with one voice for all apple growers in Canada and paves the path for defining the following industry goals:

1. To provide our consumers and global markets with the highest quality, safe and nutritious fruit in the world.
2. To increase our global competitiveness through research and development, leading to improved products and production strategies.
3. To protect our environment, including our air, water, soil, through research and development leading to reduced pesticide use, enhanced land stewardship practices and promoting the consumption of local food to Canadians to reduce greenhouse emissions.
4. To provide Agriculture and Agri-Food Canada (AAFC), and other research institutions, with clear direction on research priorities for our industry.
5. To provide the Pest Management Regulatory Agency (PMRA) with our requirements for new and improved reduced-risk pesticide registrations.
6. To increase and enhance partnerships between researchers and industry, and encourage interdisciplinary research and development directed by the specific production and technology needs of our industry.

### CANADIAN APPLE INDUSTRY

#### Vision STATEMENT

To enhance the sustainable production of high quality, safe and nutritious apples and apple products for domestic and export markets, through science and innovation.

Photos courtesy of:  
Ontario Apple Growers  
NS Fruit Growers Association  
BC Tree Fruits Limited  
EarthTramper Consulting  
BC Fruit Growers Association  
Norfolk Fruit Growers Association

## A Recipe for Health and Prosperity:

### A National Research and Development Strategy for Canada's Apple Industry



CANADIAN HORTICULTURAL COUNCIL  
CONSEIL CANADIEN DE L'HORTICULTURE



Fédération des Producteurs  
de Pommes du Québec



## NEW VARIETY AND ROOTSTOCK DEVELOPMENT



### a) Development and adoption of new apple cultivars

New cultivars that break through onto retail shelves command a higher price, providing higher profit margins for apple growers and greater choice for consumers.



#### Research and Development Priorities:

- ▶ Maintain and expand Canadian breeding and evaluation programs at various Agriculture and Agri-Food Canada research stations (e.g. Summerland, Saint-Jean-sur-Richelieu, Kentville, Bouctouche) and field-test in different geographic apple production areas in Canada.
- ▶ AAFC researchers must maintain communication and seek collaboration with international agencies (i.e. exchange of plant material/field test results, genomic mapping).

### b) Rootstock development

Development and testing of rootstocks for Canadian and provincial conditions (e.g. precocity, winter hardiness, disease and insect resistance, etc.) must be expanded.

#### Research and Development Priorities:

- ▶ Ongoing and expanded evaluation of new precocious and dwarfing apple rootstocks to determine those best suited to the various Canadian apple growing regions.
- ▶ AAFC researchers must collaborate with international rootstock developers and access rootstocks with desired traits for testing under the various Canadian apple growing regions.

## FRUIT QUALITY AND YIELD INCREASE



### a) Quality fruit production

To compete in the world market, Canadian apple growers must continually advance their orchard management practices in an effort to produce the highest apple quality and yield possible, with the end goal of increased profits.

#### Research and Development Priorities:

- ▶ Expand regional research programs to develop the ideal planting systems, densities and canopy management of standard and new cultivars
- ▶ Expand research with plant growth regulators and nutrient/fertilizer programs
- ▶ Develop and evaluate organic production systems.
- ▶ Develop improved pesticide application technologies and machinery to aid in thinning, pruning and harvesting.
- ▶ Development of strategies to reduce bruising and optimum harvest timings for new cultivars.

### b) Maintain fruit quality in storage

Increasing the storage and shelf-life of apple cultivars allows Canadian growers to better supply the market with high quality and nutritious apples.

#### Research and Development Priorities:

- ▶ Ongoing evaluation of new compounds and technologies to improve fruit quality and maintain fruit firmness, while reducing storage rot problems
- ▶ Develop optimum handling and storage recommendations for new cultivars (e.g. Honeycrisp, Ambrosia)
- ▶ Develop methods to measure and monitor internal quality for specific cultivars.

## SUSTAINABLE PEST MANAGEMENT STRATEGIES

Integrated pest management has been widely adopted by Canadian apple growers resulting in the reduction of pesticide use by more than 50% over the last few decades. The ongoing deregistration of some pesticides, pesticide resistance and new pest problems require strong emphasis on research and development in pest management.



#### Research and Development Priorities:

- ▶ Evaluate reduced risk products under commercial conditions and find fit in current IPM programs
- ▶ Conduct regional evaluations for the development of resistance to pesticides, develop baseline resistance testing techniques, and develop resistance management programs.
- ▶ Develop and evaluate new IPM and organic pest management strategies.
- ▶ Evaluate effects of non-pesticide alternatives such as mulching, sterile insect release, pheromone mating disruption, biological control, etc.

## APPLES AS VALUE-ADDED, AND HEALTH & WELLNESS PRODUCTS

Apples are a versatile fruit that can be eaten fresh, cooked, baked, grilled, pureed, juiced, dried, frozen, and sliced. Apples are a healthy and important part of our diet, and are rich in flavonoids, anti-toxicants and vitamins. They provide a multitude of health benefits, including cancer and heart disease fighting properties. Apples also have potential for use in cosmetics and pharmaceuticals.



#### Research and Development Priorities:

- ▶ Study and promote the human health benefits of apples
- ▶ Develop consumer friendly packaging and value-added products.
- ▶ Develop technology to reduce browning, and improve packaging and handling of apple slices for fresh sale.
- ▶ Develop uses for apples in industrial products, cosmetics, and food additives.
- ▶ Ability to make health statements/claims

