

**New Brunswick Advanced
Agricultural Leadership Program Inc.**

BRAZIL STUDY TOUR



February 2004

**Summary and Discussion by Chris Dunbar
Site Reports by Class Participants**

1. EXECUTIVE SUMMARY

On February 8, 2004 members of the New Brunswick Advanced Agricultural Leadership Program's Class V returned from a 10-day eye-opening adventure looking at Brazil's agricultural industry. The group visited farming and food processing operations in the southern region of the country. One surprise was just how advanced the Brazilian agricultural industry is. For the small part of the country seen, it appears that farmers in Brazil have similar production technology and quite good environmental stewardship. For example, participants viewed a milking parlor that was very similar to one that would be seen here. Additionally, many growers use no-tillage systems and observe the federal law that requires 20% of their land be left out of production to provide a refuge for native species.

Of course, the class learned the most from the aspects of Brazilian agriculture that are different from our own. The most obvious distinction, compared to Atlantic Canada, is that farmers seem to have a strong influence on the agricultural industry in Brazil. They accomplish this by working together through Co-operatives which provide inputs and purchase the production of the farmers. These co-operatives are vertically integrated and have essentially the same role as Maple Leaf Foods or Cavendish Farms do in Atlantic Canada....except that the growers own them. More importantly, the co-operatives are advancing to gain a better return from the marketplace. They are doing this by investing in facilities that can add value to their raw products, such as by making soybeans into soy margarine and wheat into bread. Most importantly, these united corporations allow producers to effectively plan for the future and position themselves to prosper. One venture being developed is the production of bio-diesel from soybean oil, a product that widely expected to be in great demand in North America and Europe in the future.

One opportunity for those involved in Atlantic Canada's agricultural sector is to adapt some of the principles used in Brazil so they are better able to prosper in our future food system. After all, with open trade in a commodity market, it will be difficult for producers in Atlantic Canada to compete with countries that are organized and have a huge scale of production, such as Brazil. Therefore, it is quite possible that farmers with the ability to change to embrace the new realities of the marketplace will ultimately be the most successful.

2. INTRODUCTION

Brazil and Canada have the second and third largest economies, respectively, in the western hemisphere. With 20 % of the world's arable land within its borders, Brazil is a powerhouse in the agricultural sector. Agriculture is very important to the economy of Brazil and makes up 8.7% of the total gross domestic product (GDP), versus only 3.3% in Canada.

Soybeans and other grains are the crops that Brazilians enjoy the greatest advantage. They have 100 million hectares of open savannah that is available for development into productive agricultural land. With only 40% of this land currently in production, Brazil is still one of the top 8 world producers of 28 different commodities. With the current influx of foreign

investment, it is expected that the undeveloped land will be brought into production within 5 years. This will position Brazil favourably to influence the world price of commodities.

The average cost of agricultural labour in Brazil is \$7 per day while the average minimum wage in Canada is \$7 per hour. The GDP per person in Brazil is CDN \$9,600 while the GDP per person in Canada is CDN \$36,700.

3. DISCUSSION

3.1 Take Home Messages

Over the past 30 years, Brazil has taken a very pro-active role in advancing agriculture. They have organized into very effective groups. They have sent people to Canada and other countries and learned modern technology. They have used this technology to improve their production levels. They are developing an industry to add value to the raw products and therefore gain a larger portion of revenue from the marketplace. In Canada, the agricultural industry has also advanced in technology, but the gap between Canada and Brazil has narrowed to almost nil. The result is that farmers in Canada must compete head-to-head on agricultural commodities.

There was little to be learned from the tour of Brazil that could be applied at the on-farm level to benefit individual producers. Some advantages enjoyed by Brazilian farmers, such as having 9 cuts of alfalfa per year, cannot be realized in Canada due to climatic differences. The real benefit for Class V participants was in looking at the big picture - on a macro-economic level. Participants saw how the producer organizational structure is designed fundamentally differently compared to Canada. This difference allows the farmers to be in a very good position to receive an excellent return for their products.

Agriculture is dramatically bigger in Brazil compared to Canada. Most importantly, it seems that farmers have a strong influence on the agriculture industry in Brazil. Farmers in Brazil work together through co-operatives. These are essentially large vertically integrated corporations owned by the growers that provide inputs and sell outputs. Through these powerful cooperatives, the farmers are well positioned to prosper as global trade proceeds and borders are opened to the free flow of goods. In this situation, countries like Brazil may be able to ship product into Canada at a lower cost than it can be produced here.

An opportunity for innovators in agriculture is to figure out a way to compete with countries that have lower costs of production. One way is to increase our output per unit of input. This may be difficult as any technology used to accomplish this can be applied in other areas. Another way is to start producing products that have distinct differences to meet the needs of the marketplace. This should allow producers to be able to get a return based on their costs, rather than the world price. If farmers want to avoid the movement of production of goods to areas like Brazil, they must give consumers a reason to purchase their products.

3.2 Food Safety

The group visited the southern area of Brazil, near Sao Paulo, and were exposed to a number of food safety issues. Sites included chicken, pork and margarine processing facilities. The issue is the same for all of the facilities. The technology is modern, and HACCP, ISO9003, GMP guidelines and procedures are in place. Brazil meets the stringent standards required to export to Europe and have their processing plants inspected periodically by EU delegations. Food tracibility is similar to what is seen in Canada. In short, Brazil has similar technology and standards as in Canada. There is no reason why they could not meet Canadian importing standards.

3.3 Environment

Some of the environmental regulations and practices used by the agricultural sector in Brazil are similar to Canada's.

There are some areas where Brazil is ahead: (1) 10 % of all the fuel used in Brazil is derived from vegetable oil – bio-fuels; in Canada <1 % of the total fuel is from bio-fuel; (2) all growers in Brazil use no-tillage systems which greatly diminishes soil erosion; in Atlantic Canada only a very small percentage of the farmland is managed using no-tillage systems; (3) all farmers must leave 20% of their land undeveloped to provide a refuge for native species in Brazil; there is no such law in Canada; and (4) common rotation in Brazil is one crop in 12 is potatoes while in most of Atlantic Canada 1 potato crop in three crops is considered a good rotation.

However, there is no evidence that the farmers in Brazil will need to have a nutrient management plan in the near future. In Canada, the trend is to have much more environmental regulation. This may influence our production costs as the amount of regulation increases, relative to Brazil.

3.4 Trade

The long-term trend in trade of agricultural goods is expected to move to “freer” trade and removal of trade barriers. Brazil is positioning itself very well in anticipation of this. In the past, the agricultural sector in Atlantic Canada has been a significant exporter for many years and is aware of trade issues. If this sector wishes to continue this trend, it must have a clear plan and be adequately prepared for the opening of markets. Since countries like Brazil will have lower costs of production for the foreseeable future, the agricultural sector must ensure they are ready when this situation happens.

One important issue is the role of Brazil in the WTO negotiations. They accuse countries such as the USA and European Union of driving down the price of agricultural commodities by insisting on providing subsidies to their growers. The US of course, counters that it is Brazil that is driving the price down by increasing their production thereby influencing the supply side. Whether the US is right or Brazil, it is likely that Brazil will do better in this stalemate as their

costs of production are lower than in most other places in the world, meaning they will still be profitable when other producers are losing money in the marketplace.

3.5 Marketing Opportunities

There is tremendous opportunity in the future for the agricultural sector in Canada but the opportunity is not by increasing trade with Brazil. There are few opportunities for the development of markets in Brazil in the short term. There are 170 million people that live in Brazil but the annual income is still quite low and they will not demand imports from Canada.

Perhaps the opportunity lies with producers who are able to embrace change and can adapt their operations to the new realities of the global agricultural marketplace. Canadian producers will probably find it very difficult to compete with countries such as Brazil on agricultural commodities. Producers must therefore learn to market their products so they are distinct in the marketplace, avoiding direct competition with countries with lower costs of production, such as Brazil. Effective marketing will convince consumers to buy Canadian products because of their value rather than simply on price. The producers that are able to adapt may prosper as the marketplace changes. It is possible that growers who do not change will continue to suffer from low margins as Brazil sets the world price for commodities at levels well below the cost of production in Canada.

3.6 Political, Cultural & Societal

Brazil has a stable democratic government and an elected head of state, President Lulu De Silva. There are 26 states and 1 federal district, the National Congress. The Senate has 81 members and a chamber of deputies of 513 members.

Most countries have a history of civil wars in their development. Brazil has never had a civil war, a fact that they seem to be proud of as this was mentioned at one of the presentations. Even Canada, which prides itself as being a peace-loving country, has had its share of strife and rebellion in the past.

The economy seems to be a free market, with little regulation regarding production. It is quite stable, although there were some crises in the early 1990's in which there was critically high inflation. Brazil is not a third world country. They have some diseases more common in developing countries, however, at least in southern Brazil there seems to be similar infrastructure and laws to Canada's.

The people in Brazil seem to be very friendly and open to mutually beneficial business opportunities. They are very willing to please their business partners. They seem to be more obliging than people in Canada. The group saw many articulate, professional business people who would be easy to build business relationships with. They have a good understanding of their strengths and weaknesses and those of their competition and potential partners.

Society. It appears that this society, is a somewhat male dominated, but it is difficult to say this conclusively. Most of people and heads of corporations giving presentations were male and

there were some references to women in domestic roles. However, this wasn't always the case. On some farms women seem to have an equal status in the operations of the farm.

3.7 Other

3.7.1 Co-operatives

The members of Class V had considerable discussion re. the concept of cooperatives in Brazil. They contrasted why the co-operatives were so successful in Brazil, and why they are not generally as effective in Canada. Factors discussed included culture, social implications of cooperatives, direct benefits to the grower by participating in a cooperative, etc. In Atlantic Canada, growers are very independent and wish to remain that way. They do not seem to be willing to give up any freedom regarding their operations in exchange for the strengths of working in a farm group. The whole idea of co-operatives and working together, rather than as individuals, is what makes farmers in Brazil very strong. Perhaps as primary production continues in its economic crisis, growers in Atlantic Canada may decide that working in groups is better than the current situation. A possible opportunity is to start groups now so that when agriculture hits the "wall" growers will be better able to cope in that situation.

3.7.2 Transportation

The biggest issue that Brazil must address in order to compete effectively in agricultural commodities is transportation. Currently, most goods are transported by highway which is very expensive. Construction of railroads to the major shipping ports is underway.

3.7.3 Soybeans

Soybeans are the crop that is driving the advancement of Brazilian Agriculture. They have increased their yield to world levels, acreage has doubled and has the potential to increase dramatically as they develop the northern savannahs into production. Within two years, they are expected to be the world leader in soybean production. Members of the group saw miles and miles of soybeans. At first glance, that is not important to Agriculture in Atlantic Canada, but issues that affect soybeans can be applied to other crops and we can learn from what happens in soybeans.

APPENDIX 1 – Tour Itinerary

Day 1 – Thursday, January 29

Departure from Atlantic Provinces – Toronto—São Paulo, Brazil

Day 2 –Friday, January 30 – São Paulo–

11:25 Arrival at Guarulhos Airport

Meet our Brazilian Tour director and Traveland Brazil company representative.

13:15 Arrival at Grand Estamplaza Hotel. Time to check in

14:00 Lunch at the Hotel. Time to freshen up or visit D&D Mall next door

16:30 Technical Presentations at the Hotel

- Mr. Nicolau (Agribusiness consultant)
- Mr. Costa (Bank investor for Agribusiness)
- Mr. Maués (Semex director)
- Mr. Francesquine (Canadian Consulate)

20:00 Transfer to dinner

20:30 Dinner at Barbacoa restaurant

Overnight at Gran Estamplaza Hotel.

Day 3 – Saturday, January 31 - São Paulo - Paranapanema

08: 00 Buffet Breakfast

09: 00 Check- out

09: 30 City- tour of Sao Paulo

12: 30 Lunch at Fogo de Chão Churrascaria (a typical Brazilian barbecue)

14: 30 Departure to Paranapanema. *Distance São Paulo/Paranapanema: 295 km*

19: 00 Arrival in Paranapanema. Check- in at Hotel Santa Cristina.

20: 00 Buffet dinner at the Hotel

Day 4 – Sunday, February 1 - Paranapanema (Holambra) –Ponta Grossa

07: 30 Breakfast

08: 00 Visit to Holambra's Co- op.

08: 30 Presentation of cotton and cereals production by Mr. Simon

09: 30 Visit to fruit and flower production by Mr. Henrique and Mr. Geraldo Kievitsbosch

11: 00 Visit to cereal production by Joanes Petrus de Winter

13: 00 Lunch at Gringo's Restaurant (at Holambra Coop)

15: 00 Departure to Ponta Grossa. *Distance Paranapanema/ Ponta Grossa 320 km*

19: 00 Arrival in Ponta Grossa. Check in at Barbour Plaza Hotel

20: 00 Dinner at the Restaurant La Gondola

Day 5 – Monday, February 2 - Ponta Grossa -Castro – Ponta Grossa

07: 30 Breakfast

09: 00 Reception at the theatre of ABC Foundation. Castrolanda's Cooperative presentation. This cooperative specializes in hogs, potato, and dairy processing. *Distance from Ponta Grossa– Castro 40 km*

11: 00 Visit to a Castrolanda dairy farm

12: 30 Lunch at La Polenta

14: 00 Castrolanda processing facilities tour

14: 30 Visit to the Holland Immigration Memorial

15: 30 Visit to a hog farm

16: 30 Visit to a seed potato farm

17: 00 Return to Ponta Grossa.

18: 00 Welcome Coffee. Presentation by Mr. Dario from Deragro at the Hotel. Deragro is one of the largest Crop Protection dealers in that area.

20: 00 Dinner at the hotel

Day 6 – Tuesday, February 3 – Ponta Grossa - Londrina

07: 00 Breakfast

08: 00 Departure to Londrina. *Distance Ponta Grossa/ Londrina: 270 km*

12: 00 Arrival and check- in at the Hotel Comfort Inn.

12: 30 Buffet Lunch

14: 00 Visit to EMPRAPA (Brazilian Agriculture Research Corporation) for presentations.

16: 00 Departure to visit Syngenta’s CNT (Circuito Nacional de Tecnologia).

16: 30 Visit to Syngenta’s Technology Road Show Truck.

17: 30 Return to the Hotel

18: 30 Transfer to restaurant

19: 00 Dinner at O Espanhol (typical Brazilian fish cooked on mud tiles)

Overnight in Londrina

Day 7 – Wednesday, February 4 – Londrina – Campo Mourão - Cascavel

06: 30 Early morning breakfast.

07: 00 Departure to Campo Mourão. *Distance: Londrina/Campo Mourão :197 km*

09: 30 Arrival at COAMO (The Co-operative of Campo Mourão) – the largest grain Co- op in the Americas. Visit to their soybean products facilities.

12: 30 Lunch in Campo Mourao at Cantina Dicolli Restaurant (typical Italian dining)

13: 30 Departure to Cascavel *Distance Campo Mourão/ Cascavel: 174 km*

15: 40 Arrival at Cascavel. Visit COOPAVEL(Show Rural) plots and park.

17: 30 Transfer to Deville Hotel. Check- in

19: 30 Transfer to Gandin Barbecue Restaurant

Overnight in Cascavel

Day 8 – Thursday, February 5 - Foz do Iguaçu

07: 00 Breakfast

08: 00 Visit Coopavel— presentation and visit to grain and pork facilities

11: 30 Lunch at Coopavel

13: 00 Visit to a poultry processing plant at Coopavel plus free time to see Show Rural

15: 00 Depart to Iguassu Falls (*distance 149 km*)

17: 30 Arrival in Iguassu Falls. Check- in at the Hotel MABU THERMAS & RESORT. Free time to enjoy the hotel facilities such as their natural thermal waters

19: 30 Buffet Dinner at the hotel

Day 9 – Friday, February 6 - Foz do Iguaçu – Iguassu Region

07: 30 Breakfast.

08: 00 Departure to visit Itaipu dam, the largest hydroelectric power generating station in the world

12: 00 Depart for lunch at Restaurant Porto Canoas

14: 30 Tour to Iguassu falls - transfers, entrance fees to Iguassu Falls National Park

17: 00 Return to the Hotel

20: 00 Farewell dinner at Rafain Barbecue Restaurant

Day 10 –Saturday, February 7 - Foz do Iguaçu – São Paulo - Toronto -

08:00 Breakfast

09:00 Morning free

12:00 Lunch at the Hotel

13:15 Check-out at the Hotel

13:30 Transfer- out to the airport

14:00 Check-in at the airport - (departure 15:30)

17:00 Arrive at Sao Paulo

23:00 Depart Sao Paulo

Day 11 Sunday February 8—Toronto—home

08:10 Arrive Toronto and depart on Maritime connecting flights

APPENDIX 2 – Site Reports

Site Report Question Template

What are the ‘take home’ messages from this tour site?

List at least 2 messages

Environment

What are the top 3 environmental issues at this site? How has the site adapted to these environmental issues?

Food Safety

Are there issues with Food safety at this site? How have these issues be addressed?

Trade

Where do they export to now? Do they import any product? Where will this site be in the next 10-15 years? Will they be expanding? Will they be exporting more?

Other

Are there any niche markets that Canadian farmers could utilize to assist this site’s operation?

Are there other issues unique to this site not covered above?

Could Canadian farmers adapt the information learned at this site for their own

Canadian Consulate – John McCarthy, Class Reporter

1. Take Home Message: Brazilians are very proud of their agricultural industry and they have the numbers to back it up.
 - a. They have value added products
 - b. They are very efficient in their production
 - c. They are export driven in selling commodities.
2. Mr. Francesquine mentioned said that it is not economical to develop land in the Amazon. Twenty percent of all agricultural land must be preserved in its natural state.
3. Mr. Francesquine never mentioned food safety.
4. Trade:
 - a. Brazil trades with Africa, Europe, and North America. Canada is Brazil’s 17th most important trading partner.
 - b. Brazil imports very few agricultural products. Some milk and potatoes. Canada sells fertilizer to Brazil – potassium (potash).
 - c. Brazil expects to develop more farm land , improve infrastructure and sell more agricultural products.

5. Canada could develop more potash mines to send fertilizer. Canada could sell more processed frozen French fries and maybe ship some lime.

Semex – Anne Boswall, Class Reporter

1. No
2. Environment - As the dairy herd moves further north, and the herds increase in size, there is a possibility that the environment will be affected. This was not the expertise of the speaker but an issue for the country as the industry continues to evolve.
3. Food Safety: No
4. Trade: Semex Brazil brings in a large amount of semen from Canada for Beef and Elite dairy farms. As the cow population increases and improves using Brazilian genetics, we may see a reduction in demand for Canadian semen.
5. The Brazil Market will be more self sufficient and it appears that expansion will be done from within the industry. If they combine to develop genetics more suitable to hot climates they may have the potential to export but he did not mention this.
6. Other – Niche Markets: Perhaps Ayrshire or Jersey genetics but BSE restrictions makes this difficult.

Bank investor Agri-business - Michael Slocum, Class Reporter

1. Take home messages: Brazil investor in agribusiness has a vision for the next ten years or more. They are helping the farmer put plans into action, as they become world leaders in the production and marketing of agricultural products.
 - a. They are exporting products to 175 countries now.
 - b. Largest cattle herds in the world.
 - c. Leading world exporter in many commodities such as chicken, soybeans, coffee, concentrated orange juice and beef.
 - d. Brazil Agribusiness has had a high level of success because the farmers, a number of years ago, could see a benefit to the term cooperation. Agribusiness is helping the co-ops in the financing of farmers for input cost, the financing of new technologies and land development. The agribusiness in Brazil is looking after their own interests; they don't depend on government programs to make their industry work.
2. Environmental strengths and weaknesses
 - a. Availability of land for rotation. This may possibly lead to over production
 - b. Use of new technologies in the industry
 - c. Protect natural areas
3. Trade
 - a. Exporting product to 175 countries
 - b. They are importing fertilizer from Canada & U.S.
 - c. In the next 10 to 15 years they will be expanding the soybean production, this will place Brazil as number one in soybean production in the world.
4. Food safety
 - a. They use the best genetics in livestock production and are improving their animal health status, therefore producing a high quality food for the market place.
 - b. They operate with a high degree of professionalism in business and are always looking for ways to improve food safety

As a Canadian farmer I learned that Brazilian agribusiness is extremely proud of their agricultural industry and want to show it off to the world. We as Canadian farmers also have a lot to be proud of in the agricultural industry. We do produce a top quality safe food for our customers in Canada and abroad. We need to work on maintaining a positive attitude for agriculture within the industry itself, so we can show Canadians how important agriculture is to OUR country and be proud of it.

Hoambra Co-op – Chris Dunbar, Class Reporter

The Holambra Co-op started in 1950 by Dutch, American and Brazilian farmers. It is primarily involved in horticultural crops such as tree fruits and vegetables, and especially flowers. They also grow corn, soybeans, cotton, and cattle. This particular co-op seems to have some cultural/religious ties that helps keep it together. This is in addition to the obvious economic ties of the co-op.

1. **Take Home Message:** This co-op was started by some Dutch immigrants with an average age of 60 years. They moved because of their kids, not for their own benefit. These people took a brave step to move to another country to start a farming practice – a step that was very successful. They have a strong bond that holds them together and co-operation is very important to them. They do not look at themselves as individuals, but as a group.
2. **Environment:** Pesticides can only be applied if they have a permit from an agronomist that states the pesticide is necessary. The grower cannot even buy the product without the permit. They irrigate 70% of their crops. Too much rain in the summer, too dry in winter...1,200 mm rain per year. Use man-made lakes as irrigation reservoirs. We saw a person on an open tractor that was going spraying. He had a rain suit on but did not have a respirator.
3. **Food Safety:** There were no obvious issues regarding food safety at this co-op. Most of the product we looked at was flowers, which does not enter the food chain.
4. **International Trade:** They ship some of their flowers to the southern US (Florida) but not any further. It is not known if these flowers can be shipped further north. The flowers look good and are relatively cheap, usually CDN\$ 0.20, it is possible that they could ship these considerable distances and still be competitively priced, as long as the quality of the flowers is maintained. Most of the flowers seen were compositae.
5. **Niche Markets:**
6. **Other:** It is hard to figure out why these co-operatives work down here and generally do not work very well in Atlantic Canada. Perhaps a social aspect of the co-op is needed as well as an economic one for them to be sustainable over the long term...the social aspect is missing in co-ops in Atlantic Canada.

Holambra Fruit & Flower – Lise Desjardins, Class Reporter

Background:

- HOLAMBRA II
- Started in 1962 with apples.
- Changed to other fruits because of competition and adaptation. Now harvest peaches, prunes, and guava. They use same varieties as Florida and Mexico.

- 1967-69 started mixed flowers.
 - Now produce 20 ha of flowers and 60 ha of fruits.
 - They produce year round
 - 100 workers
 - Now testing 70 varieties
 - Peach life span is 50 years
 - Price – \$R0.45 per flower, \$R1.05 on special occasions up to \$R1.49
1. Take Home Message: You can achieve a lot if you work together and don't give up. They appreciate life and have drive and ambition.
 2. Environment: Doesn't seem to be a big issue over there. Didn't see any workers or safety posters as indicators anywhere.
 3. They just adjust to the markets demands and what is more adaptable to their clients. Food Safety doesn't seem to be an issue at this point.
 4. Trade:
 - a. All on open markets, no contracts.
 - b. To market, they use the Dutch Auction marketing system.
 - c. The co-op is responsible to sell all the production for the farmers.
 - d. Markets:
 - i. Flowers: USA (Florida), Portugal and National markets.
 - ii. Fruits: started to export in 2004 – 60% from Holambra II, 40% from Holambra I
 5. They produce different fruits than we do...in some cases (guava).

Holambra Grain Production – Suzanne MacNeill, Class Reporter

Cereal Production Farm at Holambra - Joanes Petrus de Winter, 300 ha

Annual Crop Production for Holambra:

CROP	Ha / ac	% of total production	CROP	Ha/ ac	% of total production
WHEAT	6000 / 14820	19	COTTON	7700 / 19019	25
CORN	5000 / 12350	16	FRUIT	700 / 1729	2
SOYBEAN	5500 / 13585	18	FLOWERS		1
B.BEAN	5800 / 14326	19			

Cereal Farmers (associates) within the Holambra Co-op structure farm live outside the town of Holambra. The farmers own their land not the Co-op. Every farmer must buy their inputs and sell the crop to the Co-op. The Coop pays the farmers upon receipt of the product. If there are any profits at the end of the year, the profit is split among the founding farmers. Each of the founding farmers began farming with 45-50 ha and then expanded from there.

Cereal production in Brazil refers to soybeans, wheat, corn, brown beans, and cotton. Holambra farmers irrigate 70% of their cereal production by use of central pivots.

Crop Rotation for weed control
Financial rotation:

CROP	Plant	Harvest
Brown Beans	July / August	November
Cotton / Corn / Soybeans	November	May
Wheat	May	September
Cotton / Corn / Soybeans	September	July

1. Take home messages:
 - a. Cost of production for soybeans is similar to Canada. Only difference being that in Canada we need to store our beans on farm. In the co-operative the farmers ship to the co-operatives and therefore have no expense for storage facilities.
 - b. 5 crops in 2 years....more income versus our 2 crops in 2 years.
 - c. Surprisingly mechanized. They use the same planting and harvesting equipment we use.
2. Environmental Issues
 - a. Soil Erosion – They have been farming no-till for the last 10-20 years to reduce soil erosion. Also grow wheat in the winter as a plow down crop to improve soil structure and tilth.
 1. Soil composition: OM 3.5%
 2. pH 4.5 on new land (must lime at a rate of 3-5 tons / ha first year, then follow up with 1 ton/yr.
 3. Fertilizer must be incorporated.
 - b. Preservation area on farms – For every hectare of crop under irrigation must plant one hectare in trees (new law). 20% of land must be in natural reserve for each farm. When the farm is sold, this 20% must be defined.
 - c. Heavy use of pesticide to combat Soybean Rust. They use weather monitoring systems to indicate proper timing of sprays. (similar to late blight in potatoes). The use of GMO's could possibly decrease the amount of sprays required...however GMO's are not used in this area yet. Pesticides can not be purchased without a signed certificate from the agronomist. They have also started a program for triple rinsing and collection of pesticide containers.
 - d. Cotton has 10 sprays per growing seasons due to insects pests. They do scout for the insects to determine the proper timing of control. Growth regulators are used to control the height of the crop....without them the crop would grow too tall for harvest.
3. Food Safety: N/A.
4. Trade:
 - a. Most of the cereals are exported to other countries in the E.U, Japan, and USA. Cotton exported to China. Only about 25% are for domestic markets with most of the cereals going to Sao Paulo. In order for Holambra to expand it would need to move into the Mato Grosso area of Brazil . This is the 2nd cooperative for Holambra and they are running out of land area.
5. Cost of Production:
 - Cotton: Cost to grow > 4000 R/ ha (\$ 730 / ac)
Selling price > 6000 R/ ha (\$1093 / ac)
 - Soybeans: Cost to Grow > 1200-1400 R / ha (\$218 – 255 / ac)
Selling Price > 2000 R / ha (\$ 364 /ac)

6. Other: The co-operatives are involved in the marketing of the crop and the farmers can solely focus on the production aspects. Farmers are able to become specialists in their production. The cooperative provides agronomists to assist the farmers.
7. Are there any niche markets that Canadian farmers could utilize to assist this site's operation?
 - a. Maybe sources of seeds.
8. Are there other issues unique to this site not covered above?
9. Could Canadian farmers adapt the information learned at this site for their own use?
 - a. Yes, the use of no till farming to enhance soil properties for reducing erosion. Cover cropping for plow down to reduce erosion and improve soil tilth. And the structure of marketing could be utilized to better suit our farmers.
10. OTHER Take home messages from Brazil:
 - a. Positive attitude for farming. There is a future. Agriculture is respected and drives the economy.
 - b. The people are warm, friendly and genuine. The culture embraces you. The culture is diverse with its Italian, Japanese, German, Dutch, Spanish, Indian and Portuguese influences. There is no way any of us could explain the country to anyone who has not seen, felt or breathed it. I look forward to going back and taking in more.

Castrolanda's Hog and Dairy Farm – Dawn McLean, Class Reporter

1. Take Home Message:
 - a. Holland immigrants came from the environmental issues but have not applied them on their new farm. They will only wait until forced by law to do environmentally correct things.
 - b. The family is looking to grow bigger and bigger working together through family succession step by step. This is as big of a deal for this family as for families in NB and PEI. It is easy to grow without quota restriction.
 - c. Hog Farm Take Away Message: The farm was a small family farm. It still has a lot of manual labour but at this point in time the labour is a cheap and efficient as technology.
2. Environment
 - a. The Dairy Farm is on a hill with rivers at the bottom, no restrictions on manure spreading.
 - b. The hog farm has a crop section to utilize the manure
3. Food Safety:
 - a. All cows are dipped before and after milking. No Antibiotics are used after 113 days for the hogs.
 - b. Milk is kept in fully refrigerated 15,000L bulk tank.
 - c. Sick pigs isolated from the group.
 - d. All tiles makes for easy washing in the milk parlour and outdoor areas.
4. Trade:
 - a. Currently only two farms are part of the co-op. They sell only to the co-op and buy only from the coop.

- b. The dairy farm continues to grow. The hog farm will need to advance their technology if they would like to decrease the mortality on the maternity ward as well as compete on world market outside the co-op should something happen to the security within the co-op.
- 5. Niche Markets – No
- 6. Other Issues – No
- 7. Adapt Info. – No

Deragro – Jeff DeHaan, Class Reporter

Deragro is a Crop Protection Dealer serving +300 active clients which grow soybeans, corn, wheat, dry beans, potatoes, agro-forestry and fruit.

Sell mostly to mid-size farmers (300-1000 ha)

1. Take home message:
 - a. 3 forms of credit for farmers:
 - i. Government: credit limit of 30% of variable costs; 8.75% interest
 - ii. Tradings: Burge & Cargill; guarantee; type of advance payment
 - iii. Chemical dealers: 26.4% interest
 - b. Approximate production costs:
 - i. Soybeans \$US 450 per ha
 - ii. Corn \$US 550 per ha
 - iii. Wheat \$US 450 per ha
 - iv. Normally 25-30% profit, soybeans have 80% this year only
2. Environment:
 - a. Farmers cannot transport pesticides to their own farms, done by dealers only.
 - b. Farmers must return empty containers to dealer for disposal
 - c. organic agriculture: accounts for ~2% of market in Brazil
 - i. people/consumers generally unwilling to pay higher price.
 - d. Changes in formulations of chemicals are such that they are less aggressive on the environment.
 - e. Farmers do not require a pesticide license.
3. Food Safety – No concerns were expressed after being questioned on issue other than those above.
4. Trade – Not applicable.
5. Niche Markets – GMO crops are expected to increase Brazil's acreage by 30% over next 3 yr. – potential for seed exports?
6. Other Issues:
 - a. Pesticides take 2-3 years to get registered in Brazil.
 - b. Roundup costs about \$US 4/ Litre (\$US 6 in Canada).
7. Adapt Info:
 - a. Watch out for increased commodity production such as soybeans, corn and edible beans.
 - b. Technology and necessary inputs are available there to increase production.
 - c. Limiting factor is financing at reasonable (8.6%) interest rates. (sufficient financing.).

EMBRAPA – Joey Toner, Class Reporter

1. Take Home Messages: The government of Brazil has definitely taken an invested interest in the genetics of soybean cultivars and their technology for doing so is state of the art.
2. Environmental Issues:
 - a. Adapting cultivars to their climates.
 - b. Creating cultivars that could withstand heavy rainfall.
 - c. Finding cultivars that could be more productive in their specifications.
3. No, I don't feel that there are issues with food safety at this site, but there could be in the future concerning the anticipated use of GMO soybeans next year.
4. I feel that this site will continue to grow rapidly in the next ten years as Brazil's soybean production continues to grow rapidly.
5. The growing of non-GMO soybeans (but that doesn't look possible).
6. This site has a patent on the process used to change the genetic strains of the soybeans.
7. Most definitely, I feel that there is a lot that Canadian farmers could learn from the Brazilian approach and the open-mindedness that they have utilized over the last 2-30 years to adapt North American technology and improve upon it for their own industry.

EMBRAPA – Gerrit Fictorie, Class Reporter

EMBRAPA Federal Research Facility

Mission Statement: To provide feasible solutions for sustainable development of Brazilian agribusiness, through knowledge and technology generation and transfer.

From the very beginning, on April 26, 1973, Embrapa has generated and recommended more than nine thousand technologies for Brazilian agriculture, reduced production costs and helped Brazil to increase the production of food while, at the same time, conserving natural resources and the environment and diminishing external dependence on technologies, basic products and genetic materials.

Networking through 37 Research Centers, 3 Service Centers and 11 Central Divisions, Embrapa is present in almost all the states of the Union, each with its own ecological conditions. There are about 8,500 employees in Embrapa, of which 2,200 are researchers, 45% with master's degrees and 53% with doctoral degrees. Embrapa coordinates the National Agricultural Research System, which includes most public and private entities involved in agricultural research in the country.

Some of the research projects that are on going and were presented to the group include: soybeans, wheat, corn and sunflower. A few of the other projects include: zero hunger program, no till cropping, safe food program and sustainable agriculture in the Amazon.

In 1974, 1200 of their researchers had a BS degree with about 150 researchers had PhD.

Today, 1200 researchers have a PhD and only 150 have a BS.

Because soybeans have been very successful, a lot of research goes into improvement of the crop. 23,000 sq. meters of the facility is dedicated to just soybeans.

Funding for the soybean center comes from at least different areas, 70% of the budget goes into research from associations, 25% comes from private and government pays for all wages.

They are also doing research on GMO. They have two types for commercializing, just waiting for the government to release it, they expect it to be released to farmers in 2005. As I write this report the government voted to release the two varieties. Soybeans are self-pollinating, so there is a .5% chance of cross pollination between GMO and non-GMO if they were planted right each other.

23% of soybeans are consumed in Brazil, while 77% are exported as beans, meal and oil. Export product goes to Asia, Europe and Far East.

80 to 90 % of the soybeans grown are no-till.

Positive Improvements in Brazil from Agriculture

Commercial Agri-Mechanization

Modern transport system

Increased urbanization

Changed diet from animal oil

De-Centralized Ag industry

Integration of Brazilian people

Future outlook is

Demand, due to globalization

Bio-diesel, ink

Increase in global population

Asia wants more soybeans

Reduction of heavy taxes

Removal of ban on GMO soybean

Large wild Cerrado land available (90 million hectares)

Want to be less dependent on outside sources

In the USA, 16% of the soybean is transferred on the roads.

In Brazil, 64% of the soybean is transferred on the roads

Seed Potato Farm - Thomas Harvey, Class Reporter

1. Take Home Messages:
 - a. Potato reproduction is much the same in Canada, although some varieties differ from those grown in Canada due to variations in temperature.
 - b. Seed potato reproduction is done on a small scale and is much the same as our seed production techniques.
2. Environment:
 - a. Wide temperature variations between reproductive sites (North to South).
 - b. Strict regulations for reproduction techniques and production.
 - c. Heavy rainfalls and flash flooding
3. Food Safety: No, I don't feel that there are food safety issues with this site.
4. Trade: At this time this co-operative produces seed for only 8 growers within Brazil, but I do feel that in 10 years there will be a larger market for their seed. I do not feel they will have a large export business, because they said that the potato farmers there were struggling financially.
5. Niche Markets: No, I don't feel so.
6. Other Issues: No, I don't feel that this site has other issues, but it was interesting to see another seed operation in a South American country with similar growing techniques.
7. Yes, I do think that a lot of the technology is similar and definitely transferable.

COAMO – Victor Del Villar, Class Reporter

Campo Mourao was a good production area, but when there was no longer a forestry industry, producers formed an agricultural co-operative since there was no government support.

COAMO was funded in 1970 by 79 producers. The cooperative began operations in 1972. Today, COAMO is integrated by 18,000 associates, 3600 employees and temporary workers required during the year. The co-operative has presence in 50 cities in the states of Parana, Mato Grosso du Sul and Santa Catarina.

COAMO is one of the 70 biggest companies in Brazil having sales for more than US\$ 1 billion in 2003.

COAMO has many different divisions, including hogs, beef, dairy, credit, exports and social benefits for members. The cooperative growth is achieved by needs and hopes. Today they have 84 storage units served by 250 trucks of their own.

To be an associate the farmer must be 18 years of age or older and pay a fee of R\$300.00. The new associates are generally sons or daughters of the associates.

Oil, wheat flour, margarine and coffee are being sold in 12 Brazilian states. The soybean facility has the capacity of processing 1000 MT of soybeans per day and is expanding to 2000 MT. Once soybeans have been processed 18% is soy oil and the rest is soy meal. In the facility 14,000 boxes a day (each box has 20 units with a total weight of 18.5 kg) are packed. The equipment is automatic and fill and lid 540 cans per minute.

The production of margarine is 60 tons a day. 30 people work in margarine production plant and 60 are employed in the entire facility.

There is no apparent concern about trans-fatty acids.

Coamo Co-op Margarine Factory – Mark Anderson, Class Reporter

1. The main take home message of this operation is the advantage of using modern technology and to add value to the raw product.
2. Environment: There were no apparent negative environmental issues. One positive aspect would be that all the by-products of the margarine production are used by other sectors within the coop.
3. Food Safety: There are little or no food safety issues because the process is totally automated. They were HACCP and ISO9000 certified and there were posters on the walls reminding employees of hygiene.
4. Trade: Their total production is used domestically so there's no need to export. The production is at max. capacity employing 60 people total.
5. Niche Marketing: They may diversify into light and different classes of margarine products.
6. They have an advantage because their input and labour costs are lower than ours. Possibly trade cooperation could help Canadian producers develop their market.

Show Rural at Coopavel – Marc Ouellet, Class Reporter

The Coopavel Rural Show is one of the biggest agricultural shows representing the different industries and commodities in Brazil.

The show started in 1998 and its vision was to show Brazilian agricultural leaders what was available for them on the market. Situated on 7100 m² of land, with 5000 booth spaces divided by sector, large diverse companies offer exposure to agricultural products through this rural show.

The show attracts approximately 140 000 people from around the country and the world for those 5 days. More than 2000 people work at the setup for this big show to make it a success.

US\$ 5 millions in sales are done during this show. You can buy products at the expo and there are several banking booths on-site to provide the financing.

During that week, there are many workshops on soybeans, dairy, poultry, vegetables, etc. with emphasis on disease prevention and more. People come to learn and exchange ideas on different way to do agriculture in Brazil.

I think that show is a great idea to meet people and exchange ideas on agriculture business and I would like to have this opportunity in Canada too.

The environment is very important to this site. Garbage cans and recycling bins are everywhere, and there are many flowers planted along clean sidewalks with fresh water available.

I will not forget the little path where they show the history of a family who come from a farm and sold everything to move in the big city. The family fell on hard times in the city and although they worked very hard they only had a little bit of money. They then began to drink and use drugs.....

The other path explained how if you believe in what your are doing and try hard to achieve it then you will become successful and have a great living.

The Show Rural was very impressive to see.

Show Rural at Coopavel – Linda Porter, Class Reporter

COOPAVEL was founded in Cascavel in 1970 and dealt mainly with grain production. In 2004 it has activities in seventeen cities in the West and Southwest of the state of Parana. It has a Head Office, 23 Branch Offices, an industrial area, a corporate university UNICOOP and a Technological Center in Coopavel. It employs 3,600 people and has 3,500 partners and has branched out into all kinds of livestock and grain production.

Our class had the fantastic opportunity of seeing behind the scenes as Coopavel prepared for their 2004 edition of Show Rural to be held from February 9-13. Show Rural is considered one of the biggest and most diversified agricultural and cattle raising events in the county of Brazil since its inception in 1991. It is now held in the Technological Center of Coopavel in an area of approximately 70 hectares. In 2003 it played host to 129,600 visitors and 250 exhibitors and the banks on site helped to finance over 500M US\$ in sales of machinery and other related products.

To support the visitors it has its own restaurant which can feed 20,000 people per day, free parking lots, emergency health system, information center, ice water and restrooms.

The Agricultural Machines Area showed tractors used for planting, harvesting, and other farm related duties. The Farming Products Area showcased companies with demonstrations on cattle being raised, best practices of hog raising, advances being made in poultry production, production of vegetables, fruits, grains, and other agribusiness related to cattle production and processing, and handmade products. Companies such as Embrapa, Emater, Iapar and Coodetec are present showing their latest results from research they are doing in agriculture. The show gives farmers the opportunity to see new products that have been developed and to actually see the correct way to use it on their fields. There are also displays showing environmental education, the evolution of agriculture and a very thought provoking exhibition on the exodus of a family from the farm to the city and what transpired in their lives as a result. It also showed the results of a family who stayed on the farm and was very prosperous.

This show would have been very interesting to see in progress but unfortunately we were not able to be there for it.

1. **Take Home Messages:** My take home messages from this site would be that the directors of this cooperative are looking to the future with a vision. They had a plan of where they wanted to be in 2007 and already had plans drawn up and ready to go to build a new plant that would use their vegetable protein in animal feeds as soon as they had the surplus dollars to do so.
2. **Trade:** I was really impressed with the President's knowledge of the markets in all commodities as well as where other competing countries were in their production. They were aware that the US will soon have to import soybeans to meet their needs and Brazil is getting ready to export theirs to the US. They really feel betrayed by the US failure to live by the rules of the fair trade agreement as the US has encouraged countries to move toward free trade and many developing countries did this only to find the US markets closed to them. For example Brazilian farmers can produce orange juice for about seven cents US per liter but Florida producers are given a twenty-two cents per liter subsidy which keeps the Brazilian orange juice out of the US market. It will be interesting to see how they make out with the soybeans that they feel the US will need to supply its markets!!
3. **Environment:** I really didn't pick up too much on environmental issues other than the cooperative is doing a great deal of research to be innovative in its farming production such as organic farming, monitoring soil quality, pests and how to control them, and using the materials left from production that often would be thrown away to transform into some form of a value added product such as decorations, etc.
4. **Food Safety:** Under food safety the cooperative seemed to have very rigid quality regulations for its products. They also had very high health regulations for its animals as they had their own lab which completed analysis on what it produced. It was also noted that employees had to provide the cooperative with documentation that they were in good health to be able to work there.

This cooperative exported to Asia and the Middle East and imported fertilizer for their production. They really knew the markets and where Brazil fit into them.

I was really impressed with this co-operative. It seemed to know how it had developed and why, where it was in the present in agriculture and had a real plan to take it to even greater prosperity in the future. It seemed to have no limits and would stop at nothing to continue to make agriculture prosper.

Coopavel's Poultry Processing Facility – Janice Whalen, Class Reporter

1. The take home messages for the poultry production facility were that Brazilians had the technology to slaughter and process chicken that was equivalent to Canada; and that they followed strict regulations with regard to food safety. They used up-to-date HACCP and ISO 9000 regulations and complied to the food safety requirements of the countries they were exporting to.
2. The top three environmental issues were:
 - a. Biosecurity.

This site controlled biosecurity by only receiving trucks from one farm at a time. These trucks were washed off before entering the plant and disinfecting upon

leaving the plant. The cages the birds came in were also washed and disinfected before going back to the farm. Visitors were not allowed into the receiving area. At the time we visited the Asian Avian Flu was a serious concern and biosecurity measures were enforced.

b. Waste water treatment.

The Water treatment facility is a series of 5 man-made lagoons which filter the waste water before it is returned to the river. Fish are used in the final lagoon to measure the water quality.

c. Poultry Processing waste.

All feathers and blood are returned to the feed mill where they are further processed into blood meal and feather meal and used in the production of animal feed as a source of protein.

Marc reported that chicken farms belonging to this coop spread the chicken manure on the land and compost the dead birds.

3. Food Safety – Their knowledge of food safety was impressive. They have spent a great deal of time learning techniques from other countries and applying them to their own facility. They follow HACCP and ISO9000 regulations and have a team in place to enforce rules. These include vets from the Brazilian government, and one employed by Coopavel for inspection purposes. They have a microbiology lab which tests samples from every bird. Every six months the facilities are evaluated by a Brazilian inspection team. Every year, five of the thirty processing plants across Brazil are randomly selected and inspected by an EU committee. They also have a tracibility mechanism in place. Birds are received from a maximum of 2 farms at once. Each bird is stamped with the time it is processed. If tracibility becomes a factor, they can identify the time it came in and identify the farmer who delivered the chicken.
4. Trade: Coopavel exports its chicken to other countries in South America, Asia, and Europe. They export 30% of their total production. Their exports are all frozen product. 70% of their production is for the domestic market. This is a brand new plant designed to meet the producers' needs.
5. Most of the technology used in this poultry processing facility was adapted from similar facilities in the US. The equipment and technology was imported from both the US and Europe. Therefore there was very little that Canadian farmers could further learn or adapt.
6. Niche markets for Canadian producers were virtually non-existent because everything was available or accessible to them.
7. Their unique issue was their lower cost of production. This was \$US 0.40 versus \$US 0.46 in the USA. The major cost difference was in labour. The average employee in the US earns \$1500 per month, in Brazil and average employee earns \$US350 per month. This cost difference will continue to make it difficult to compete against them in the global market

Hydroelectric Dam – Mike Cote, Class Reporter

1. Take Home Message: Efficiency is more prosperous. ITAIPU Electric has a reservoir that fluctuates very little. Although other dams can produce more power over short periods of time, ITAIPU can produce constantly and therefore produces more overall (1,800 megawatts).
 - a. Planning for the future: Protecting ecosystem with fish migration channel. Before building the dam they researched the impact on nature and took the liberty to ask professionals from around the world for advice.
2. Environment:
 - a. Ecosystem protection is an issue. ITAIPU is doing a good job at preserving natural habitat, so that the largest dam in the world has the least amount of impact on environment as possible.
 - b. Loss of fertile agricultural land. Did moving farmers and habitants from this land create an over-population elsewhere?
3. Food Safety – Not applicable.
4. Trade: ITAIPU is in the export business, sending electricity to Paraguay and Brazil. The company is separated 50/50 between two states. This is unique for an enterprise and it makes them an international role model for working together as a team. The future for ITAIPU looks very good, with new expansions in the works for 2004, ITAIPU will fulfill the demand for electricity for both Paraguay and Brazil. An issue may rise within 10-15 years with regards to demand for electricity, because ITAIPU after 2004 will have maxed out possibilities for further expansion.
5. Niche markets – not applicable.
6. Brazil was recognized in the past as being a 3rd world country. With the creation of this dam and the research done beforehand in order to protect the environment and surrounding communities (hiring ecologists, professors, marine experts, agronomist and other experts in their field), ITAIPU has proven that by being proactive, Brazil is becoming a leader. They want to be seen as equals rather than a third world country.
7. Canada can learn to adapt this company's attitude towards developing strong working relationships with other partnering countries. This company's attitude helped them to be efficient, safe and environmentally responsible.

Social Political Culture – Gerrit Fictorie, Class Reporter

- For anybody who forgot Valentine's Day this year can always make up for it on June 12. That is when Brazilians celebrate Valentine's Day!
- Population of Brazil is about 180 million people with a good portion living along the coast and the southern part of the country.
- Sao Paulo, the biggest city in South America is celebrating its 450th year in 2004 with 10 million people in the city and another 7 million in the surrounding outskirts. San Paulo does not try to hide its poverty or the garbage. Our tour guide tells us that about 5 years ago it was worse then what it is now. The government is trying to clean up the garbage, the slums and the homeless.

- In the 1960s to the 70s people immigrated from the country to the city because they were told that for a better life the city could provide much more than what the country could. With all the people and no place to live and/or no work, slums became part of the landscape.
- Brazil, 852-million ha. 7% of world area and 64% is farmland, today, 10% is cultivated. Brasilia, Brazil's capital since April 1960, they decided to move the capital inland some in hopes the people would all move inland.
- The government has a Head of State; currently it is Lulu De Silva.
- There are 26 states and 1 federal district.
- National Congress. The senate has 81 members and a chamber of deputies of 513 members.
- GDP was 466 billion US 2003.
- Inflation 2003 10% officially, some say off record that it is closer to 20%.
- Agribusiness was number 1 industry in 2003
- Population profile is 49% men 51% women.
- About 80% of the population is Catholics, and depending on what part of the country you are in, the other 20% could make up Protestant, Dutch/Christian Reformed.
- The Environment of the fifth largest country in the world has little change, the most southern states is where there is a noticeable difference. Winter is June to August and temperatures have been as low as 0°C. Summer, December to February temperatures can reach in the high 30's °C with tropical breezes at night. The Amazon basin is the rainiest part and humid, temperatures average 27°C.
- Brazil has adapted a program called "Agenda 21," in regards to the removal of the rainforest, this "Agenda 21" is an adaptation of sustainable and environmentally rational development in all countries. The document deals with conservation of soil management, protection of marine resources and fresh water management. The Amazon is 350 million ha. of protected land.
- Depending on where in the country you are farmers may have 20 to 50% of land in ecological preserve. If a stream or river passes through your property a vegetative buffer zone must be around it.

APPENDIX 3 – Comparison of Brazil & Canada

	Brazil	Canada	NB & PEI
Area	8.5 million km ²	9.2 million km ²	0.079 million km ²
Population	180 million	31.6 million	0.9 million
Life Expectancy	63.5 years	78 years	-
Cattle	150 million	15.5 million	0.175 million
Hogs	34.3 million	13.9 million	0.263 million
Chickens (meat)	594.3 million birds	87 million birds	2.5 million birds
Soybeans	51.6 million tonnes	1.1 million ha	0.003 million ha
Spring Wheat	5.5 million tonnes	8.3 million ha	0.013 million ha
Potatoes	2.9 million tonnes	5.59 million tonnes	2.05 million tonnes
Canola		3.8 million ha	0.0001 million Ha
Total GDP	Cdn. \$1,690 Billion	Cdn. \$1,150 Billion	-
%GDP (Agric.)	8.7%	3.3%	-
GDP per capita	Cdn. \$9,600	Cdn. \$36,700	-
Inflation	8.2%	2.2%	-

Value of Agricultural Exports from Canada to Brazil: Cdn. \$58.6 million (2002)

Value of Agricultural Imports from Brazil to Canada: Cdn. \$437.6 million (2002)

Data Sources: Statistics Canada, Brazil Co-operative Publications, World Trade Atlas