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AGR1110
Promoting Canadian Agrifood Exports
Final Paper

Part 1:

The Canadian Agri-food system is an important part of the Canadian economy and it would be ideal to take a closer look at how the system works and what could be done to expand it. The Canadian Agri-food system gives the chance for Canada to export agricultural products to other nations where there is a demand for those products and doing this could give Canada a chance to boost their economy (Government of Canada, 2014). Canada has made a large impact on the total value of Agri-food and agriculture exports worldwide and Canada has been ranked the 5th largest Agri-food and agriculture exporter in the world (Government of Canada, 2014). Because the Canadian Agri-food exports system is a highly complex and important part of the economy it will be important to explore the many opportunities that can come with the Agri-food system (Government of Canada, 2014). There are many different types of great Agri-food related products that could be exported to other countries, which could benefit Canada and the importing countries. Some great Agri-food products that could benefit Canada and importing countries include seed, irrigation systems, machinery, equipment, storage, and filtration systems. There are so many great products out there but a specific product that should be taken into heavy consideration is a small inexpensive handheld chemical sprayer. A small inexpensive handheld chemical sprayer has a lot to offer as a product but there is a lot about this product that needs to be addressed such as health/environmental concerns, product description, competitive products, costs and the benefits to Canada.

Product Description:

The 1-gallon Poly Tank Sprayer from Home Hardware Stores Limited is sold at a low price of \$22.99/each (Home Hardware, 2014). It is a light and easy to use handheld sprayer for minimizing the effect of pests, diseases, and weeds in crops. The sprayer includes an adjustable spray tip, a 16-inch polymer wand, 30-inch hose, anti-clog filter, polyethylene tank, and a 9-inch polymer pump (Home Hardware, 2014). The adjustable spray tip can adjust from a fine mist to a solid stream. The 16-inch polymer wand provides durability and good pressure. The 30-inch hose has a removable connection that helps with cleaning. The anti-clog filter helps to avoid any clogging. The 1-gallon polyethylene tank has a funnel top opening that is used to avoid spillage and it is easy to clean. Figure 1 shows what the 1-gallon Poly Tank Sprayer looks like and what it has to offer (Home Hardware, 2014).

Home Hardware would be a great distributor of this product because Home Hardware is a 100% Canadian owned company that has nearly 1100 stores located across Canada (Home Hardware, 2014). Home Hardware all started in 1964 when retailers bought Hollinger Hardware Limited in St. Jacobs, Ontario which is where the largest distribution center is today. Home Hardware has four distribution centers located in Elmira, Ontario; Debert, Nova Scotia; St. Jacobs, Ontario; and Wetaskiwin, Alberta (Home Hardware, 2014). Exporting this product would give Home Hardware Stores Limited a chance to expand their business to an international scale. The supplier for Home Hardware Stores Limited is Alliance International LLC, which is a business that brings together the products of Home Hardware Stores Limited and Do It best Corp. in

the United States (Home Hardware, 2014). Alliance International LLC would also get the chance to expand their business when exporting Home Hardware products to developing nations such as Nepal.

Health/Environmental Concerns:

When operating a chemical sprayer of any sort it is very important to know how to properly operate the piece of equipment safely. A small 1-gallon chemical sprayer is easier to handle and operate but when working with the many types of chemicals, herbicides, and fertilizers of any sort it is important to know what those products are and the hazards that come along with them. It is also ideal to take all precautions and be prepared before operating the chemical sprayer. Being prepared would mean that you are properly equipped with the proper protection wear when dealing with the chemicals. Proper protection equipment includes; protective clothes, protective gloves and eye protection (Canadian Centre for Occupational Health and Safety, 2009). It also could be a good idea to purchase a pesticide respirator mask for anyone who will be operating the sprayer because being exposed to pesticides or any other of the chemicals could directly affect your health (TSC Stores, 2014). Pesticides are designed to kill pests such as mites and aphids but this doesn't mean those chemicals could harm you too (Canadian Centre for Occupational Health and Safety, 2009). Table 1 shows the general symptoms that might indicate pesticide poisoning. It all depends on how long you are exposed to the pesticide to know what symptoms you could get. Pesticides can enter into your body in three different ways dermally, inhalation, and ingestion (Canadian Centre for Occupational Health and Safety, 2009). Dermal is when the pesticide is absorbed

through your skin and this can be one of the most common ways the pesticide can enter into your body and this can be easily be prevented if you wear the proper protection equipment (Canadian Centre for Occupational Health and Safety, 2009). Inhaling large quantities of the pesticide could have negative affects on your body and could be easily be prevented by using pesticide respirator mask. Ingestion by mouth can happen if bottle containing bottles are not properly labeled and by accident someone consumes it. If the chemicals are ever entered into your body either through your skin, by inhaling, or ingesting it will be important that the operator knows some basic first aid training when it comes to pesticides entering your body. It would be ideal to prevent it from happening but some times accidents do happen. If you have been exposed to the chemical it is important to know the symptoms to monitor your self and recognize if you have any of the symptoms. If you can identify any major symptoms from Table 1 then you should seek medical attention immediately (Canadian Centre for Occupational Health and Safety, 2009).

There are also many environmental concerns when using chemical sprays such as pesticides, herbicides, and insecticides. One of the biggest concerns with the pesticides is when it could run off into the water systems (Toxics Action Center, 2012). Other concerns are killing organisms that are not effecting the crop like soil microorganisms and worms for example which these organisms directly impact maintaining soil and this would reduce the amount of the macronutrients that are essential in maintain good soil (Toxics Action Center, 2012). The three macronutrients are nitrogen, phosphorus, and potassium. Pesticides being released into the crops and affecting organisms like bees has been a major concern recently.

Bees are an essential organism when it comes to pollination because the bees will pollinate plants and this allows the plants to reproduce (One Green Planet, 2014). If pesticides kill off the bees then this can really impact the environment, agriculture, and plant reproduction (One Green Planet, 2014). Some agricultural products would no longer be available for consumption if bees could no longer pollinate the following plants; broccoli, asparagus, cantaloupes, cucumbers, pumpkins, blueberries, watermelons, almonds, apples, cranberries, and cherries (One Green Planet, 2014). These are all of some of the basic health and environmental concerns that need to be taken into consideration before using the 1-gallon Poly Tank Sprayer.

Benefits:

Exporting this product can be beneficial to Canada because if this product is sold it can lead towards more opportunities for the Agri-food sector such as educating farmers in the importing countries on how to properly use the product. When selling this product farmers will also want pesticides, herbicides, and fertilizers to use for their crops and this can lead toward other Canadian export opportunities for other Canadian companies that sell those products. One Canadian company that could sell these products is BASF The Chemical Company. BASF The Chemical Company would be a great example of a Canadian company that could supply products such as herbicides, fungicides, and insecticides to other nations (BASF The Chemical Company, 2104). BASF The Chemical Company provides a wide variety of these products that could be used with the chemical sprayer from Home Hardware and these products together will meet the needs for farmers

in the importing nations (BASF The Chemical Company). BASF The Chemical Company is just one example of many other Canadian companies that could meet the demand for the chemical products. The farmers using the chemical sprayer will also need the proper protective equipment to safely operate the chemical sprayer. All of these products could also give other Canadian companies opportunities to export those products. TSC Stores would be a great example of a Canadian company that would be able to supply the farmers with all of the proper protective equipment such as; masks, protective gloves, full rubber suits, and eye protection (TSC Stores, 2014).

There are many different models and types of chemical sprayers that are distributed in Canada. One other type of sprayer is a ProSeries backpack Sprayer that holds 4-gallons (Chaplin International, 2014). This sprayer is made from Chapin Sprayers and you are able to wear it as a backpack and this gives you great support for carrying around and it is easy to use. The major issue with it is that it costs \$89.99/each (Chaplin International, 2014). Developing countries would not be able to afford this product. Another example of a different type of sprayer is a Premier Steel Sprayer that holds 3-gallon. This is also a product made by Chaplin Sprayers and this sprayer would be more durable than the 1-gallon Poly Tank Sprayer because the frame is made out of steel. Again the major issue with this sprayer is the price, which is also costs \$89.99/each (Chaplin International, 2014). Both of these products would be great for developing countries to use but realistically developing countries wont be able to afford those sprayers. This is why the 1-gallon Poly Tank Sprayer is a better option because it is inexpensive.

Part 2:

The importing nation for the 1- gallon Poly Tank Sprayer is Nepal. Nepal is a country located in southern Asia between China and India. Nepal is a developing country and the life expectancy of the Nepalese is 68 years and Nepal has a total population of 31 million (World Life Expectancy, 2014). 17% of the total population is located in urban cities such as Kathmandu, which is the capital city of Nepal. The other 83% of the total population is located in rural areas (Central Intelligence Agency, 2014). Figure 2 displays how Nepal is divided into 5 regions, 14 administrative zones, and 75 districts (Central Intelligence Agency, 2014). Nepal is also divided into three topological regions including the plains, midhills, and mountain regions (Naturally Nepal, 2012). Figure 3 shows how the three topological regions are structured and how each region slopes down from the Himalayas.

Nepal covers a total area of 147,181 sq.km and the population density in Nepal is 189 people per sq. km (Central Intelligence Agency, 2014). 16% of the total area includes the plains region (Naturally Nepal, 2012) . The plains region which is located furthest south in Nepal is where Nepal's best agricultural land is located and some of Nepal's main agricultural products grown on this land includes rice, corn, wheat, sugarcane, and pulses (Central Intelligence Agency, 2014) . The midhills is located between the mountain and plains region and this where 65% of Nepal's total area is located (Naturally Nepal, 2012). Because most of Nepal's total area is from the midhills the Nepalese farmers are able to make use of what farm land they have for agriculture. Figure 4 displays how the Nepalese farmers are able to efficiently use their land for growing agricultural products. The mountain region is the region

furthest north in Nepal and runs along the Nepal-China border. This region makes up only 8% of the total population because the Himalayas mountains in Nepal has the highest point on earth which is Mount Everest and Mount Everest stands 8848 meters above sea level (Naturally Nepal, 2012). Because the mountain region is so high there is not many people who live in the mountains and this means there is no agriculture acres in this region.

Nepal is one of the most unique geographical countries in the world because of its wide range of topical regions all condensed into only 147,181 sq.km. But having a wide range of topological regions in such a small area could have negative affects on the agriculture production in Nepal. With climate changing, precipitation changing, and temperature raising this will have a huge impact on the crops yields in Nepal (Joshi, Maharjan, and Luni, 2012). If food production is not increased then the growth rate of the crops will not keep up with the population increase in Nepal. Nepal has a population of 30 million, which is similar to Canada's but Canada has a total area of 9,984,670 sq.km where Nepal only has a total area of 147,181 sq.km (WPA, 2014). This means the Nepalese farmers will have to grow just as much food as Canada on far fewer agricultural acres. This can be a major problem for Nepal and the Nepalese farmers must use products to maximize their yields and potential to keep up with the increasing population. The 1-gallon Poly Tank Sprayer can have a large impact on productivity at a relatively low cost.

Exporting the 1 gallon Poly Tank Sprayer to Nepal could have great potential if done right. This sprayer can be useful for not only controlling weeds but could also help for controlling many types of leaf diseases such as fungi and molds. In Nepal, the average

farm has around 1 hector of land (Hrabovszky and Miyan, 1987). While Nepalese farmers traditionally may hire workers to pick weeds, investing in a sprayer can make this task easier while also allowing the farmers to control diseases or pests such as mites or aphids.

Transportation:

The 1-gallon Poly Tank Sprayer must be transported from the Home Hardware Stores Limited distribution center in St. Jacobs, Ontario to local hardware stores in cities such as Kathmandu in Nepal (Home Hardware, 2014). A cheaper option would be to ship this product overseas in Cargo ships. A great company who would be able to ship this product overseas would be the Cargo Experts (Cargo Experts, 2014). The Cargo Experts is a shipping company licensed by the United States and can ship cargos from any point of origin to any destination internationally (Cargo Experts, 2014). To find out the costs of how much it would be to transport the 1-gallon Poly Tank Sprayer from the Home Hardware Stores Limited distribution center in St. Jacobs, Ontario to local hardware stores in cities such as Kathmandu in Nepal, all you need to do is send the Cargo Experts a free quote stating what the volume is, where your point of origin is and your destination along with your contact information (Cargo Experts, 2014). On November 5th, 2014 I sent a free quote to the Cargo Experts stating the basic information needed and unfortunately I was unable to get a response.

When the Cargo Experts arrive at the point of origin in St. Jacobs, Ontario the products must first be checked to make sure the right volume of the products will be shipped (Cargo Experts, 2014). The products will then be shipped directly overseas and

when the Cargo Experts usually ship cargos to Nepal they typically go through Calcutta, India (Cargo Experts, 2014). The products will then arrive at local hardware stores in Kathmandu, Nepal. Bhakta Hardware Stores is just one of many great local hardware stores located in Nepal that would be able to have the chance to sell the 1-gallon Poly Tank Sprayer in their stores to the local Nepalese farmers (Konga Pages, 2014).

Cost:

The 1-gallon Poly Tank Sprayer from Home Hardware Stores Limited is a product that could have great potential for exporting to the Nepalese farmers. A major problem for Nepal's underprivileged farmers will be the cost. In Nepal, the Canadian dollar is equal to 88 Nepalese rupees. For a developing country like Nepal it can be very hard to find a good paying job. A low income earning job includes jobs such as a housekeeper, cook, cleaner, construction worker, and any other type of laborer (The Longest Way Home, 2012). All of the people who are in these occupations only make 100-150 rupees per day (The Longest Way Home, 2012). The average cost of living in Nepal is; 100-150 rupees for a non-meat meal, 5-10 rupees for a litre of water, and 30 rupees for a 45-minute bus ride (The Longest Way Home, 2012). It is very hard for the low income earning job workers to provide the basic necessities for themselves and their families.

83% of the total population lives in rural areas and most of the families who live in these rural areas live off the land (The Longest Way Home, 2012). The underprivileged farmers who have to live under low income earning conditions will have

a hard time affording the 1-gallon Poly Tank Sprayer. The 1-gallon Poly Tank sprayer costs \$22.99 Canadian, which is 2032.88 rupees (Home Hardware, 2014). The only way the Nepalese farmers will be able to afford this product is to minimize the cost for the underprivileged farmers; a sprayer could be purchased and shared by a number of farmers in the community. This would not only help the Nepalese farmers to minimize costs of the sprayer, but it will also give the community a chance to come together and educate each other on how to properly operate the sprayer and give each other suggestions on what kind of herbicides, pesticides, and/or insecticides to apply to the crops.

I would recommend exporting the 1-gallon Poly Tank Sprayer not only to Nepal but to other developing countries too. Developing countries like Nepal need to use more agricultural products like the 1-gallon Poly Tank Sprayer if they are going to be able to increase their crop yields to keep up with increasing population. The only way the underprivileged farmers will be able to afford the product is to minimize the cost of the sprayer by purchasing one sprayer that could be shared by a number of farmers in the community. The biggest problem with this is that the sprayer is made out of plastic and it isn't as durable as steel sprayers, but realistically the Nepalese farmers wouldn't be able to afford the steel durable sprayers. If the sprayers are properly used and shared in a community then the 1-gallon Poly Tank Sprayer will surely benefit the Nepalese farmers.

Word Count- 3130

Appendix

Figure 1:



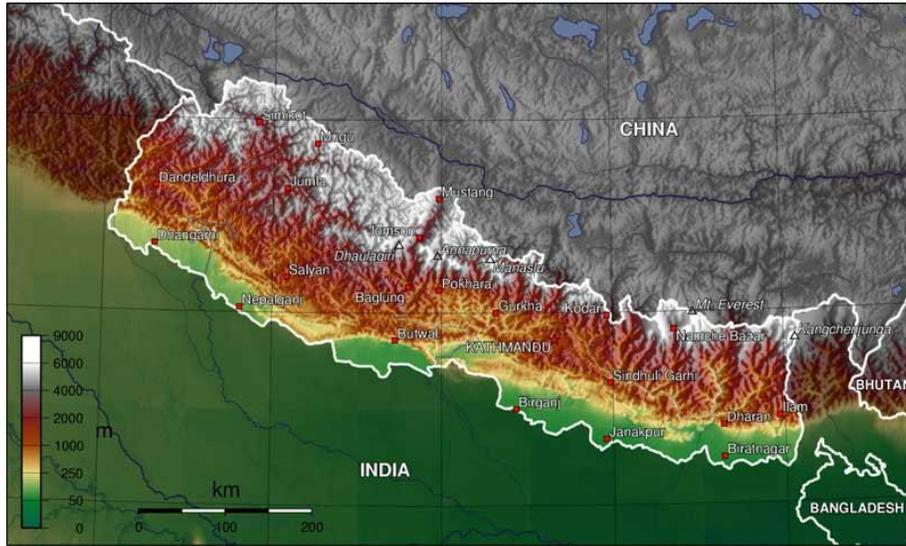
http://www.homehardware.ca/en/rec/index.htm/Outdoor-Living/Yard-Maintenance/Garden-Tools/Sprayers/Sprayers/1Gal-Poly-Tank-Sprayer/_/N-ntlke/R-I5050419

Figure 2:



<http://www.explorenepal.com/nepal/>

Figure 3:



http://www.nfpa.org.np/ideal_locations.htm

Figure 4:



<http://www.skyscrapercity.com/showthread.php?t=1557104>

Table 1:

Table General Symptoms that Might Indicate Pesticide Poisoning		
Mild Poisoning	Moderate Poisoning	Severe Poisoning
Any of the following: irritation of the nose, throat, eyes or skin headache dizziness loss of appetite thirst nausea diarrhea sweating weakness or fatigue restlessness nervousness changes in mood insomnia	Any of the mild symptoms, plus any of the following: vomiting excessive salivation coughing feeling of constriction in throat and chest abdominal cramps blurring of vision rapid pulse excessive perspiration profound weakness trembling muscular incoordination mental confusion	Any of the mild or moderate symptoms, plus any of the following: inability to breathe extra phlegm or mucous in the airways small or pinpoint pupils chemical burns on the skin increased rate of breathing loss of reflexes uncontrollable muscular twitching unconsciousness death

http://www.ccohs.ca/oshanswers/chemicals/pesticides/health_effects.html

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