

Manual One-Row Corn Planter Export to Nepal

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Part I: Product Information

Product Description:

The manual one row corn planter is a small sized planting machine with one line available working row (Amisy, 2000). The manual seed drill is very attainable for small farms, as it can be run by a single person rather than having to be pulled along by livestock or heavy machinery (Victor Machinery, 2012). In Nepal, crops such as corn and soybeans are mainly grown in the mid-hill/terrace regions (Shrestha *et al.*, 2011). This particular model will be an asset to the sloping terrace regions of Nepal because it is light and effortless to manoeuver (Amisy, 2000). The manual corn planter is capable of sowing corn as well as other crops such as; wheat, sorghum, soybean, peanut and sesame (Amisy, 2000), making it an adaptable and flexible machine for Nepalese farmers that would be operating on a diminishing budget.

The manual one-row drill is ninety centimeters in length, eighty-five centimeters in height and ten centimeters in width, weighing a total of ten kilograms and costing between thirty to eighty dollars per unit (Amisy, 2000). The working depth ranges from five to fifteen centimeters and is capable of planting in row spaces of ten to thirty centimeters. The corn seeding tank will hold up to ten kilograms of seed making the total weight that a farmer would have to carry, if operating at full capacity, would be twenty kilograms (Amisy, 2000).

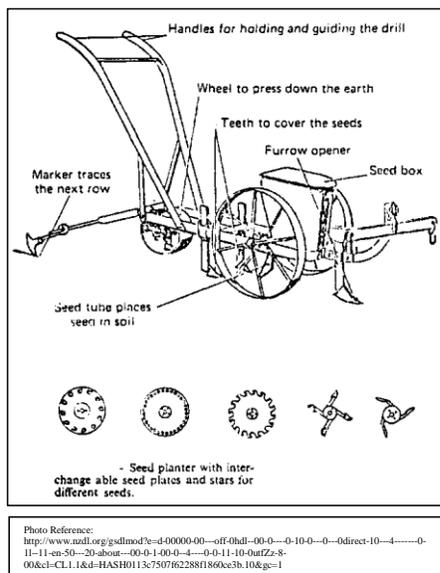
Table 1. Manual Corn Seed Planter Logistics (Amisy, 2000)

Weight	10 Kg
Size	90x10x85 cm
Rows	1 line

Working Depth	5-15 cm
Corn Seeding Tank	10 Kg
Cost	\$30-\$80 CAD

To maintain the manual one-row corn planter, you must clean and maintenance it regularly (Amisy, 2000). To be sure that everything is in good working condition you must clean the sundries in the sowing box and remove the dirt from the furrow opener. Systematic lubrication of the drives and chains are a benefit as well as regular checking of seed distribution to ensure that there are no issues with the pattern while in use (Amisy, 2000).

Figure 1. Labelled diagram of a similar model of the seed drill.



Produced:

This product is currently not produced in Canada. The main information I am gaining about the seed drill is from a Chinese based company called Amisy Farming Machinery located in Zhengzhou, China (Amisy, 2000). However, if a company were to start up and begin producing the manual one-row corn planter, they would benefit from the use of many amenities within the Canadian border such as, but not limited to, metal and rubber producing factories (Statistics Canada, 2016). Realistically, a company could designate any province in Canada as home base. Things to consider while deciding on a location would be; distance from international transportation (airfreight or shipping by boat), having amenities close to keep costs to a minimal budget for maximal profit, and being able to obtain a labour force large enough to fill all positions needed in the factory environment.

This factory would be assembling the planter and preparing it to be shipped internationally to Nepal. It would eventually be running on an efficient assembly line with sections and labourers for each step of fabrication. There are no available schematics on how to exactly produce the planter as well as what materials are best to use for optimal machine efficiency. To find this out it would be best to run through a trial and error research system in Canada before exporting to Nepal.

Shipping and Costs:

There are different options that a company should consider when deciding how to ship a large order of manual corn planters from Canada to Nepal. The table below shows three methods of transportation. Air freight proves to be the least expensive way of transporting eighty units of the manual corn planter from Toronto, Ontario to Kathmandu, Nepal. If a company chose to ship

by Canadian A1 Freight Forwarding ocean freight sector, the delivery would only be capable of shipping to India. From there it will have to be transported across land by the Cargo Router Transportation Company via a transport truck. When adding the two shipping costs together it exceeds the price of air freight shipment through Canada's A1 Freight Forwarding Shipping Company.

Table 2. Methods and Price of Transportation

Method of Transportation	From	Destination	Quantity	Total Cost
Air Freight	Toronto, Ontario	Kathmandu, Nepal	80	\$3160.00 CAD
Ocean Freight	Toronto, Ontario	Calcutta, India	80	\$1107.07 CAD
Truck	Calcutta, India	Kathmandu, Nepal	80	\$2592.00 CAD

Benefits to Canada:

Export development in Canada is a very positive industry, it provides jobs and growth towards the gross domestic product (E. Corporate & E. Economics, 2013). According to Statistics Canada the definition of gross domestic product is as follows: "Gross domestic product is the total unduplicated value of the goods and services produced in the economic territory of a country or region during a given period of time." (2016).

There are no companies in Canada that produces this type of seed drill. If a business decided to found a company such as this, it would provide a multitude of jobs that would benefit and decrease the percentage of Canadians who are living on unemployment funds (Statistics Canada, 2008). Jobs that would become available would be; managers, department heads,

assembly line, supervisors, labourers, etc. With founding a business such as this one, other companies will be involved to supply you with all products, necessary in the production of the seed drill. If the company was based out of Toronto, Ontario, Canada business' involved could possibly be Bike Depot Inc. located in Thornhill, Ontario, and they would provide the tires for the planter. Other materials needed to produce the seed drill will be plastic, to manufacture the seed box and handles, and metal to produce the furrow opener, seed plates, teeth to cover the seed and the base structure of the overall machine.

Any type of trade benefits Canada. The revenue that would come back to Canada might not be a large quantity of money to make a substantial profit for the Canadian based company, but it can provide networking to other countries about the products that they produce.

Part II: Export Potential to Nepal

Benefits to Nepal:

In Nepal, the economy is over run by the agricultural sector, it accounts for 33% of national production, 70% of all employment and one third of all exports (Ministry of Finance, 2011). A company will have to set up a home base that would receive and distribute the product being imported from Canada. This would open up jobs for the urban residents of Nepal, as well as provide business for the transportation companies that would be delivering the seed drill from the home base to the individual customer's farm.

Corn is a staple crop, primarily grown in the mid-hill regions, as well as a small percentage in the terrace regions where rice dominates the land (Shrestha *et al.*, 2013). Due to the vastly sloping hills and large competition with trees that are grown for fodder fuel, burning

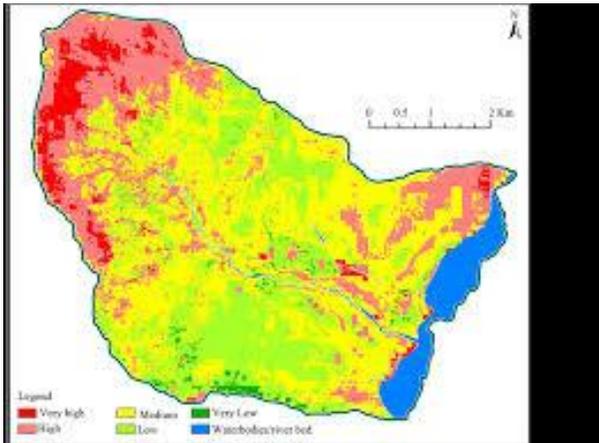
and building materials, the mid-hills are characterized as being a difficult area to efficiently grow crops on (Tiwari, 2012). It would be difficult for farmers to manoeuvre and weave a team of horses, or oxen through the trees on the steep land to plant a prosperous crop of corn. The manual seed drill would provide a swift and easy solution to this issue seeing as it is light and effortless to operate (Amisy, 2000).

The feeding of livestock uses up to 20% of corn, grown annually, in Nepal (Schreier, 1991). Livestock, used for farm work, require two to two and one-half pounds of air-dry feeds, daily, per 100 pounds of body weight (Albert *et al.*, 1987). Importing the manual one-row corn planter will decrease the need of livestock for farm-work purposes, thus decreasing the amount of crop wasted on feeding such animals, or leaving a feasible contingency to raise a larger herd of livestock for meat, milk or sale purposes. By doing this the country of Nepal will be able to increase its internal affairs as well as increase the gross domestic product (TWB, 2016).

Environmental Benefits

An issue that has recently been challenging the country of Nepal is soil erosion (Uddin *et al.*, 2014). Tillage erosion is the gradual downslope removal of topsoil by cultivation of the land and a decreasing thickness of the soil's profile closer to the top of a slope (Wang *et al.*, 2016). A way to prevent tillage erosion is by causing less disturbance of the soil on an annual basis (Ritter, English, 2015). The manual one-row corn planter will decrease chances of erosion to soil when compared to a team of work animals or a tractor because of its light weight, and less disturbing characteristics (Amisy, 2000). Along with soil erosion, emission pollution from tractor use would be decreased with the use of this machine because it will run manually, without any potential use of fuel.

Figure 2. A map of current Nepalese Soil Erosion



Potential Buyers and Overall Price:

When converted into Nepalese currency, one rupee is worth 0.012 Canadian dollar (CIA, 2015). Meaning that one manual one-row corn planter will cost 2500-6666.67 Nepalese Rupees, and the shipping will cost 263333.33 rupees making it a total cost of maximum 270000.00 rupees. The average income for an individual Nepalese resident is approximately \$456.25 CAD (HIC, unknown) which is converted to 38020.83 rupees. Income at this rate makes it unfeasible to individually buy the seed drill.

The customers that were envisioned to purchase this product would ideally be individual farmers. However, with the overall price of the machine, it would be more realistic is a community or group of farmer were to purchase the machine and share it amongst themselves or if an individual farmer was to buy the machine and rent it out to locals in his or her community for a profit to pay off the debt of purchase.

Global Competition:

Global Competition will possess a subsequent issue in the exporting from Canada to Nepal. Nepal's largest importing partners are India (61.5%), and China (15.4%) (CIA, 2015). The Chinese based company called Amisy Farming Machinery located in Zhengzhou, China (Amisy, 2000) sells this product, as well as when researched on <http://alibaba.com> all makes and models originated from India and China. There is still a chance that Nepal would choose to become partners with Canada on this product, however, the price of the product and the cost to ship overseas is more expensive than it is to primarily ship inland.

Possible ways for Canada to still benefit from the idea of the manual seed drill would be to ship the products needed to the, already established, companies located in China or India. Or, to find a way to produce and export the same product for a lesser price than the competing companies if that is possible. Further research must go into this possibility.

Marketing Strategies:

Marketing Plan:

Due to fragile mountain ecosystems in the mid-hills of Nepal, farmers are looking for a way to sustain soil fertility (Matthews, Pilbeam, 2005). The manual one-row corn planter is a unique selling proposition to aid the sustainability of soil and decrease chances of tillage erosion in the small farms of Nepal. This Canadian company is looking for innovative farmers living in Nepal who are willing to stray from traditional farming strategies and try something new, and better. The manual one-row corn planter is multi-functional, quick and easy to use. It will cost you anywhere between 2500-6666.67 rupees, making it the perfect investment for a small town to share amongst themselves. With a company base being built in the heart of Kathmandu, the seed drills are convenient to personally pick up or direct drop off is offered as well for just a small fee. If a community comes together and decides to buy a bundle of planters, they will

receive a ten percent discount per seed drill with free delivery for the first year of production.

Definitely opt into the amazing opportunity.

Advertisement Strategies:

Advertising strategies that would be effective to take advantage of in an exporting situation is; online advertisement, television advertisement, and social media advertisements. Using the marketing plan written above in a television commercial would be intriguing to governments, and locals that would be watching. Online and social media advertisements will be seen by a multitude of people, it would have to be something that catches the eye and does not look too wordy. In this particular case making business cards would not be as effective unless the business owner is planning on travelling to Nepal to distribute them to local farmers and wealthy entrepreneurs. The main idea is to receive the attention from the government in Nepal so that funding and preparations for building a business could begin.

Future Studies and Improvements:

Possible future studies for the production of the manual one-row corn planter in Canada would be direct contact with the residents of Nepal to calculate the amount of interest in the product compared to the Chinese or Indian model. Further research into decreasing the price of assembly, and transportation to decrease the overall cost for lower income families, as well as further research into possibilities of Canadian use in small scale gardens or research facilities.

An improvement from this stage, would be to find other agricultural products used in Canada that can be minimized into a manual, one row operating system. Any technologies that would improve the quality of manual planting, field preparation, weeding and harvest is advantageous to the residents of Nepal.

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