

BoronMax In Nepal

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As the population grows, the economy must grow to support it. Agriculture is also growing to support the many people and their various needs. Although the agriculture industries are growing, there are always problems that need to be attended to. In agriculture, especially agricultural crops, deficiencies such as boron deficiency can occur. When a deficiency arises, specific fertilizers are used to help the crops become healthy again. One type of deficiency that arises in some plants is boron deficiency. Boron is a micro-nutrient that is in the soil, which in turn helps the plant grow and stay healthy. This means boron helps the plant develop and maintain balance between sugars and starches (“Boronmax”, 2013). With micro-nutrients like boron, the crops cannot be given too much of it due to the fact that too much can be toxic to the plant. Depending on the plant, the deficiency in the plant will have yellowing, poor seed set, and flowering blasting which can lead to death of the plant, if nothing is done to help it become healthy again (“Boron”, 2013). When this happens boron fertilizer is needed to be given to the plant. Once the fertilizer is added back into the soil for the plant to take in the plant becomes healthy again. The best product of boron fertilizer to help the plant become healthy is BoronMax.

BoronMax is a boron fertilizer product produced by the Canadian based company NutriAg. The company is located in Toronto, Ontario. BoronMax is a liquid fertilizer that has a complex chemistry that enhances uptake and mobility of the applied boron (“Boronmax”, 2013). BoronMax comes in standard packages of 2x10L or 1L containers costing one hundred and twenty-five dollars per 10L. Depending on the amount that is being shipped there are different costs. For thirty-six cases of 2x10L containers of BoronMax, it would cost about twenty-five thousand dollars USD. This amount covers ocean charges, pickup fees in Toronto and rail charges to the terminal. The journey would take the product through to Calcuta, India and from there the product would go to Kathmondu in Nepal. This would take up to forty-five to fifty days. The product cannot be shipped right into Nepal due to the fact that Nepal is not a port country. Since NutriAg already ships products to India, it is not a problem to also ship the BoronMax to India. All of the shipping that takes place to get the product to Nepal from

Canada is done by various ocean carriers and forwarders. However, if only a single case of BoronMax were to be shipped to Nepal then NutriAg would use Fedex for shipping.

Although there are many companies with boron fertilizers NutriAg's product is the best, seen in figure 1, BoronMax is cost effective, accepted by the plant, it can be sprayed aerially or ground and it is compatible with other pesticides and other nutrients.

**Figure 1**

Product	Amount of boron	Compatibility	Other
BoronMax	8.10%	<ul style="list-style-type: none"> <li>• Very compatible with other pesticides and other nutrients</li> </ul>	<ul style="list-style-type: none"> <li>• Cost effective</li> <li>• Readily accepted by the plant</li> <li>• Sprayed aerially or ground</li> </ul>
MircoBolt	N/A	<ul style="list-style-type: none"> <li>• Compatible with other liquid fertilizers</li> <li>• Tank mixable with most pesticides</li> </ul>	<ul style="list-style-type: none"> <li>• Cannot be used in soybeans at 30"</li> </ul>
Agro-B	10.90%	<ul style="list-style-type: none"> <li>• Compatible with most pesticides and liquid fertilizers expect calcium</li> </ul>	<ul style="list-style-type: none"> <li>• Pre planting soil correction</li> <li>• Reduction of grinding insects population</li> </ul>

With importing and exporting comes a number of benefits. The benefits can be large or small depending on how they are helping the country. In a country such as Canada the number of benefits of NutriAg sending their product to Nepal are endless. If Canada were to start exporting to other countries like Nepal, then Canada's economy would grow. Also, having a Canadian company, such as NutriAg located in Toronto, because it influences the economy greatly and more jobs in the agriculture sector will be created. Not only does Canada benefit from this, but so does NutriAg. NutriAg will increase their productivity and with NutriAg exporting products to Nepal more agriculture companies will start doing the same thing. With more companies exporting products the stronger the importing-exporting system between Canada and Nepal will be. However, the benefits do not stop there, all of the various shipping companies that NutriAg uses will also benefit. More companies will want those shipping

companies to do their shipping due to the fact that they get the job done quick and keep the products from getting damaged.

Nepal is a small country located between China and India with a population of about twenty-five million (Cummings, 2005). And although Nepal does not look like Canada, it does have some things in common with it. Nepal is ruled by a Prime Minister, however its first prime Minister was not elected until 1991, before this Nepal was ruled by a monarch (Cummings, 2005). Nepal's international trade is limited, but its main exports are rice, jute, wool, timber, linseed, and hides. Most of the trade is with India, although Japan is becoming an increasingly larger trading partner. Lastly just like Canada, Nepal also does a lot of farming. In Nepal there are three types of land. Starting closer to India there are the plains. The plains are very fertile and so this is where most of the farming takes place due to the fact that this is the country's best farmland and it grows the most crops. These crops are rice, jute, mustard, tobacco, wheat, linseed, sugar cane and cereal grains (Cummings, 2005). The only downside to the plains is that they tend to flood. The next region of Nepal are the hills. The hills of Nepal are where most of the tea plants and forests are located. The farmers in this region eke out a living on small terraced plots of irrigated land (Cummings, 2005). Thus meaning that not as much farming is done here. Lastly there are the mountains, which are located close to China. There is very little growth here with the main source of agriculture being the herding of sheep, goats and yaks. In the valleys of the mountains wheat and barley is grown.

Although Nepal is a fairly small country there are many different agricultural companies and one company stands out more than the rest. Agriculture Inputs Company Ltd is a Nepal based company located in Kuleshwor, Kathmandu, Nepal. Agriculture Inputs Company has been around since 1965 as a public sector enterprise to produce and distribute high quality and improved agricultural inputs at reasonable prices across the country ("About", 2008). Nepal does not have many high quality fertilizers due to the fact that there is not a large production because most fertilizers are imported. Agriculture Inputs Company has many types of fertilizers for Nepalese to buy, however boron fertilizer

is not one of them. With that in mind BoronMax would be a great product for Agriculture Inputs Company to import. This would allow for more productivity of boron fertilizers in Nepal, and it would also allow for a new market of fertilizers to be sold in Nepal by Agriculture Inputs Company .

Like most companies Agriculture Inputs Company has many goals that they want to meet. Many of the goals that Agriculture Inputs Company have made deal with helping out the community, however there are some agricultural goals as well. One of the agricultural goals is to introduce liquid fertilizer to the farmers which in turn is good for NutriAg because BoronMax is a liquid fertilizer. If Agriculture Inputs Company was to import BoronMax from NutriAg then not only would Agriculture Inputs Company have high quality boron fertilizer, it would also have liquid fertilizer to sell to the farmers.

Generally in Canada mostly farmers use fertilizers, however in Nepal almost every house hold has their own garden with lots of different vegetables. With this in mind not only would the farmers want to use the BoronMax fertilizer to allow their crops to become healthy but the rural households would also use the fertilizer on their garden crops. BoronMax is relatively inexpensive which allows for more of the product to be bought and shipped to Nepal. However, when a household is buying the product it would be a better idea if more than one household was to buy the fertilizer because it would cost a lot for only one household to buy the product. This analysis goes for the farmers as well. With the farmers there is more land to cover but it would still cost a lot if every farmer was to buy the product so if multiple farmers bought the product it would be a lot cheaper.

**Figure 2**

	Product Amount	Amount Price
Farmers	2x10L	\$250.00
Households	10L	\$ 125.00
	1L	\$ 12.50

**Figure 2.1- Canadian Company and Nepal Company**



<http://www.nutriag.com/>



**कृषि सामग्री कम्पनी लिमिटेड**  
**AGRICULTURE INPUTS COMPANY LTD.**

<http://www.aicl.org.np/home/index.php>

Unlike Canada, Nepal does not have all the same resources. However, if BoronMax was to be brought into Nepal the benefits would be very large. Most of the benefits would centre around Nepal's crops. This is because Nepal does not have high quality fertilizers, so their crops are not growing to the optimum potential. With that in mind, the product BoronMax would be able to boost the micronutrient levels in the crops and the crops would start to become healthier and increase in yield and quality. With the crops becoming healthier, more food would become available to be used by the people of Nepal for themselves and for exporting. This would allow for more jobs in Nepal, since farms would need more help in producing bigger crops and more people would be needed in the business of exporting more product. Nepal and Canada would become stronger trading partners because not only would Canada be able to export to Nepal, but Nepal could then export to Canada when their crops were yielding better

quality and both countries would then benefit economically. These are great benefits not only for Nepalese, Nepal and Canada but there are also benefits to the households and for Agriculture Inputs Company. In Nepal a lot of the households have their own gardens and in the gardens are an assortment of different vegetables. Just like the crops in the field, the Nepalese can see when the vegetables in the garden are becoming sick. With having BoronMax available to use, the households would be able to use BoronMax in the gardens when the vegetables develop boron deficiency. It would not only allow for the crops to become healthy, but it would also allow for more high quality vegetables. Agriculture Inputs Company would also benefit greatly from Nepal importing BoronMax because with importing products it allows more trading to happen through different companies. With Agriculture Inputs Company importing through NutriAg it allows for Agriculture Inputs Company to gain more knowledge about other Canadian product that they maybe able to sell to the Nepalese. With importing through NutriAg, Agriculture Inputs Company will have a stronger importing system and will also gain a stronger exporting system with more Canadian companies, for more agricultural resources.

All in all the product BoronMax not only benefits Canada but also Nepal. Although the benefits for Canada are slightly different from Nepal's there are some benefits that are the same for both countries. Without BoronMax both countries would not be able to have strong importing-exporting system between each other. With a stronger importing-exporting system Canadian companies can make more chemicals and fertilizers to specifically help Nepal's crops. BoronMax fertilizer would be able to show Nepalese what Canadian products can truly do to help them out in the long run. Another benefit that helps both countries is that more jobs become available and that increases the economy. In Canada the economy will grow more due to the fact that NutriAg is a Canadian company. However, without this product Nepal crops would not have the best quality fertilizers and the crops would not be as healthy as they should be. That is why BoronMax is the best fertilizer for Nepalese to use on their crops.

Although BoronMax is a cost efficient product and a high quality fertilizer, Canada is a little bit farther away in comparison to China. Just like Canada, China sells many different types of fertilizers

and Boron fertilizer is one of the many. Borax is a boron fertilizer made in China and can be shipped to Nepal.

Dalian Fengyuan Fertilizer Co. Ltd is a Chinese based company. It is located in Liaoning, China. Dalian Fengyuan Fertilizer Co. manufactures different different types of fertilizers including Borax, the boron fertilizer (“Boron Fertilizer”., n.d). Borax is a high efficiency boron fertilizer that promotes growth of the seed, as well as movement of carbohydrates. The boron effects the protein and chlorophyll and makes a positive effect to nitrogen fixation (“Boron Fertilizer”., n.d). Unlike the Canadian BoronMax fertilizer, Borax is a powder fertilizer not a liquid fertilizer. With that in mind Borax is highly soluble, has a high content of boron which in turn increases yield and health of the plant (“Boron Fertilizer”., n.d).

Borax comes in standard packages of 25kg, 50kg, 500kg, and 1000kg and is shipped within 30 days of the purchase. Shipping is done by either sea freight, air cargo, or express. Sea freight is the longest way for the product to be shipped compared to the other to ways because it's travelling by boat and takes much more time to get somewhere than it does to fly somewhere. Air Cargo has a higher shipping cost then sea freight due to the fact that fuel is very expensive and if the product is going somewhere far away rather than just a short distance away. Finally, express is the most useful way to ship a product that is small and is needed quickly by another company, within or less than thirty days of the purchase. Not only is the shipping quick but the product can also be left in storage for long periods of time because of the low moisture level (“Boron Fertilizer”., n.d). This is good for the fertilizer to have because with being shipped all over the world it might take more than thirty days and the farmers do not want to have their fertilizer unable to do the job when they finally have it.

**Figure 3**

	Amount and Price	Shipping time	Shipping Cost
BoronMax	\$125.00 per 10L	45-50 days	\$2,500.00

Borax	25kg, 50kg, 500kg, 1000kg Unable to find price	30 days	Unable to find price
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**Figure 3.1-Shipping map**



<http://geology.com/world/world-map.shtml>

With BoronMax and Borax there are many differences and similarities. However, what boron does in the plant which is it promotes root tip initiation, synthesis of cytokinins and ensures translocation of auxin does not change. It also increases plant up take of calcium, magnesium, potassium and promotes cell differentiation and maturity (“Boronmax”, 2013). BoronMax is a Canadian product produced by a Canadian company whereas Borax is Chinese product manufactured by a Chinese company. Some other differences between the two fertilizers are that BoronMax is a liquid fertilizer and can be sprayed aerielly or ground. Where as Borax is granular fertilizer that can be spread by ground.

With adding BoronMax to crops there are many advantages. BoronMax is completely soluble at recommended rates, compatible with most pesticides and other plant nutrients, it stays wet on the leaf longer and is accepted by the plant (“Boronmax”, 2013). Sometimes crops do not accept the chemicals being sprayed on them but BoronMax is not like that because it is accepted by the plant it can help the plant become healthier.

When adding Borax to the crops there are also many advantages. Borax has consistency of particle size which ensures that it can be used easily. If the particles were all different sizes then when preparing the fertilizer for spraying then the farmer would not have the right amounts going out of the machine onto the ground around the crops. This could lead to toxicity of the applied boron and the plant could die. Some other advantages of Borax fertilizer are that it mixes well with other fertilizers. In many cases there are fertilizers that do not mix well with other fertilizers so the farmer can not use more than one at a time. However with Borax the farmer is able to use different fertilizers with it. Borax is considered to be clean and better for the environment which in turn is a good thing because many chemicals are harmful to the environment.

When looking at all these advantages of each product, seen in figure 4, the similarities and differences begin to show up. Although both products are different in their own way, they each can do the job of helping the plant become healthy. Allowing the crops to grow and produce more food for the Nepalese.

**Figure 4**

Product	Amount of Boron	Compatibility	Advantages
BoronMax	8.10%	• Very compatible	• Cost effective

		with other pesticides and other nutrients	<ul style="list-style-type: none"> <li>• Readily accepted by the plant</li> <li>• Sprayed aerially or ground</li> </ul>
Borax	15 % min	<ul style="list-style-type: none"> <li>• Can be mixed with other fertilizers</li> </ul>	<ul style="list-style-type: none"> <li>• Low moisture content</li> <li>• easy to applied using a machine</li> </ul>

**Figure 4.1- China Company**



<http://www.trade2cn.com/companyShop/091015155031366.html>

Just like BoronMax, Borax has great benefits for Nepal as well. Borax is made in China and is able to be shipped easily. With the amount of money that Nepalese would have to spend it would be a lot cheaper than what they would have to spend for BoronMax to be shipped to Nepal. With all of the advantages that Borax has it allows the Nepalese to see that Borax has many added benefits. This shows that Nepal can become a stronger importing exporting partner with China in order to be able to import products and also export some of their products to China as well. With a stronger importing exporting system between China and Nepal, Nepal can grow and start to export to more countries that

import from China. With this in mind it allows for more countries around the world to see what Nepal has to offer and what those countries can offer Nepal.

Both types of boron fertilizers are great for the Nepalese to use on their crops. BoronMax and Borax each have their own downside but they also have some advantages that the other does not have. BoronMax's advantages are, the fact that it is cost efficient and can come in different size packages depending on if the farmer wants a 1L package or a larger package. The downside to having BoronMax is that it takes a long time to reach Nepal from Canada. The advantage to using Borax is that China is quite close to Nepal, so to get the product to Nepal it would not take a long time to reach the Nepalese. However, Borax's downside is that it is a granule fertilizer. With this type of fertilizer if the Nepalese were to put it on the crops and then it was to rain then all of the fertilizer would wash away and it would be a waist of money. Although BoronMax seems like the best fertilizer for the Nepalese to have, the same goes for Borax. Both fertilizers would do the job to get the crops back to a healthy state, it just depends on the what the farmer wants to use.

### Work Cited

PHAZED NUTRITION PROGRAM. (n.d.). Retrieved October 1, 2014, from [http://www.alpineplantfoods.com/docs-western/ALPINE\\_program.pdf](http://www.alpineplantfoods.com/docs-western/ALPINE_program.pdf)

THE ALPINE LIQUID FERTILIZER BRAND. Retrieved October 1, 2014, from <http://www.nachurs->

alpine.com/alpine.html

Wright, H. (1978, August 1). BORON FERTILIZATION OF ALFALFA. *Ministry of Agriculture and Food*. Retrieved October 1, 2014, from [http://www.uoguelph.ca/plant/performance\\_recommendations/ofcc/pdf/out\\_of\\_print/A6-Boron\\_fertilization\\_of\\_alfalfa-July1986.pdf](http://www.uoguelph.ca/plant/performance_recommendations/ofcc/pdf/out_of_print/A6-Boron_fertilization_of_alfalfa-July1986.pdf)

Boron in Crop Production. (2013, January 1). Retrieved October 1, 2014, from <http://www.agriculture.gov.sk.ca/Boron>

Khanal (2014) Personal Communication in class. Date Oct.6,2014. R.Khanal is a man from Nepal.

"Nepal." *Nepal Office of the United States Trade Representative*. 9 May 2014. Web. 25 Oct. 2014. <<http://www.ustr.gov/countries-regions/south-central-asia/nepal>>.

"Quick Facts." *Canadian Economy Continues to Benefit from Exports*. 27 Dec. 2013. Web. 25 Oct. 2014. <<http://www.international.gc.ca/media/comm/news-communiques/2013/12/23b.aspx?lang=eng>>.

"BoronMax." *BoronMax-Nutriag Ltd*. Web. 20 Oct. 2014. <<http://www.nutriag.com/>>.

Dalgleish (2014) Personal Communication on email. Date Oct.26-30,2014. B. Dalgleish Territory Manager of NutriAg.

Lockhart (2014) Personal Communication on email. Date Oct 27-30, 2014. S.Lockhart Logistics Co-Originator of NutriAg.

Lonic (2014) Personal Communication on email. Date Oct 27-30, 2014. D. Lonic Shipping Co-Originator of NutriAg.

Cummings, M. (2005). Nepal. In *Volume Library* (Vol. 2, pp. 46-47). Southwestern/great American.

Agro-B. (2010, January 1). Retrieved November 17, 2014, from <http://agro-100.com/en/agrofoliars/agro-b-2>

High Efficiency Boron Fertilizer. (n.d.). Retrieved November 17, 2014, from [http://www.alibaba.com/product-detail/high-efficiency-boron-fertilizer\\_857588041.html](http://www.alibaba.com/product-detail/high-efficiency-boron-fertilizer_857588041.html)

About us. (n.d.). Retrieved November 13, 2014, from [http://www.aicl.org.np/home/about\\_us.php](http://www.aicl.org.np/home/about_us.php)