

**Nepal Export Project Insecticide Impregnated Ear Tags.**

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## **Part I Product information**

### **Introduction of Product**

Insecticide ear tags are primarily used for cattle. The tags reduce the amount of face flies, and kill horn flies that feed off the blood of cattle. Insecticide ear tags are safe to use for veal calves, beef cattle and dairy cattle. The use of insecticide impregnated can benefit cattle production sectors of Nepal, improving milk production as well as weight gains. The succeeding paper was designed to evaluate the prospect of exporting insecticide ear tags to Nepal from Canada. A brief overview of insecticide ear tags, their use, and where they are manufactured will be provided. The specific impregnated ear tag this paper will be identifying is the Eliminator® ear tag. Obstacles for transportation of this product, advantages and disadvantages for agriculture in Nepal will be fully evaluated. This paper will also gauge the affordability of the product for the Nepalese people and their community. In conclusion there will be recommendations to improve affordability of product and the environmental impact of this product.

### **Description of Company**

Vetoquinol was first founded in 1933 in the town of Lure, in north –eastern France. The company was founded by Joseph Frechin and has since been in business for over 80 years. The company is present in over 25 countries. (Vetoquinol, 2016) Vetoquinol was ranked ninth out of all the animal health companies in the world. (Vetoquinol, 2016). In Canada there are two plants one located in Princeville Quebec and the other in Bellville Ontario (Vetoquinol, 2016). Head office and a research and development center is also located in the province of Quebec (Vetoquinol, 2016)

**Vetoquinol Canada Inc.**

<b>Country of Ownership :</b>	Foreign ( France)
<b>Year Established in Canada:</b>	1991
<b>Exporting :</b>	Yes
<b>Primary Industry</b>	Pharmaceutical and Medical Manufacturing
<b>Business Activity:</b>	Manufacturer/Processor/Producer
<b>Total Sales ( \$CND):</b>	\$50,000,000+
<b>Number of employees :</b>	

**Figure 1:** A breakdown for Vetoquinol Canada Inc. in regards to employees, year established, and total number of sales, updated January 6, 2016. Information retrieved from the Government of Canada, Industries and Business; Canadian Company Capabilities with a few modifications.

**Description of Product:**

Vetoquinol offers Eliminator ear tags, they can be used in beef dairy and veal cattle. (Vetoquinol, 2000). Eliminator ear tags are slow release insecticide applied to the ear of cattle for season long protection of face and horn flies (Vetoquinol, 2000). The tags are applied to the ear of the cattle, the female and male parts of the tag are pinched together through the ear using an Allflex tagging system™ (Vetoquinol, 2000). The application of the ear tags needs to be completed with care. When applying the ear tag the applicator needs to wear chemical-resistant, when applying and removing the Eliminator Ear tag. Avoiding contact with eyes skin or mouth (Vetoquinol, 2000). Eliminator ear tags contain 6% Cypermetherin and 11% Diazinon. (Vetoquinol, 2000) Cypermetherin is part of the synthetic pyrethroid family of insecticides. This insecticide paralyzes, and knocks down the horn fly immediately upon contact. Diazinon is part of the

organophosphate insecticide group, that does not knock down horn flies immediately it takes a contact time of 1-2 hours for the horn flies to obtain a lethal dose. (Wright, 2006) Both insecticides reduce the burden of face flies on cattle, (Vetoquinol, 2000). Applying one tag will reduce the face flies but a tag in each ear will eliminate horn flies (Wright, 2006)

Eliminator ear tags are manufactured by Vetoquinol and then sold to various retail farm and distributing stores. Each distributor has a different price on the ear tags, the lowest cost found was \$69.95CND for a box of 20 tags located at Farmers Farmacy. Other prices range to over \$100CND. The Allflex tagging system is needed for application of the ear tags, it is made in Texas. The price of the Allflex tagging system can be found for the lowest cost of \$27.95 from an online distributor as well.

## **Uses**

### **Ectoparasites**

Horn flies are one of the major pests of cattle and is found in most cattle producing areas of the world. (Hendrix, 2013) Adult Horn flies spend their entire life on the host, they only leave to oviposit eggs on the manure of the cattle (Hendrix, 2013) Horn flies have the appearance of the common house fly, slightly smaller in size. (Tomberlin, 2004) The full cycle of horn flies from egg to adult stage ranges from 20-30 days, adult flies live for approximately 3 weeks and feed on the host 20 to 30 times a day (Tomberlin, 2004).

Horn flies have higher populations in the spring and fall then in the high heat of summer (AgriLife, n.d ). When temperatures are less than 21°C the horn flies will gather around the horns of cattle, warmer climates will bring flies to collect on the shoulders, back and sides. High temperatures with strong sun rays cause the horn flies to gather on the ventral abdomen.

(Hendrix, 2013). Cattle infected by horn flies show signs of irritation by kicking at their stomachs, flicking their tails and twitching their flanks(AgriLife, n.d ).

Face flies look similar to the common house fly (Hendrix, 2013). These flies are non-biting, but they feed on the excretions from animal's mucus membranes, and the liquid deposits found in manure. (Hendrix, 2013). Face flies are strong flyers and travel from host to host, this gives them an opportunity to transmit diseases throughout the livestock herd (Hendrix, 2013). A common infections caused by the face fly are ketatoconjunctivitis which is more commonly known as pink eye, and the transfer of *Thelazia* spp more commonly known as eye worms (Hendrix, 2013)

In order to limit the face fly and be rid of the horn fly a method of control needs to be used.

### **Manufacturing Information of the Product**

Eliminator ear tags are made in Bellville Ontario.( M Menard, Personal communication Oct 17, 2016) They are made of plastic and composed of 6% Cypermetherin and 11% Diazinon. The only contact number available in working order is the customer service line. The only information given was where the product is manufactured and the composition of insecticide contact from the MSDS pages. Personal communication last made on November 29, 2016 no new information was able to be found on the manufacturing of the product. (Colette, Personal communication, November 29, 2016).

## **Part II Export**

Nepal is land locked between China and India ( FAO, 2010 ) Nepal 's current population is approximately 28.51 million people, over one quarter of the population lives below the poverty line( World bank, 2016). Nepal is approximately 147 181 Km<sup>2</sup>, 800 Km long and 200 Km wide. (World Bank, 2016). Agriculture employs more than 70 % of the population. (World Bank, 2016) With such a large amount of the population invested in Agriculture, measures need to be taken to help it thrive and improve.

Nepal is made up of three ecological regions; Mountain, Hills and Terai (FAO, 2010). Mountain region ranges from 2000m-8848m in altitude. (FAO, 2010) Livestock graze for 6-8 hours on pasture when the land is not covered in snow. (FAO). The hills have a high animal population lactating cows and buffalo are kept in the villages (FAO, 2010). There are concerns I this hills regions in regards to heavy infestation of parasites and improvement is needed for animal diseases (FAO, 2010). Terai most households have cattle in this region, there are breakouts animal diseases as well ( FAO,2010).

### **Cattle Industry in Nepal**

In Nepal Cattle are raised for milk and used for working, pulling carts; buffalo are reared for milk and meat. (FAO) In the year 2003-2004 it was found that buffalo produced 70% of the milk in the country while cows produced almost 30 % (FAO, 2008). The livestock industry in Nepal is part of a feedback loop that is the entirety of agriculture (FAO, 2008). The farmers depend on the livestock for fibers and other products and the livestock depend farmers to be able to thrive and live ( FAO, 2008 ) ( Figure 2 ) .



**Figure 2:** Feedback loop between farm and livestock, input of feed from the farm gives the output of animal products for the farm; food, or fibers. Diagram retrieved and modified from Country pasture/ Forage Resource Profiles website.

The Ruminant population is highest in the Hills, followed by the Terai and the least ruminants are found in the mountains (FAO, 2008). In the Hills the cattle surplus is an occurring because the disposal of calves and both male and female cattle does not occur due to religious believes. (FAO, 2008) Due to the religious believes in regards to cattle they cannot be sold to slaughter (FAO, 2008). In the Terai region the female calves are used and herd replacements, males are used for working or are slaughtered or sold to India (FAO, 2008). The different livestock breeds in Nepal are; Holstein crosses, Pahari Black, Terai White, Lulu, Achhame, Brown Swiss and Jersey ( FAO, 2008)

### **Benefits to the Importing Country**

Horn flies are a major pest to cattle, populations of horn flies are common in Africa , Asia

and the Americas (Hendrix, 2013). Due to the fact that horn flies feed multiple times a day the feeding causes pain and annoyance to cattle, this can lead to weight loss due to inefficient use of feed. (Hendrix, 2013). In the USA horn flies are responsible for 14% reductions in weight gains; this equals to approximately 12-14 lb. (Baker, 2013) Due to the fact that Nepalese cattle are already on a poor diet due to large numbers and limited good quality feed, farmers cannot afford for anymore of the feed to go to waste (FOA, 2010). Thus limiting horn flies will help improve the efficient use of feed. (Baker, 2013)

Another factor to consider with the large number of cattle and water buffalo in Nepal is the transmission of disease. The face fly travels from host to host and can cause diseases such as pink eye and eye worms in cattle (Baker, 2013). Pink eye is most common in late spring, summer and early fall flies transmit the disease from animal to animal (Novartis, 2012).

According to Dr. Doug Sholz,

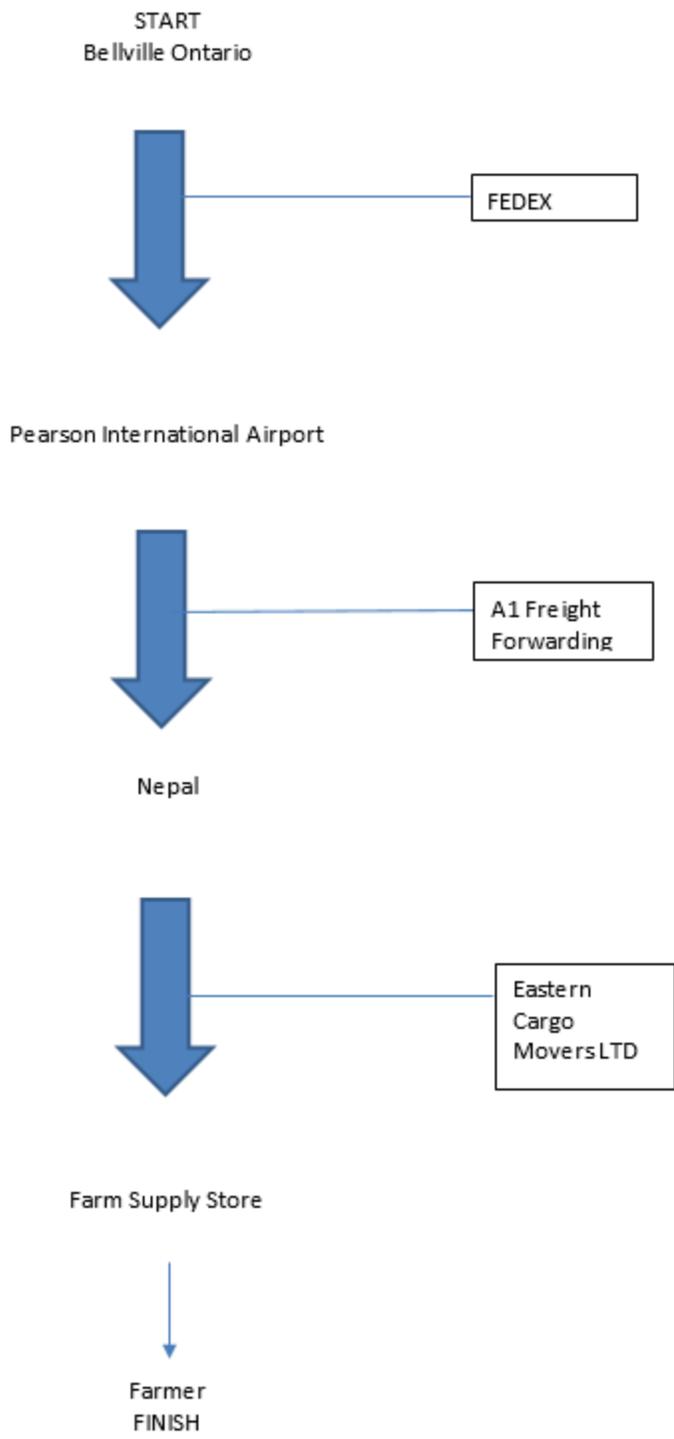
director of professional services at Novartis Animal Health “Once pink eye begins to spread within a herd, it’s very difficult to control “(Novartis, 2012).

Nepal has more than one quarter of its population living under the poverty line( World bank, 2016). If the people of Nepal can increase weight gain the people who live in the Teri regions that export cattle to India (FOA 2008), could turn a larger profit for raising better quality cattle. Thus in turn helping to close the gap of the poverty line and those in Nepal living beneath it.

## Transportation

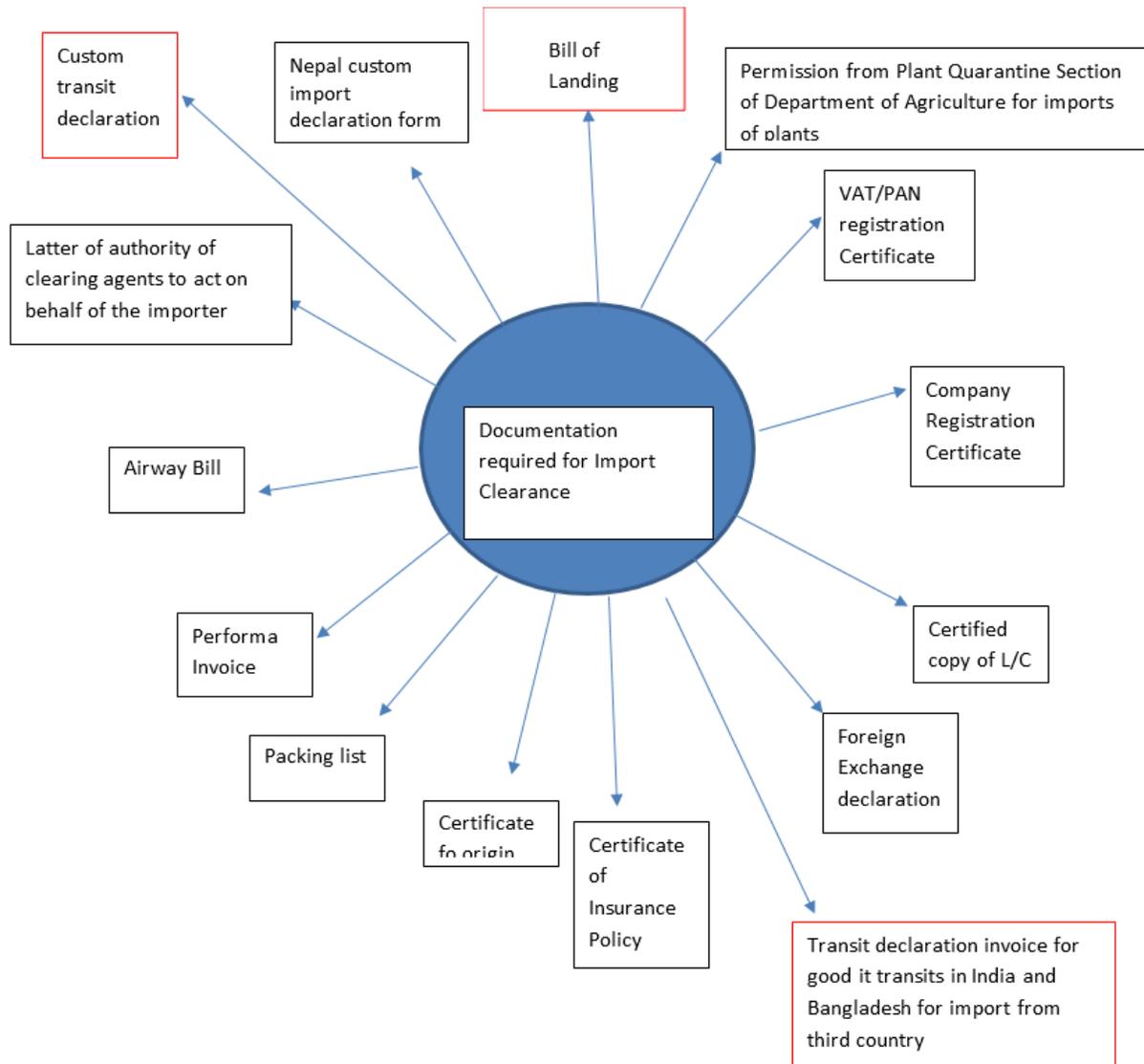
<p><b>Transportation of Eliminator Ear tags.</b> 20 tags per box. Each tag weighs 10.5 g Dimensions of Eliminator tag box : l : 6 in <math>\frac{3}{4}</math> . W: 3 inch h: 5 inch <math>\frac{1}{4}</math> Shipping box dimensions : 18X x18 x18 Total of 30 boxes can fit in the above dimensions. Therefore : 600 tags = 300 cattle.</p>
<p><b>STEP 1: Transport product from manufacturing plant in Bellville Ontario to Pearson International Airport.</b> – Mode of transportation FedEx Base rate : \$66.50 CND Declared value : \$66.50 CND Fuel Surcharge : \$2.66 CND Canada Ontario Harmonized sales : \$14.11 CND <b>STEP1 Total : \$149.77 CND</b></p>
<p><b>Step 2 : Transport product from Pearson to Kathmandu Nepal-</b> Mode of transportation A1 freight forwarding Air Freight : \$98.75 CND Terminal and Screening Fee : \$95.00 CND Processing Fee : \$75.00 <b>Step 2 Total : \$268.75 CND</b> <b><u>TOTAL : \$418.52</u></b></p>
<p><b>Step 3 :</b> Transport from Kathmandu Nepal to Farm Supply Stores Will use Eastern Cargo movers LTD.</p>

**Figure 3:** Estimated costs of shipping Eliminator Ear tags to Nepal. Estimates were formulated directly from A1 freight forwarding and FedEx.



**Figure 4:** A flow chart showing the Start and finish of the transportation of Eliminator Ear tags to Nepal

## Documents Required for Import/Export Clearance



**Figure 5:** The following chart was retrieved and modified from Nepal Freight forwarders association (NEFFA). The documents shown in red are documents required to Import third party by sea/ land.

Documents Required for Export Clearance in Nepal
<ul style="list-style-type: none"> <li>- Customs Declaration Form</li> <li>- Packing List</li> <li>- Certificate of Origin</li> <li>- GSP Certificate if applicable</li> <li>- Copy of letter of credit or advance payment statement received from the bank</li> <li>- Foreign Exchange declaration Form of Nepal Rostra Bank</li> <li>- Copy of Firm/company Registration Certificate</li> <li>- Copy of income tax registration certificate of VAT</li> <li>- Airway bill</li> <li>- Letter of authority to clear the consignment</li> <li>- Phytosanitary Certificate for agriculture</li> <li>- Certificate from department of archaeology for the export statues</li> <li>- Visa authorization certificate from Garment visa office of National Productivity and Economic Development.</li> <li>- Recommendation letter from Garment visa an office of National productivity and Economic development.</li> <li>- Cites certificate</li> <li>- Value certification from the Handicrafts Association</li> <li>- Clearance certificate of Department of Drug Management for medicines</li> <li>- Certificate of origin from local chamber of commerce</li> <li>- <b>Transport manifesto, one copy per truck</b></li> <li>- <b>Custom transit declarations</b></li> <li>- <b>Transit declaration invoice for goods in the transit via India Bangladesh to third country destination.</b></li> </ul>

**Figure 6:** The following chart was retrieved and modified from Nepal Freight forwarders association (NEFFA). The documents shown in red are documents required to export third party by sea/ land.

### **Challenges/ Recommendations**

The most important part about using insecticide impregnated tags is that the whole herd is protected. The major challenge with shipping products made in Canada to a poorer country like Nepal is that it is just not affordable. The largest challenge with this product is that it is toxic to fish and bees. (Vetoquinol, 2000). This product cannot be disposed of near water as it is water soluble and will kill fish. (Vetoquinol, 2000) Another issue with this product is that it causes a huge decline in bees, which are already on the endangered species list. A deep concern is if this product was exported to Nepal it could cause more damage than good. There was also a study completed in the states it is rare for the horn fly to be prominent at elevations higher than 2400m, as well the face fly is not a problem at high altitudes either. (Scasta, 2015). Using high integrated pest management by increasing the altitude reduces input cost, and helps prevent the use of parasite treatments. (Scasta, 2015)

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