

***The Financial Viability of Double  
Compacting Hay in Ontario***

***Executive Summary***

*Submitted to*

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*By*

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The demand for high quality hay is increasing as international markets are becoming much more evident. Recent “Fact-Finding” missions are proving that the demand for hay in these markets is rapidly increasing. The need for double compaction facilities in Ontario is being seen as an essential requirement to enable Ontario producers to maximize the container capacity and be financially sustainable into the longer term.

The Ontario Hay Marketing Forum has appointed a working group to further investigate the possibility of establishing a double compaction facility in the province and has agreed to do a feasibility study to further determine the financial viability of the facility.

This project provides a review of the Ontario forage industry including the potential for greater exports to world markets and assess the potential transportation costs. The market assessment will include a review of Ontario’s ability to produce, process and export their forage commodities to global markets. The market scan will include an assessment of: volume of hay and alfalfa available; what qualities of hay and alfalfa are most readily available; what varieties of forage are most suitable for which markets; and strategic locations to establish processing facilities in Ontario. Transportation costs will be a significant component of the export market assessment. The market assessment will review present transportation costs and whether they are a hindrance to accessing a greater global market share.

Ontario hay producers have an opportunity to supply some of these overseas markets. Tame hay is the most prevalent crop grown in Ontario, with over 5,400,000 tonnes of hay produced in 2011. Most hay production is mixed and varies depending on the hay market in the region. For example hay grown in the Western region is more for dairy markets, while hay grown in the Southern region can be more targeted for equine markets. However, given the large volume of hay grown in Ontario, it is noteworthy that Statistics Canada estimated that under 27,000 tonnes were exported in 2011. Even using the estimates from the Ontario hay exporters, the amount of hay exported is still under 46,000 tonnes.

Since most hay producers in Ontario are not familiar with marketing their hay products to external markets, significant effort will be required to ensure the producers understand the type of products that are acceptable and desired in overseas markets. As Ontario hay producers start to examine overseas export markets, there are several key points to consider:

- Most overseas hay markets are looking for pure alfalfa or pure timothy. The hay importers in overseas markets like to purchase pure timothy and alfalfa so they can blend them to meet the needs of their clients. Little pure alfalfa or pure timothy are grown in Ontario
- The main stream overseas hay importers contract for large quantities of hay, in some cases larger than Ontario's total hay exports.

- 10 - 12% moisture critical for shipping to overseas markets in containers. Moisture levels over 14% are considered a hazardous material by most shipping companies.
- The markets for compacted small square bales (100-120lbs) that goes to end users without further processing is more willing to explore mixed products.
- Due to the lack of knowledge about hay preservatives, most of the larger overseas markets prefer not to have hay preservatives on their products, and some will not accept hay with preservatives on it.

With some of the large hay importing markets paying in excess of \$500/tonne and even U.S. markets averaging over \$240/tonne, hay exporting can be lucrative if the right product is produced. However, processing the transporting the hay to the overseas markets can be expensive so it is important understand the margins and other opportunities. Some producers are finding the high commodity prices of corn and soybeans attractive and are shifting production from hay to these high valued crops that do not require as much management. This is evident in the drop in hectares of all types of hay in all growing regions from 2006 to 2011. While other hay producers are competing in the overseas hay markets and are interested in expanding Ontario's ability to better serve these hay markets.

To be effective in overseas markets it is necessary to densify the hay to bring containers to full weight capacity. Several options exist, however this project focused on hay compaction. Equipment was reviewed based on specific criteria as suggested by the project steering committee:

- input bales are either a 3 x 3 or 3 x 4 large square.
- output bales would be small square bales for easier end user handling.
- the installation site will have 3 phase electrical power.
- the compacting equipment would be housed in a structure to keep the operation dry.
- minimum annual tonnage compacted would be approximately 10,000 tonnes.

To ensure a quality end product moisture levels in the hay must be approximately 10 - 12% before compaction. These moisture levels can be achieved by either requiring the hay producer to supply hay at these levels or include drying in the processing.

Based on the location of hay production in Ontario and the transportation infrastructure, it appears the ideal location for a large scale hay processing facility would be close to Hamilton. Hamilton is relatively close to a large share of the hay production and has access to highways and rail service. CN's Brampton container facility is relatively close as well.

Based on the processing and transportation costs and the market prices, it appears the most lucrative market for this type of operation is the Middle East where hay exporters where receiving between \$500 - \$600 /tonne, leaving \$270 - \$393/ tonne to cover hay expenses and profit. Hay exports to the

United Kingdom were estimated to receive approximately \$274 / tonne, leaving \$50 - \$73 /tonne to cover hay expenses and profit.

Given the controls and monitoring required to operate this enterprise, the two ideal business models would be either a corporation or a joint venture. Either of these models, from the point of view of tapping into equity markets, or of securing professional management, would seem to offer the best alternative. It should also be noted that a successful enterprise would be required to deal with hay producers and hay importers. Some hay producers will have their own version of quality hay and it is the responsibility of the enterprise to ensure the hay meets export quality. Some of the hay importers are large corporations, and with the importance to supply chain management of forming successful relationship with buyers and sellers, the issue of market power becomes a potential issue. A smaller producer would inevitably be a price-taker in a potentially volatile and risk-heavy market.

Ultimately, the successful business model will adapt to the demands of the hay producers and hay importers. Hay processing in Ontario will involve a number of hay suppliers that are subject to numerous variables including weather, other marketing opportunities and the potential for the production of other cash crops. Currently much of the overseas hay markets are concentrating on the importation of pure alfalfa or pure timothy with the intention of blending the two products to meet the needs of their customers. The enterprise will need to work effectively with hay importers to determine the characteristics required for the end users. The successful enterprise will integrate the requirements of the end consumer throughout the whole supply chain and ensures the each participant of the chain is informed of those requirements. For the hay processing enterprise to be successful in the long term and ensure a sufficient supply of quality hay, hay producers should also benefit in the profits of the enterprise.

### *Specific Recommendations*

- *Educate hay producers on the type of products overseas markets are looking for. Emphasis the need for top quality hay that did not get rained on and the need for proper storage facilities.*
- *Develop more marketing missions to overseas markets and come prepared to discuss the advantages of Ontario mixed hay for their specific animals. Meet the buyers and establish relationships. Understand their markets in terms of who is the end user and their requirements. Bring samples and feed analysis.*
- *Consider branding Ontario hay based on its quality characteristics.*
- *Establish a small working group of interested parties to further examine the benefits and costs of a hay processing facility. Some cost saving could be found through the expansion of existing operations.*

- *All compacting equipment in this study have more the enough capacity to compress over 10,000 tonnes of hay annual. Choose the unit the operators will be most comfortable with and ideally have experience with.*
- *Initially promote the need for low moisture hay (10-12%), but have some drying capability with the use of two Veda Hay Dryers. More drying capacity can be added later if deem necessary.*
- *Due to the relatively small market share, the Hay Processing Enterprise should consider using a hay broker for overseas sales unless some of the members have market contacts or until it is well established.*
- *Initially it might be necessary to focus on spot markets as they tend to be less specific on the type of product.*
- *Bundle the small bales for easier transport and better market acceptance, but ensure the bundled bales can breathe.*

This Executive Summary provides a very basic overview of the complete feasibility study, but if the entire report (50 pages) is desired, please feel free to contact the manager of the Ontario Forage Council. Phone: 1-877-892-8663 or (519) 986-1484