Textured Soy Protein (TSP) General Overview

of Prices, Costs, and Markets

General

Initial research indicates a wide variation in prices for textured soy protein (TSP) in North America. There are many variations of the product based on flavouring and form of pieces.

TSP is made by adding texture to defatted soy four through the use of heat and pressure to transform the soy proteins. It is normally a dry product. It can take many forms (bits, chunks, etc.) which are all aesthetic variations of the same product. In most cases it is flavoured to resemble meat.

soybeans→ *oil extraction*→ flakes→ *milling*→ de-fatted flour→ *texturizing* → TSP

Typically, TSP is used as in food manufacturing as a replacement for meat in entrees, as an ingredient in the production of meat analogues, or as filler in processed meat products.

Recent developments in TSP are resulting in a new wave of products that are textured in such a way as to produce a very meat like texture and consistency (higher moisture, fibrous, etc.).

Prices

Processor Sales

The main producers of TSP internationally tend to sell only in large volumes. However, prices direct from the large players are the closest indicators of real prices for processors, upon which any business modeling should be based. Prices are usually quoted in US dollars, before freight, for large (5 pallets or more) orders. Usually, there are many other variables to the pricing of these products (volumes, specification of product, uses, etc.). Nonetheless, general prices, not including freight, of raw TSP are shown below, in Canadian dollars.

Legacy Foods	- $0.94/ kg	FOB Kansas
ADM	- $1.11 to $1.28/ kg	FOB Illinois
SunOpta	- $2.39/ kg	FOB Iowa (non-GMO)
SunOpta	- $2.96/kg	FOB Iowa (organic)

Distributor Sales

Smaller orders of product are usually marketed through regional distributors. Cargill marketing in Canada is handled by Acatris. ADM markets products in Canada via Newlyweds Foods. Thus, a more accurate price would come from a regional supplier of one of these firms with prices reflecting delivered prices for moderate volumes. These figures are provided below.

Acatris (representing Cargill)	**-$1.46/ kg**
Newlyweds Foods (representing ADM)	-$X.XX/ kg (info to come)

Thus, there is likely about a 10-25% margin between the production price and the delivered, packaged price of TSP from a distributor. This margin will cover shipping from production, shipping to the end user, packaging, and marketing.

Consumer/ End User Sales

Many small companies, offering small volume units sell the product at high prices. These can range form $2.00 - $9.00 Canadian per kilogram (kg). In many cases, it is not clear if they are actually making TSP, distributing TSP, or adding value (flavouring) to raw TSP.

A brief list, translated into Canadian Dollars per kilogram is provided below:

$9.39/ kg	- flavoured	- 2 pound lots
$8.98/ kg	- flavoured, coloured,	- 1 pound lots
$7.54/ kg	- flavoured	- 6, 2 pound cans
$5.18/ kg	- unflavoured	- 2 pound lots
$4.79/ kg	- flavoured	- 25 pound lots
$2.81/ kg	- flavoured	- 1 pound lots
$2.15/ kg	- flavoured	- 25 pound lots
$2.04/ kg	- unflavoured	- 2 pound lots
$1.99/ kg	- unflavoured	- 5 pound lots

Costs

Inputs

The input for TSP can vary. In some cases, it is produced in a single process (including soybean de-hulling and oil extraction) directly from the soybean. In other cases, the TSP is made from de-fatted, or low fat soy flour. Anecdotal evidence suggests that it can even be made from a slightly milled soy meal.

Using general prices for de-fatted soy flour, approximate margins can be derived. The price of flour can vary significantly depending on the attributes of the product and volume purchased. In general, prices range from $0.50/ kg - $0.70/ kg, Canadian, not including freight.

Production
The main cost of production for TSP is capital equipment and energy. These costs need to be figured into profit predictions.

Packaging
Normally, TSP seems to be made available to customers in various package sizes depending on the amount being purchased. These include 1 and 2 pound cans; 1, 2, and 5 pound bags; 25 pound bags; and totes.

Packaging equipment and costs for TSP will be similar to other dry foods. Co-packing arrangements are possible as a means by which to reduce capital costs and ensure economies of scale.

Distribution
Part of the TSP margin will be freight. TSP is generally light weight and bulky which means that shipping costs from point of production to end users is a significant. Hutchinson, Kansas is 2,041 km, Decatur, Illinois is 1,027 km, and Des Moines, Iowa is 1,348 km from Toronto.

Discussions with ADM indicate that a reasonable estimation of cost of freight from Decatur to Toronto would be an additional 0.08/ kg. Alternately, we can estimate the cost of shipping at $1.23/ km for a truck.

With shipping costs in mind, we can determine the cost savings of a domestic TSP production unit to service Toronto and the Great Lakes basin.

The shipping cost from the distributor offices (usually in Toronto) to end users will be similar to that of any domestic producer. Thus, these domestic shipping costs are not included in the general analysis.

Promotion
One key in marketing these products is to identify and secure key accounts. This may include a few large accounts or a number of smaller to medium sized accounts. Such efforts can require a great deal of time and resources, especially given the existing entrenchment of current producers and distributors. To address this challenge, a strong sales force needs to be developed either in-house or through an existing ingredient supplier.

Estimates of Profits
Very generally, we can see that:

Profit = Price – (Input Costs + Distribution + Promotions)

Profit = Price – ([flour + production costs + packaging] + [storage + shipping] + [promotion + sales force + travel + samples])

In order to compete with existing players, price must be less than the TSP already on the market, or the TSP be must be entirely unique to the marketplace (organic, non-GM). Even unique products, must be very competitive on price to commodity TSP.

If we estimate, conservatively and generally, and assume a target profit margin of 6% we can derive that we need a profit of $0.10/ kg. Considering that we can estimate flour costs at $0.60/ kg, we need to keep all other costs to less than $0.70/ kg.

If we estimate that current regional suppliers are operating on approximate margins of $0.56/ kg *({1.46 (price) – 0.90 (TSP cost) = 0.56 (gross margin)})*, we can derive the following:

$0.56/ kg (gross margin) – $0.09/ kg (est. 6% net profit margin) = $0.47/ kg (costs)

If we estimate our per kg costs at $0.70 (worst case scenario), we see that it is $0.23 higher than that of the current suppliers. If the current suppliers have transportation costs of greater than $0.23, than we should have a competitive advantage.

Even with an economic competitive advantage, these companies also have well established distribution, promotion, sales, and services which have intrinsic and significant value worthy of noting.

Markets

Competition

The TSP market is dominated by a few large producers based out of the US Mid-West. Competing with these large, established firms can be a challenge. Anecdotal evidence suggests that the most attractive markets are those that are being under-serviced by the major players including non-GMO and organic segments.

Target

The main market for raw TSP are the food processing and manufacturing sectors where TSP can be used as an ingredient or foundation in meat, meat analogues, and entrée products. Any new TSP production would also target these markets.

Possible buyers for such a product may include:

1. Further meat processors located in Ontario including:
   - Maple Leaf Foods
   - Schneiders Foods (a Maple Leaf Company)
   - McCain Foods
   - Sun Valley Foods (formerly Caravelle Foods) (a Cargill Company)
   - Cardinal Meat Specialists
   - ConAgra Foods
   - Morrison Lamothe
   - Watson Foods (a Better Beef Company)
   - Belmont Meat Products Ltd. (patties, etc.)
   - W.T. Lynch Foods (Lynch Foods) (sauces, mincemeats)
   - Patty King (Jamaican Patties)

2. Soy and vegetarian food and/or meat analogue producers including:
   - Meatless Gourmet
   - Yves Veggie Cuisine (a Haines Celestail Company)
   - Intercity Packers Limited (veggie burgers)

Opportunity and Challenge

Currently, nearly all TSP is produced in the USA by large agri-food companies. It is made from commodity, genetically modified (GM) soybeans. Tapping into this market will be a challenge due to the ability of the current producers to have: low costs of production; established customer bases and market share; established distribution networks; provisions of buyer services; and production experience.

However, there may be an opportunity to offer the market a TSP product that is:

1. unique – not made from commodity beans
2. priced lower – due to distribution savings of domestic production

Strategy

In order to produce and market TSP successfully in Canada the following strategic ideas deserve additional thought:

1. Position TSP sales as an **ingredient** in the food manufacturing industry.
2. Offer a **lower priced** product to those currently available from processors
3. Offer **unique** attributes from what is currently available
4. Focus **marketing** efforts on:
   a. North American markets in the Golden Horseshoe or Eastern Seaboard due to distribution advantages.

b. European export markets due to the offering of non-GM products.

Note:

This paper is for discussion purposes and feedback is welcome.

For additional information please contact Soy 20/20.