

GOING NUTTY?

“AN INVESTIGATION INTO THE FEASIBILITY AND PROFITABILITY OF GROWING NUT TREES ON OUR SMALL LAND HOLDING.”



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EXECUTIVE SUMMARY

The following report researches the feasibility and profitability of growing Hazelnuts on our property in Canterbury and outlines these findings in a business plan.

Sharon and I own 15ha of heavy clay soils on Miaraki Downs in North Canterbury that can be prone to drainage problems in winter but it does retain soil moisture into the summer months. The Hazelnut tree would be well suited to 5 hectares of our higher ground and would require little, if any irrigation. From an agronomy point of view our property is well suited to meet the requirements of growing Hazelnuts, with the main additional requirement being further shelter belts to protect the establishing crop trees and future nut production.

Hazelnuts are a versatile product with a number of end uses with the most common in the snack food and confectionery areas. Nuts in general are regarded as a health food with high energy levels. While a high percentage of fat at 61% sounds alarming, 75% of this fat is in the form of a monounsaturated fatty acid which is extremely good for you. Nuts are considered by nutritionists as a good means of reducing bad cholesterol, a great source of Vitamin E and are high in antioxidants.

New Zealand imports about 200 tones of Hazelnuts annually, mostly from the worlds largest producer Turkey, so the outlook for local production to replace the imported product looks good. The local product is generally of a better quality and also fresher than its imported competitor. There has been 400ha of Hazelnuts planted in New Zealand, much of this is still to come into production and most of yet to reach maturity. Once these plantings come into full production there will be an annual harvest of approximately 240ton making New Zealand self sufficient. It is however, interesting to note that the Turkish product is being landed on the NZ market for less than half the price of the local product.

On the world stage Hazelnut production and plantings have surged and currently there is 600,000 ton of Hazelnut kernel in the world supply chain with an annual demand of 400,000ton. With 5000ha of plantings due to come into production from Chile alone, mostly in the form of joint ventures with USA growers, the balance of supply and demand looks set to be unfavorable unless markets are grown or new markets found. The Asian market is growing fast, being largely filled by the USA and also the market in India is growing rapidly from a small base, however the Almond is a major competitor and is priced 30% below that of Hazelnuts.

There would be a start up capital requirement of \$90,000 to develop the 5 hectares into a Hazelnut orchard and purchase the required plant and machinery. On top of this there would be a requirement of between \$10,000 and \$12,000 per annum to make up the shortfall in operating costs over the first seven years, being a total working capital requirement of \$82,000. At current prices an orchard of 5 hectares would take 9 years to return a positive cash operating result and take 20 years to pay off the accumulated losses.

After my research into Hazelnuts and completing a risk analysis in the form of a SWOT analysis as part of a business plan it has become evident, that in my opinion it would not be a wise business decision to establish a Hazelnut orchard on our property. We will continue to explore other options.

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INTRODUCTION

Purpose of the Study

The purpose of this study is to ascertain, firstly whether growing nut trees is a viable option on our small land holding and secondly whether it would be a wise business decision.

Hazelnuts

I was interested in investigating the suitability of Walnuts, Chestnuts and Hazelnuts. Very early on in my research it became evident that the only real option for us and our current resources was the Hazelnut with our heavy soils. The Walnuts and Chestnuts require free draining soils and are not tolerant of wet soils. Whereas the Hazelnut prefer a soil with good soil moisture holding capacity and are more tolerant of too much rather than too little water. It also appears the Hazelnut are generally a more hardy and tolerant tree than the Walnut and Chestnut, so Hazelnuts it is to be researched.

Research carried out

I have broken my research down with the objective to, answering two Questions:

- 1) Could we grow Hazelnuts on our block of land?
- 2) If we could, would it be a wise business decision to do so?

To answer these questions, I researched the agronomy of the Hazelnut tree, its requirements and compared these to our own available resources to ascertain whether they were compatible. Upon getting an affirmative response from this research I moved on to completing a business plan to ascertain whether or not it was in fact going to be a viable business for us.

In completing this research I interviewed and visited four different growers, the manager of the Hazelnut Company and their processing plant as well as a new independent processing plant.



AGRONOMY ASPECTS AND REQUIREMENTS OF HAZELNUTS

To be able to ascertain the suitability of growing Hazelnuts on our property, it is firstly important to have an understanding of the agronomy aspects and requirements of the Hazelnut tree.

Climate and the Plant.

Hazelnuts are generally frost-hardy to around -14°C , although the flowers and catkins can be vulnerable to frosts of -8°C or lower for a short period in early winter. The trees can also suffer from overheating and sunburn in hot summer weather, so shelter is required. Dry autumn weather makes harvesting easier and harvest date more flexible. Different cultivars flower at different times so our choice of crop trees and particularly pollinisers, will require some research to choose the right varieties for our location. The Hazelnut tree has a problem with producing lots of suckers which must be removed and this is a time consuming chore which must be kept on top of. The breeding of new cultivars has not corrected this undesirable trait of suckering yet.

Soil.

Hazelnuts tolerate a wide range of soils, but for optimal production you need a relatively fertile soil which holds moisture but does not become waterlogged. You should have at least 30 cm of topsoil (ideally 60 cm) which is rich in organic matter. Hazelnuts are more tolerant of too much water, rather than too little, so stony or sandy soils present a real challenge in maintaining an adequate soil moisture level in summer.

Extremely heavy clay soils also present a challenge. If there is a clay pan (or a ploughing pan from previous use) you should rip to allow moisture to drain properly. We would need to consider the nature of our soil in relation to the local climate and rainfall levels – hazelnuts can thrive on both clay soils and light soils, provided their water needs are met (via rainfall and/or irrigation).

A soil nutrient test should be done to ascertain the required input of fertiliser. An excess or deficiency of particular elements can harm the trees, and although you can use fertiliser it is difficult to fight the underlying nature of the soil. Soil should be neutral to slightly acid (pH 6).

Shelter

Hazelnuts are easily damaged by strong winds, so good shelter is essential especially in windy areas such as Canterbury and the Wairarapa. It can be a good idea to plant the shelter first and allow it to become well established before planting the Hazelnut's two or three years later. If you choose not to wait, your trees may suffer from strong winds which may slow their growth as they are struggling to survive in the elements. This may cause trees to be weaker overall and more vulnerable to pests and diseases, branches may break and make pruning more difficult later. However, planting the Hazelnuts at the same time as the shelter may allow cropping one or two years earlier than waiting.

Shelterbelt design is an important part of planning a new orchard and the maximum block size will depend in a large part on what shelter species are chosen and the lay out of the land. Poplars and Alders make good shelterbelts as they are fast growing deciduous species that will grow to 15~30 meters tall. Different varieties of each species have different growing habits and requirements, and some varieties may be susceptible to diseases under certain conditions. Talking with a local tree nursery that has experience in shelter design in our area has been of benefit.

Pest and Diseases

There are not many issues with pest and diseases in New Zealand at this stage. Big Bud Mite is present in a few orchards but mostly at small infestation levels. Big Bud Mite is a mite that reduces the amount of productive growth on a tree and hence crop yields from that tree. Some cultivars show more resistance to Big Bud Mite than others. Small infestations can be controlled by removing affecting buds and destroying these.

Rabbits and Hares can damage trees during establishment and need to be controlled.

Bacterial Blight can affect young trees while establishment and appears to be worse if trees are under stress from wind or lack of water. Blight can normally be controlled by spraying with copper in the spring and autumn.

The Eastern Filbert Blight and the Filbert worm have destroyed many orchards in the USA and while not believed to be present in NZ, the detection of the Filbert worm is extremely difficult and the ability for our bio security system to keep them out is questionable. There has been a new variety (Jefferson) of Hazelnut recently released in Oregon that is resistant to these species and also shows good resistance to Big Bud Mite.

OUR AVAILABLE RESOURCES AND SUITABILITY.

Land:

Sharon and I currently own 15ha of undulating and flat ground on the Miaraki Downs in North Canterbury, 11kms south west of Rangiora.

Soils:

Our soils are known as Miaraki Clay Loams which are a Pallic soil type. They are heavy soils with very good water holding capacity, but can be prone to water logging during the winter months. We have a depth of top soil of between 450mm to 600mm, followed by 5 meters of clay then into gravels. Our soil tests indicate a soil PH of 5.9 to 6.2 and Olsen P levels in the 35 to 40 range. Potassium levels are very good and Sulphur levels, while not naturally high, good inputs over the years have these at good levels also.

I am confident we would have at least 5 hectares on the top terrace that would be free draining enough to grow Hazelnuts successfully. This area would be ripped prior to planting relieving any issue from water logging. Our heavy soils will certainly reduce the need or reliance of irrigation. Many I have talked believe we would probably not need irrigation. Although in a dry year we may end up with a percentage of blanks (Hazelnuts where the kernel does not form).

Climate:

We have a typical Canterbury climate with an annual rainfall of 760mm (NIWA), subject to Nor west winds in the early spring but the cooling Nor Easterly wind being the dominant wind through the spring to autumn period. Typically drier summers prevail.

Climate wise we are well suited to growing Hazelnuts, with our typically dry autumn aiding harvest, and our winters not cold enough to cause any problems. Our dry summers may dictate the need for some irrigation especially through establishment, but this should be minimal with our heavy soils. I sourced our climate information from a local NIWA weather site.

Shelter:

While the land is well sheltered from a livestock farmer's point of view, further shelter would be required from the North West direction and of a more suitable shelter species like the Alder with a tap root, which reduces competition with the crop trees. Poplars would also be a good choice of shelter tree with there fast growing habits and from what I have seen around Canterbury are probably a more reliable source of providing shelter. Our current shelter would be sufficient to allow us to start planting and could be taken out when the new shelter belts are established.

Labour:

With my partner Sharon having green fingers and being particularly interested in horticulture she will have some real strengths and interest in growing nut trees. I have had previous experience in managing a large commercial Black Currant operation and once I have grasped the agronomy aspects of growing Hazelnuts I feel confident we could grow good quality Hazelnuts.

However with both of us working full time we would be relying on local labour to do a lot of the 'donkey work' over the establishment phase. There is an ample supply of labour available to us in our local community.

THE ANSWER:

YES WE COULD GROW HAZELNUTS!!!

THE QUESTION:

WOULD IT BE A GOOD BUSINESS DECISION???



BUSINESS PLAN

The Product – The Hazelnut.

Hazelnuts originated from around the coast of the Black Sea where they used to grow wild and still do so today. Although this area has many Hazelnut orchards today and they play an important part in the Turkish economy, it is interesting to note the orchards are mainly situated on soils and sites unsuitable for growing other crops.

The majority of Hazelnuts planted in New Zealand are of the Whiteheart variety. The Whiteheart can be a difficult tree but does have a high quality kernel, although smaller than some other varieties. On average hazelnuts contain approximately 61% fat so they contain a lot of energy. While 61% fat starts alarm bells ringing, it is important to note, 75% of the fatty acids in the oil are made up of oleic acid (a monounsaturated fatty acid) and this fatty acid is extremely good for you. It is interesting to note that most nutritionists are encouraging people to eat more nuts, as they contain a lot of other nutrients that are important in a healthy diet. They rapidly reduce levels of bad cholesterol and recent research is indicating that they may also be useful in preventing diabetes. Hazelnuts are an excellent source of vitamin e and are one of the highest natural sources of antioxidants.

While most nuts are used in New Zealand in the confectionary trade, they are a versatile product and are becoming more commonly used in the snack food industry. They appear in the snack food industry solely as a nut or in a mix with other nuts. Hazelnuts can be used as a ground meal producing a gluten free flour substitute or as Dukkah. They can also be processed into oils for flavoring or salads etc. So Hazelnuts are a versatile product and looked upon as a healthy product.

Examination of new plantings and old stands indicate that the best sites have growth rates as good as in the main hazelnut producing areas overseas. Compared to dairying or intensive livestock production, hazelnut growing has lower total water use, no effluent disposal costs and lower energy input costs. Hazelnuts have an advantage of storing very well in the nut form as long as they are kept dry and safe from rodents. The Hazelnut is also a crop that could well be grown as an organic crop.

Many of the Hazelnut growers have got themselves organized and have set up a limited liability company, which has 100 member shareholders, to process and market their produce called "The Hazelnut Company" which owns the brand "Hazelz NZ". The growers have also formed a group called "The Hazelnut Growers Association" which is a group of growers that share ideas and issues around growing Hazelnuts and is a very open and supportive group. This group's willingness to share ideas and help one another is refreshing and they need to be congratulated for the openness and support of one another. The group also exists to help the industry of Hazelnuts grow and began in the 1980's under the umbrella of the "Tree Crops of NZ.

Processing:

The Hazelnut needs to be processed in most cases to be sold. This involves cracking the nut and removing the kernel. The kernel is then sold as what is known in the industry as raw nut. This process has to take place in a registered commercial kitchen, with many nuts being roasted or semi roasted. The Hazelnut company processes and markets approx 70% of New Zealand's production. The Hazelnut Company's processing plant obtains yields of kernel at about 40% of the total weight of the Hazelnut. If you were to crack the nut with a hammer and hand sort, the yield would be approx 48%. With some fine tuning the manager of the company believes that yields may be able to be lifted to 45% through the processing, which would be a very good result. There is also a grower who is developing an independent cracking and processing plant, offering the grower who wants to process and market there own nuts the ability to do so.

The Market

To date there has been approx 400ha of Hazelnuts planted in New Zealand and when these reach full production the annual production will be about 240 tones of kernel. Currently NZ imports about 95% of its Hazelnut requirements. Around 200 tones is imported annually, mostly from Turkey, which are of varying quality and freshness, so therefore there are good prospects for import replacement in the local market.

However the imported Turkish kernels are currently being landed in New Zealand for about \$10 per kg while the local product is returning \$21.90. While the local kernel is of a much superior quality, the fact is the Turkish kernel is half the price and in many instances the nut is being covered with chocolate so the quality of the kernel is of less importance.

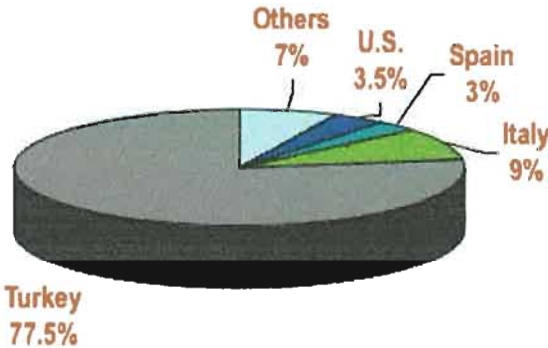
Currently the Hazelnut Company is purchasing nuts on a total weight bases at \$4/kg, which equates to \$10/kg of kernel. The company expects to process 22 ton of nuts this year, with this tonnage expected to grow as orchards mature and new plantings come into production. With four to five people working in the processing plant approx 200kg per hour can be processed, so there is plenty of capacity to process the increasing supply. The price last season (2008) in the USA was \$2.52/kg (NZ\$).

International Market.

While researching the international supply and demand of Hazelnuts, I found that most growers had no idea of what was happening internationally. I found it quite alarming that many growers had made business decisions based solely on what they knew about the local market and without having any understanding what so ever of the international situation.

Turkey produces over 75% of the world production and last year produced 900,000 ton (whole nuts) with Italy being the second biggest producer with an annual crop of 120,000 ton.

Hazelnut Producing Countries



2005 Crop

Hazelnut Production Around the World

COUNTRY	2006 / 2007				2007 / 2008			
	BEGINNING STOCK	CROP	TOTAL SUPPLY	ENDING STOCK	BEGINNING STOCK	CROP	TOTAL SUPPLY	ENDING STOCK
Turkey	40.000	387.500	427.500	136.500	136.500	275.000	411.500	111.500
Italy	0	65.000	65.000	5.000	5.000	51.000	56.000	3.000
USA	258	15.292	15.540	200	200	11.500	11.700	200
Spain	0	14.000	14.000	0	0	12.500	12.500	500
Other	0	22.500	22.500	0	0	26.000	26.000	0
TOTAL	40.258	504.292	544.540	141.700	141.700	376.000	517.700	115.200
WORLD CONSUMPTION (TOTAL SUPPLY - ENDING STOCK)				402.840	402.500			

Metric Tons: Kernel

** Azerbaijan, Georgia, Greece, France, Russia ...

Updated 11/07

While the above graphs demonstrate the dominance of Turkey in the production of Hazelnuts, there have been some developments in the market over the last two years that need to be considered. Last year the Turkey government held back 300,000 of nuts from the market and is expected to do the same this year (120,000 ton of Kernel). These nuts will have to hit the market at some stage as storage runs out. There is believed to be 600,000 ton of kernel in the world supply chain at present, with the world demand being 400,000 ton. This has to be of concern, especially when you factor in the amount of new plantings coming into production over the next few years.

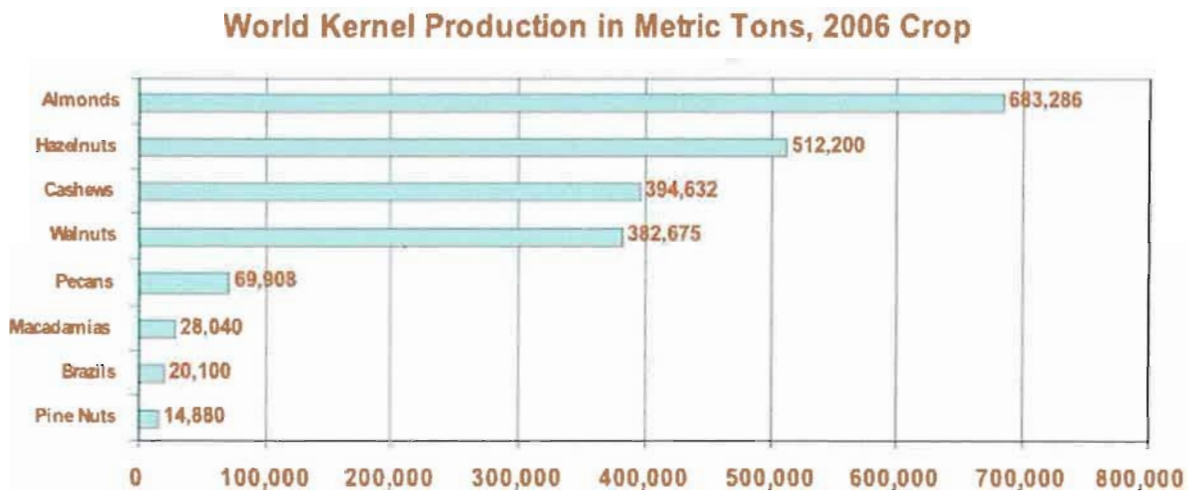
The Asian market along with its economy is growing fast. The product that is preferred in China at this stage is a semi cracked roasted nut, which is eaten like a pistachios nut during Chinese New Year celebrations. The Whiteheart nut is too small for this market and the preferred variety is the Barcelona and Ennis which are widely grown in Oregon and starting to be grown in Marlborough. The Jefferson variety, while only recently released could well fit this market also. It should also be noted that there are some joint venture type arrangements being done between USA and Chilean farmers to fill the Asian market. Chile has 5,000ha of plantings due to come into production over the next year or two; this area has the potential to produce 9000 ton of nut or 4000 ton of kernel.

The Indian market is also growing very fast, but the Almond is selling for 30% less in India and looms as a threat to the Hazelnut in this market.

While the outlook for New Zealand growers in the medium term is good from an import replacement point, New Zealand growers must continue to produce a quality product as it will never be able to compete on price, with the major producers.

World Nut Production

Hazelnuts Among the Largest Tree Nut Crops



Source: International Nut and Dried Fruit Council, 2006 Crop

While we can see Hazelnuts make a large proportion of nuts produced around the world, the Almond is the largest produced nut and it is the Almond which competes with the Hazelnut for many markets and the Almonds have the advantage of being cheaper in most markets.

Orchard Layout.

While this obviously depends on the shape and contour of your piece of land and the requirements for shelter, in our case it is quite straight forward. Our design allows for 10 blocks of equal size, 70meters by 70 meters. Finalizing the design was a necessary step to allow for an accurate development costing to be done, which has been summarized in the table below.

Capital Requirement

CAPITAL SET UP COSTS

ITEM	Description	units	\$/unit	Total
Land	Already owned but opportunity cost	5	25000	\$ 125,000.00
Shelter	1750 meters of shelter, planting at 1 meter	1750	5	\$ 8,750.00
Hazelnuts Trees	Main crop trees	2,700	9	\$ 24,300.00
	Pollinators	270	23	\$ 6,210.00
	Planting trees	4720	2	\$ 9,440.00
Irrigation	Heavy soil, treating as not needing irrigation			\$ -
Orchard floor preparation	Ripping for trees	5	500	\$ 2,500.00
	lime 2.5 ton per ha (applied cost)	12.5	50	\$ 625.00
	Glyphosate 2 x 4lt/ha	40	12	\$ 480.00
	Application of Chemical	5	35	\$ 175.00
	Service work to level and roll	5	180	\$ 900.00
	Sowing grass	5	100	\$ 500.00
	Grass Seed	5	180	\$ 900.00
Plant	Tractor	1	20,000	\$ 20,000.00
	Mower	1	8500	\$ 8,500.00
	Sprayer	1	2500	\$ 2,500.00
Total				\$ 210,780.00

There would be a requirement to purchase or make some other arrangement for harvesting the Hazelnuts from year seven onwards, but at this stage technology and opportunities will change dramatically so this has been left unbudgeted for.

Labour Input Required.

Another area I wanted to know was how much work was going to be required in setting up and maintaining an orchard of 5 hectares.

Initial set up.

There are a lot of variables here, but with our case and no irrigation being installed the initial set up time will be reduced. With marking out and planting of both shelter and crop trees being the most time consuming events. I have allowed for the preparation of the orchard floor to be done by contractors with the specialist equipment needed to get the job done quickly. I have also allowed for the trees to be planted using extra labour and this is included in the costs above. To mark out and design I have estimated our labour requirement to be 16 hours per hectare. At \$25 per hour this adds \$400/ha to the establishment.

Annual Requirements After Establishment.

Task	Hours	hours
Mowing	From September until end of January 8 mowings at 1ha/ hour x 5ha	40
Sucker control	Chemical cotrol with handgun on tractor unit 2 hours per ha	10
Pruning	2.5 minutes per tree, $600 \times 2.5 = 1500$ mins 25 hours per ha x 5, this will double at maturity.	125
Disease Control	Copper sprays 1hr/ ha	5
Weed Cotrol	Allow 1.5hrs/ ha	7.5
Harvesting	Very much depends on method used, but once in full production would have to be mechanical I have been told to allow 4 man days per ton	160
Total		347.5

Comments:

The amount of time spent will vary enormously with little time required in the first few years on pruning. But as the orchard matures double the time will need to be allocated to meet the increased pruning requirement. Mowing time may reduce if sheep were introduced to control the spring grass growth.

If labour was required to do the above work at \$25 per hour, this would add \$8687 per annum to the running costs of the operation. It should also be noted that this would be an opportunity cost on your time and the hourly rate maybe a great deal higher.



THE BUDGET

Financial: Cash Flow Budget from Year 1 to Year 12.

Operating Budget for 12 years

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
INCOME													
Harvests	kg/tree					0.1	0.25	0.6	1.2	2	2.2	2.3	2.3
	kg/ha	600				60	150	360	720	1200	1320	1380	1380
	Total	4.9				294	735	1764	3528	5880	6468	6762	6762
Price/kg	\$3					\$862	\$2,205	\$5,292	\$10,584	\$17,640	\$19,404	\$20,286	\$20,286
	\$4					\$1,176	\$2,940	\$7,056	\$14,112	\$23,520	\$25,872	\$27,048	\$27,048
	\$6					\$1,764	\$4,410	\$10,584	\$21,168	\$36,288	\$38,808	\$40,572	\$40,572
Expenditure													
Cost of Capital	100,000	8%	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000
irrigation	40	\$40	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Fertiliser	1.25	450	562.5	562.5	562.5	562.5	562.5	562.5	750	750	750	750	750
Disease Control			85	85	85	85	125	125	125	125	125	125	125
Weed Control			200	200	200	200	200	200	200	200	200	200	200
Pestling			0	0	1250	1250	3125	3125	3125	3125	6250	6250	6250
Birds control				200	200	200	200	200	200	200	200	200	200
Harvesting							1000	2000	4000	4000	5000	5000	5000
Total			\$ 10,447.50	\$ 10,647.50	\$ 11,897.50	\$ 11,897.50	\$ 13,772.50	\$ 14,812.50	\$ 15,812.50	\$ 18,000.00	\$ 18,000.00	\$ 22,125.00	\$ 22,125.00
Profit/loss	\$4		-\$ 10,447.50	-\$ 10,647.50	-\$ 11,897.50	-\$ 11,897.50	-\$ 12,596.50	-\$ 11,872.50	-\$ 8,756.50	-\$ 3,888.00	\$ 5,520.00	\$ 3,747.00	\$ 4,923.00
Accumulative				\$ 21,095.00	\$ 32,992.50	-\$ 44,890.00	-\$ 57,486.50	-\$ 69,358.00	-\$ 78,115.50	-\$ 82,003.50	-\$ 76,483.50	-\$ 72,736.50	-\$ 67,813.50

SENSITIVITY ANALYSIS		\$3	-\$ 10,447.50	-\$ 10,647.50	-\$ 11,897.50	-\$ 11,897.50	-\$ 12,890.50	-\$ 12,607.50	-\$ 10,520.50	-\$ 7,416.00	-\$ 360.00	-\$ 2,721.00	-\$ 1,839.00	-\$ 1,839.00
				-\$ 21,095.00	-\$ 32,992.50	-\$ 44,890.00	-\$ 57,780.50	-\$ 70,388.00	-\$ 80,908.50	-\$ 88,324.50	-\$ 88,684.50	-\$ 91,405.50	-\$ 93,244.50	-\$ 95,083.50
			-\$ 10,447.50	-\$ 10,647.50	-\$ 11,897.50	-\$ 11,897.50	-\$ 12,008.50	-\$ 10,402.50	-\$ 5,228.50	-\$ 3,168.00	-\$ 17,280.00	-\$ 16,683.00	-\$ 18,447.00	-\$ 18,447.00
				-\$ 21,095.00	-\$ 32,992.50	-\$ 44,890.00	-\$ 56,886.50	-\$ 67,301.00	-\$ 72,529.50	-\$ 69,361.50	-\$ 52,081.50	-\$ 35,388.50	-\$ 16,951.50	-\$ 1,495.50

Comments

After talking to a number of growers it was believed that around 2kg/tree or slightly better would be a realistic yield to budget on more so than the 3 kg/tree that I have read in many publications. At the current price of \$4 per kg the orchard would start to pay its way by year nine, but take in excess of twenty years to pay of the accumulative losses without taking the tax advantages into consideration.

However if \$6/kg was achievable a profit would be achieved in year7 and the accumulative losses dealt to by year 12. If the price was to slip to \$3/kg the orchard would run at a loss.

Risk Analysis

I have completed a SWOT analysis as my risk assessment from both a Hazelnut industry and our own resource's point of view. The strength and weakness section will focus on the **internal** environment (product and our available resources), while the opportunities and threats section will focus on the **external** environment (markets and competitors etc).

Strengths

- All nuts including Hazelnuts viewed as a health food and being good for you.
- Local market unfilled and imported product filling the balance of demand.
- Environmentally friendly crop, low energy usage.
- Crops stores well in the nut form.
- Would suit our soils and climate well.
- Low labour inputs once planted in the first five years.
- Versatile product, oils, Salad dressings, chocolate, cooking ingredient, Dukkah.
- Local product is of a higher quality and fresher than imported product.
- Supportive local producers very keen to share ideas and learn together.

Weaknesses

- 400ha has been planted with a large percentage of this, still to come into production. Has the potential to more than supply the shortfall made up by imported product.
- Turkish imported product is cheap, approx half the price of the local product.
- Extra shelter required from North West winds.
- Prospect of a lack of soil moisture in very dry years, resulting in a reduce yield.
- Lag time to get into full production, approx 10 to 12 years.
- Cash flow – lack of monthly income.
- Most growers are very small scale. (Hobby industry).
- Yields according to growers are somewhat less than what is published in most literature. 2kg/tree more realistic.
- Research still being done on the correct or best suited pollinisers for New Zealand conditions.

Opportunities

- Growing world population that will require feeding, leading to an increased demand.
- Lucrative Asian market that is expanding.
- India's demand also growing fast.
- Turkish imports are of lower quality and not as fresh as the local produce.
- Local product selling for a premium over imported nuts.
- Could be grown organically.
- New varieties, disease resistant, have increased yields and suit the Chinese market.

Threats

- Competing with all other nuts and Almond's are a lot cheaper.
- Hazelnut production worldwide has surged.
- Big areas have been planted around the world that is still to come into production.
- Turkish government held back 300,000 tonnes of production last year and will probably do the same this year which will need to hit the market as storage facilities are becoming full.
- Bio Security and the ability to keep out the Filbertworm and Eastern Filbert Blight, both very hard to detect and may already be present in NZ.
- Currently 600,000 tones of Hazelnut kernel in the world supply chain and annual demand is currently 400,000 ton.

CONCLUSION

To Plant or not to Plant?

There is a lot to like about the Hazelnut industry, with its very supportive and open nature of the growers involved, only too willing to assist and share their knowledge of growing the nut. The Hazelnut is a very healthy product, with the nut containing many good attributes, elements and vitamins that promote and assist in good health. The Hazelnut Company has what appears to be a very good processing facility and the support of the majority of growers. There is also an option to have the crop independently processed, which gives you the opportunity to market your own produce.

The Hazelnut industry in NZ is largely a hobby for many growers and with their livelihood not at stake by the success of the industry and prices received. This could well become a constraint for some growers and the industry going forward.

I believe many of the current growers will be able to find niche markets in the medium term which will improve their returns but this will require some effort and research on their own part, which they may well be well rewarded for.

From a business point of view I find the potential returns not so exciting. With the current price at \$4 per kg the crop is grown at only slightly better than a break even situation. However if \$6/kg could be achieved a profit of \$3500 to \$4000/ha could be achieved, currently on this land under a livestock enterprise it is returning \$1500/ha. With imported Kernel arriving on the New Zealand market at less than half the price being currently received, I see little likelihood of sustainable price rises in the future.

After completing the risk analysis in the form of a SWOT analysis, there are some major threats to this industry. World production and supply, versus world consumption has to be of major concern in the short to medium term. Supply is well and truly out stripping demand at present on the world stage. Add to this the expected increase in supply over the next five years from new plantings and current plantings reaching maturity, I would be extremely nervous if I was to plant Hazelnuts now. From an international point of view NZ will find it extremely difficult to compete and the average NZ grower has no understanding what is happening on the international stage, which I found quite surprising.

I believe the current growers will have a ready local market in the medium term but extracting much more out of the market in the way of price is going to be extremely difficult when the imported product is currently selling for less than half the price of the local product. It is worth remembering that in Turkey the largest producer of Hazelnuts the orchards in this country are largely found on soils and sites deemed unsuitable for other crops, indicating there are more profitable options for the better land.

For us our planting spade will remain in the shed while we explore other options. We will be planting more shelter to give us the option to grow more intensive crops in the future as well to improve the aesthetic and capital value of our property.



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