**Scholarship 2010**

**Agricultural and Horticultural Science**

**Question 1.**

Bio security is the security if bio organisms coming in and out of the country. It is closely linked with marked access as if there is a bio security risk like Painted Apple moth. Market access is directly affected. Market access is the access of product coming in and out of the country.

In comparison Satsuma mandarins don’t have tariffs as there is no reason to protect local growers as they aren’t able to produce mandarins when needed for the domestic market.

A primary production system which is nationally significant is that of Zespri kiwifruit which is affected by two contemporary issues; bio security and market access.

Some growers are using grey trading as a way out of tariffs. This is where if you are sending kiwifruit to China, you send it to Hong Kong first where there are no tariffs and then on to China. However this is not good as it affects traceability. The issue of traceability could be affected negatively for Zespri if there is a deregulation of the industry like their was for the apple industry where prices negatively plummeted. In comparison Satsuma mandarins don’t have this problem as each grower exports on it’s own but is part of the Citrus association.

In 2000 the verroa mite was discovered in the North Island of New Zealand and later in 2006 in the South Island. In New Zealand produce can only come via two ways, by sea or air. In this case the verroa mite came in via a small honey producer who bought a queen bee in, in his pocket. The mite almost destroyed the local industry and negatively impacted on the local industry economy. Similarly the Painted Apple moth which could have potentially cost the local economy between $60 to $350 million. It caused the destruction of local native flora and fauna as well as fruit trees. Between 2002 and 2004, a vigorous spray regime was put in place to rid of the pest. In 2006 after losing $60 million to the economy, the Painted Apple moth was declared eradicated.

These two bio security risks mentioned above have managed to be controlled or eradicated, however some can’t be and are uncontrollable, like the Psyllid problem which forms black and white zebra stripes in potatoes as well as impacting on tomatoes, tamarillos and capsicums.

Similarly Zespri kiwifruit are also affected by bio security risks. Recently the issue of Psa which causes marks on vines and although won’t harm 2011 yield, could harm yields after words as said by Carol Ward, Zespri growers service manager. It was first thought that Psa was able be eradicated. However with over to orchards infected actions have been put in place to contain it rather than eradicate it. Actions include burning of vines, increased hygiene methods and banning of imported pollen. Psa has shown very rapidly what a bio security issue can do. In the case of Psa bio security control by Asine quality (governmental dept of MAF) was poor. It’s believed that the Psa was brought into the country via pollen which was not considered to be a live organism and wasn’t checked properly. This impacts greatly on Zespri kiwifruit in particular growers as they are under immense stress to be able to contain the disease on their orchards and produce high yields in the future. Each growe will pay the price, however the benefit of being part of the Zepsri growers is that economic packages are in place and containment is easier as it’s closely monitored and systems put in place by Zespri.

Psa has affected market access as Australia and US have placed an embargo on any plant material being imported into their countries. Although Australia has only placed a restriction on plant material, it’s said they may use this as an excuse to stop fruit coming in to protect local growers even though Psa does not have any effects on fruit. Main markets like EU (49%), Japan (10-20%) have not placed any restrictions on fruit which is currently positive news for the fruit industry..

Market access is mainly by tariffs is mainly affected by tariffs and quotas to protect local producers.

Zespri kiwifruit growers 9around 4000) were believed to have paid over $100 million in tariffs which are the tax on produce for it to be able to enter the country. Currently New Zealand signs Free Trade Agreements (FTA’s) with countries such as China and Korea to combat tariffs but these are no quick fix. Cirrently Korea has a 45% tariff on Zespri kiwifruit. It is believed that FTAs with Korea will reduce tariffs to 0% for at least 8 years. It’s these tariffs which are negatively impacting on the industry and said to be a reason for some growers not to export product.

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Quotas also affect Zespri kiwifruit but with nongovernmental organisations these are said to be reduced. Along with FTA’s between New Zealand and Chins, etc, it will also help New Zealand growers.

Similarly it’s these quotas which have affected meat and dairy production to the EU and America. This can also be seen in Japan who want to join APEC but need to rectify their tariffs and quotas which have had an impact on New Zealand’s economy for example. There is a 500% tariff on New Zealand dairy products to protect Japanese farmers. Even though the quota is not a big issue, the tariff prevents New Zealand from sending it’s dairy products.

Recently market access was generally affected by the psyllid problem which came in on Queensland tomatoes. Due to serious bio security risk, New Zealand had to place a short embargo on tomatoes so that they could protect local growers. The embargo was lifted in October of this year.

In comparison Mandarins which are a small export market to Japan of 700 tonnes also have bio security risks such As rose weevil which gets into fruit and damages skin creating blemishes. Like the rose weevil thrisps also pose a bio security hazard as they also get into the skin and cause blemishes resulting in fruit being unsaleable as Japan will not accept fruit if it has blemishes . Unlike Psa, Painted Apple moth ot verroa mite, it doesn’t affect market access as New Zealand’s the only country that can produce mandarins during April – May for Japan..

Potentially the bio security risk which is the biggest is that of fruit fly which would destroy market access and New Zealand’s fruit industry.

In conclusion bio security and market access are two contemporary issues which impact immensely on Zespri kiwifruit but also impact on wider production systems as can be seen through the production systems such as mandarins, capsicums, tomatoes and dairy products.

**Question 2.**

A contemporary issue which impacts on the nationally significant export orientated primary production systems which are Zespri kiwifruit and Satsuma mandarins is that of traceability. Of course these two primary production systems are also impacted by contemporary issues such as climate, food miles and food safety.

Traceability is the system by which a product can be traced in horticultural case from orchard to table. It means that from one single barcode on each individual fruit, the consumer can be told the history of the fruit before it got to them, the consumer.

Traceability is vital to the success of a brand like Zespri kiwifruit. It allows Zespri to know the lifecycle of each individual kiwifruit from the orchard to the table. This means they can tell what time it was picked, on what day, which pack house it was packed at, who packed it, what ship it went on, how long it took to get to it’s destination and where it’s destination was. The seamless traceability of Zespri kiwifruit gives a huge advantage over it’s competitors, like Chile, France and China, as they have built a world class traceability system. By having such a sophisticated system it really enhances the Zespri brand as Zepsri can control the quality – true if it is not up to standard (6.2 : 1 green brix level, good 11-13). As well as this consumers feel safe, they know that it’s safe to eat the fruit.

Similarly traceability impacts on the smaller nationally significant production system of Satsuma mandarins. Each year 700 tonnes of mandarins are exported to Japan. Like for Zespri traceability allows growers to trace the mandarin’s lifecycle from one single barcode, this is extremely important for mandarins as is for Zespri kiwifruit as mandarins are perishable – only last 2-3 weeks. This means if there is a pest or disease or the plane is delayed, it can be traced and the box of mandarins/pallet can be identified.

Traceability impacts on Zespri kiwifruit and mandarin growers and they have responded differently in how they manage their production system.

Zespri is a single desk seller and the industry is worth over $700 million to New Zealand’s economy. Growers have reacted extremely positively to the issue of traceability, they see the importance of it, and consumers need the link between where their food comes from, how it’s grown and how it arrived to them. Growers are changing their production systems by filling in extra forms for PtD control, working on research programmes with Zespri and plant and Food Research to trace the lifecycle of the kiwifruit, it’s carbon footprint (food miles). Showing that the fruit is safe to eat like Hort 16. A gold variety as its natural and GM free. In comparison to Zespri kiwifruit, Satsuma mandarins traceability is important but easier to manage in one sense because of small market only to Japan, where as Zespri kiwifruit is different with it’s main market being the EU (49%).

The issue of traceability could be affected negatively for Zespri if there is a deregulation of the industry like their way had an impact on New Zealand’s economy for example, there is a 500% tariff on New Zealand dairy products to protect Japanese farmers. Even though the quota is not a big issue the tariff prevents New Zealand from sending it’s dairy products.

Traceability has many implications on Zespri kiwifruit. It allows for seamless traceability of fruit but Zespri knows that traceability is demanded by overseas markets. Zespri’s main buyer such as Tescos, Walmart, Carrefour, Sainsburys, Casino, etc, all want to be able to trace back any product on any of their shelves. It’s a requirement. The implications for the processors (Zepsri) and the marketers Zespri) are huge and very positive. Guaranteeing traceability of a product means that Zespri can prove food miles of product (another contemporary issue which is very currently prominent). Safety of food, Safe for consumers to eat (GM free, natural), etc. As well as this by tracing these different aspects, it means that Zepsri can also market Zespri kiwifruit as being clean and environmentally friendly. This means that they are able to attain much higher premium prices than their competitors such as Chile, China and France, as well as attain premium shelf space. As a primary production system it has responded adequately.

Of course traceability also has implications for the consumer. At present around the world consumers like the idea of tangible traceability. For example Kettle crisp have recently done this where they label that each packet of crisps was made by a different person, e.g.’ Batch 905 were made by resident crisp worker Billy’. Similarly Fonterra have recently put out a campaign showing the milkman ‘John’ and his daily routine. Campaigns/ideas like these allow consumers to trace their packet of crisps from origin to consumer. As well as this within the issue of traceability comes the issue of tracing food miles and safety of food. Zespri have responded by creating a diagram which was made in 2007 by Zespri showing the lifecycle of the kiwifruit and the carbon footprint it had (food miles). This is particularly prominent, this form of traceability for consumers in Europe whereby like most they like to be green but are not always willing to pay the price if they can’t trace the product, see that it’s good for them, fruit is safe to eat and GM free. In particular this is where Zespri

In conclusion the contemporary issue of traceability affects two very contesting nationally significant primary production export orientated systems that of Zespri kiwifruit where by traceability is seamless and vital to the success of the kiwifruit industry of which growers are responding positively. As well as the positive implications of responses from consumers, marketers and processors compared with a smaller primary production system of Satsuma mandarins which is also affected by traceability but is easier to control due to smaller export market – Japan.

Biosecurity and market access

The issues of biosecurity and market access are intrinsically linked: they both affect how the other works in countries all over the world. Biosecurity is the monitoring of pests and diseases with the aim to stop them coming in or going out of a country while market access is the ability to get a product into a market. Market access can be blocked for biosecurity or perceived biosecurity reasons. Therefore, for continued market access, it is essential that a country has good biosecurity. Kiwifruit is a highly significant national primary product. 80% of the world’s kiwifruit is grown in New Zealand and is exported under the ‘single-disk’ seller, Zespri. As the export of kiwifruit is a billion-dollar industry, it is vital that market access is maintained. This means New Zealand (NZ) and Zespri must be stringent with their biosecurity controls.

Many think that biosecurity is simply being siffed by beagle dogs when they get back from a holiday. In reality, biosecurity is the strict nmonitoring of what comes in and what goes out of the country. New Zealand has the advantage of ‘splendid isolation’: it is an island, so any pests or diseases that could threaten its large agriculture anhd horticulture industry must come in through an airport or sea port. This makes managing biosecurity easier for MAF the government ministry that deals with biosecurity and Assure Quality, the commercial company 100% owned by the NZ government tht is the ‘operation arm’ of MAF.

Examples of biosecurity working and not working are plentiful. The greatest fear for NZ growers is Australian fruitfly which, if it got into NZ, could cause $80 million worth of damage in the Bay of Plenty area alone in the first year. In April 2010, a shipment of Australian tomatoes was found to be infested with fruitfly and as a result Australian tomatoes were embargoed, temporarily banned from NZ until it could be proven they were fruitfly free. Another example of biosecurity successfully working is the eradication of Painted Apple Moth (PAM) in 2007. First discovered in 1999 in West Auckland, PAM has the potential to devastate the horticulture industry as it causes defliation in fruit trees. After a spraying programme in 006-07, PAM was declared eradicated in 2008. However, an example of a failure of NZ’s biosecurity is the introduction of the Varroa Bee Mite, which weakens or kills hives. Brought to NZ in someone’s pocket in 2000, it has spread throughout NZ and could severely damage not only the apiary industry, but the horticultural industry as well, as bees are needed for pollination.

Another very recent failure of biosecurity has led to the discovery of the PSA bacterium on kiwifruit vines in Te Puke. PSA causes weeping lesions on the vines and blotches on the leaves, and can kill the vine. However, it does not effect the fruit. It is now thought that the PSA came on pollen imported from China. This pollen was not checked by MAF or Zespri for biosecurity hazards. The bacterium was then spread, most likely by un-sterilised pruning equipment. Growers may have to burn their crops and sterilise their soil, which is hugely expensive. The NZ government is discussing compensation packages for these growers but as kiwifruit is a billion dollar industry in NZ, this could have far-reaching impacts on the entire NZ economy. PSA could also affect market access for NZ kiwifruit: currently, countries like the USA, Japan, Chile and Australia have embargoed kiwifruit plant matte from NZ, but not the fruit themselves. There is a fear that Australia will use PSA as an excuse to ban NZ kiwifruit, as they did with NZ apples for over 99 years. However, the situation could have been a lot worse: the single-dish seller system has proved vital in putting containment measures in place and assessing the situation. If it had been up to each individual grower, PSA could have reached more parts of NZ than just Te Puke.

Pest incursions, the failure of biosecruity, can affect NZ’s access into markets. Since NZ gets a huge amount of it’s GTDP from exporting horticultural and agricultural produce, it is vital for the economy that market access, especially to key markets like south-east Asia and Europe is kept open. Biosecurity can be used by countries as an excuse to ban other nations’ exports in order to protect their own growers and local economy. For example, for 99 years Australia banned NZ apples due ot the perceived biosecurity threat of fire blight. Howeve,r market access would not be affected to countries that already have that pest or disease. For example, if NZ was to get a mass infestation of potato psyllid, it could still export its potatoes to Northern Mexico, the USA and Southern Canada, as they already have potato psyllid in their country.

However, biosecurity cannot be used as an excuse not to import all NZ products. Mandarins, for example, are very reiliant due to their thick skins and their main pests, antracnose and rose weevils, are easily dealt with. This means that other measures are put in place to protect local producers. For example, Japan has a 500% tarrif on NZ dairy products: this means farmers must pay 5x the amount they would earn just to get their milk into Japan. This is thanks to Japan’s small but strong farming lobby. Quotas are another method: the European Union (EU) has placed quotas on NZ dairy and meat, restricting the amount that can come in. Subsidies are also a problem for NZ producers: EU farmers are heavily subsidised if they comply with strict environmental guidelines. This not only means EU farmers can compete with NZ farmers for their ‘clean and green’ image but also that farmers in NZ are at a financial disadvantage, as government subsidies to farmers and growers stopped in NZ in the late 1980s. Even short bans, embargoes, can affect industries.

Currently countries like the USA, Japan and Australia have embargoed NZ kiwifruit plant matter due to the recent PSA outbreak in the Te Puke region. There is a fear Australia will embargo NZ kiwifruit too. Meanwhile tariffs, especially in Asia, affect kiwifruit sales: Korea has a 45% tarrif on NZ kiwifruit, while China has a 20% tarrif on kiwifruit. This has led to grey-trading: some kiwifruit is sent to Hong Kong, which does not have tariffs, so it can then be sent to the Chinese mainland. This is one way of getting past tarrifs, but once the fruit is in Hong Kong, there is no way of guaranteeing it’s quality when it reaches China. Fair Trade Agreements are