

Assessment Schedule – 2013**Agricultural and Horticultural Science: Demonstrate understanding of how market forces affect supply of and demand for New Zealand primary products (91530)****Overall Sufficiency**

| Achievement | Achievement with Merit | Achievement with Excellence |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Demonstrate understanding</i> involves explaining how market forces affect supply and demand for New Zealand primary products. | <i>Demonstrate in-depth understanding</i> involves explaining in detail how market forces affect supply and demand for New Zealand primary products. | <i>Demonstrate comprehensive understanding</i> involves analysing how market forces affect supply and demand for New Zealand primary products. |

Question One: Market forces affecting the supply of primary products**Assessment criteria**

| | |
|----|------------------------------------------------------------------------------------------------------------------------------|
| N0 | No response; no relevant evidence. |
| N1 | ONE market force partially explained. |
| N2 | TWO market forces partially explained with reference to specified product. |
| A3 | ONE market force explained in general terms with reference to specified product. |
| A4 | TWO market forces explained in general terms with reference to specified product. |
| M5 | ONE market force explained in detail, using qualitative and/or quantitative material where appropriate. |
| M6 | TWO market forces explained in detail, using qualitative and/or quantitative material where appropriate. |
| E7 | As for Merit, plus partial justification, using both qualitative and quantitative material where appropriate. |
| E8 | As for Merit, plus full and comprehensive justification, using both qualitative and quantitative material where appropriate. |

| Q1 | Evidence |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) | <p><u>Seasonality</u> Explanation should state how seasonality influences a product's pattern of supply. This could include the impact of weather, the use of biological processes such as mating, or the manipulation of growing conditions. The explanation may state little effect of seasonality in controlled environment production.</p> <p><u>Price trends</u> Explanation discusses price influencing supply over time (3–5 years). Could include either price at the final point of sale, or more likely the manipulation of schedule prices. Actual prices need to be stated.</p> <p><u>Market trends</u> Market trends must relate to an aspect of marketing influencing supply over the last 3–5 years. The trends explained could be price-based, quantities, attributes, consumer preferences, etc. Trends may or may not be highly significant – a stable trend is often the case.</p> <p><u>Political intervention</u> Includes sanitary / phytosanitary regulations, tariffs / quotas, and Resource Management Act restrictions. Candidates are expected to state actual figures to support their answer / explanation.</p> |
| (b) | <p>The justification of one market force over another must provide evidence of the merits of each market force as they impact on the quantity of the product supplied by the producer.</p> |

Question Two: Market forces affecting the demand for primary products

Assessment criteria

| | |
|----|------------------------------------------------------------------------------------------------------------------------------|
| N0 | No response; no relevant evidence. |
| N1 | ONE market force partially explained. |
| N2 | TWO market forces partially explained with reference to specified product. |
| A3 | ONE market force explained in general terms with reference to specified product. |
| A4 | TWO market forces explained in general terms with reference to specified product. |
| M5 | ONE market force explained in detail, using qualitative and/or quantitative material where appropriate. |
| M6 | TWO market forces explained in detail, using qualitative and/or quantitative material where appropriate. |
| E7 | As for Merit, plus partial justification, using both qualitative and quantitative material where appropriate. |
| E8 | As for Merit, plus full and comprehensive justification, using both qualitative and quantitative material where appropriate. |

| Q2 | Evidence |
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| (a) | <p>Product selected must be different to that used for Question One.</p> <p><u>Consumer preference</u> Explanation should state the actual trend(s) in consumer preference that have occurred, how they have differentiated the price received for the product, and link this clearly to the price data.</p> <p><u>Promotion</u> Explanation should include how demand (price or quantity) for the product has been influenced by actual promotional campaigns [campaign must be named, and data on its effect on demand given (more than generalisations of TV advertising)].</p> <p><u>Product attributes (quality requirements)</u> Differentiated from consumer preferences, answers are to include quality requirements of buyers (processors/exporters) and link these to a differentiated price /grading schedule.</p> |
| (b) | <p>The justification of one market force over another must provide evidence of the merits of each market force as they impact on the price New Zealand producers receive for the product, using both qualitative and quantitative material where appropriate. When discussing price, actual prices must be stated.</p> |

Question Three: Impacts of exchange rate movements on supply of and demand for primary products**Assessment criteria**

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|----|------------------------------------------------------------------------------------------------------------------------------------------------|
| N0 | No response; no relevant evidence. |
| N1 | A relationship between the exchange rate and the supply of, <i>OR</i> the demand for, the selected primary product is partially described. |
| N2 | A relationship between the exchange rate and the supply of, <i>OR</i> the demand for, the selected primary product is described. |
| A3 | The effect of the exchange rate on the supply of, <i>OR</i> the demand for, the selected primary product is explained. |
| A4 | The effect of the exchange rate on the supply of, <i>AND</i> the demand for, the selected primary product is explained. |
| M5 | The effect of the exchange rate on the supply of, <i>OR</i> the demand for, the selected primary product is explained in detail. |
| M6 | The effect of the exchange rate on the supply of, <i>AND</i> the demand for, the selected primary product is explained in detail. |
| E7 | The impact and significance of the exchange rate on the supply of, <i>OR</i> the demand for, the selected primary product is discussed. |
| E8 | The impact and significance of the exchange rate on the supply of, <i>AND</i> the demand for, the selected primary product is fully discussed. |

| Q3 | Evidence |
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| | <p><i>Positive impacts of a high NZ dollar</i></p> <ul style="list-style-type: none"> • Cheaper imports. • Can buy more imported stock feed. • Can buy more machinery. • Ability to reduce stress, eg by taking an overseas holiday. <p><i>Negative impacts of a high NZ dollar</i></p> <ul style="list-style-type: none"> • Less income received from exports. • Working hard for reduced returns. • More difficult to sell product overseas, as it is relatively more expensive. <p><i>Effect of a lower NZ dollar on demand for selected product</i></p> <ul style="list-style-type: none"> • Able to sell more product overseas. • Increased returns from overseas, even for the same volume. |

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| | <p><i>Justification of possible decisions made by producer</i></p> <ul style="list-style-type: none"> • Reduce bank overdrafts, so there is less interest payable. • Expand production, by leasing or buying more land, because of the increase in marginal returns. • Mature producers put business up for sale, as it should sell for a higher price, due to increased returns from production. |
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Judgement Statement

| | Not Achieved | Achievement | Achievement with Merit | Achievement with Excellence |
|--------------------|---------------------|--------------------|-------------------------------|------------------------------------|
| Score range | 0 – 7 | 8 – 12 | 13 – 18 | 19 – 24 |

Appendix: Examples of possible answers

Note: Underlined text signifies examples of detail for the award of Merit.

Question One: Market forces affecting the supply of primary products

Seasonality: Wool

Supply of wool peaks in Oct and Feb/March at around 12 000 tonnes/month offered for sale. The lowest months tend to be June/July at around 4 000 tonnes. In October, ewes are shorn as their lambs are weaned off them. Lambs are usually shorn just before Christmas. Ewes are often shorn again in late summer. These two harvesting times for the ewes allow the wool clip to reach the desired 75–100 mm length.

Market trends: Wool

The average farm gate wool price has climbed in recent years from its lowest recorded level – \$3.20/kg for crossbred wool, or just 6.2% of the comparative price prevailing at the peak of the Korean War wool boom – to around \$4.50/kg. The price of crossbreed wool has some influence on supply, as farmers have tended to see wool as a by-product (or even as a cost) of producing sheep meat. Consequently, their focus has changed to specialist meat breeds and ram selection, rather than dual-purpose meat and wool genetics. Wool supply has fallen, and exports dropped to 148 000 tonnes in 2009; this trend has continued over the past four years, as the profitability of wool and sheep farming has continued to fall. The recent upsurge in price has not seen a corresponding increase in supply, due to the low numbers in the national sheep flock, largely resulting from land use changes (mainly dairy conversions).

The high New Zealand dollar was initially a significant contributor to a fall in crossbred wool prices in 2009, with international prices for crossbred wool actually improving compared to the previous year. With the New Zealand dollar strengthening against our major export markets for wool such as America, where the NZ dollar has moved from US\$0.55 to as high as US\$0.87, the returns at the farm gate are reduced, despite the international price increasing. The volume of wool produced has decreased a further 5% in 2009 to 148 000 tonnes as the profitability of wool and sheep farming in general has fallen, and producers of sheep meat convert to more profitable ventures such as dairying, where there are still good profits to be made, even with an unfavourable exchange rate.

Milk

Recent market trends in the price paid to farmers for milk solids have had a greater effect on the supply of milk than either the exchange rate or seasonality.

Farmers are very responsive to farm gate prices. Dairy farmers have a number of options to quickly increase their level of production if the outlook appears favourable. The increase in payout over the past few years (Fonterra's payout in 2010/2011 was \$7.90/kg milk solids) has resulted in large-scale conversions from sheep, beef, and forestry operations over the past decade. The feeling that this trend will either continue or at least stabilise has resulted in the large capital investment required for these conversions. This has been a major factor in determining the supply of milk. Despite the increase in the \$NZ in April 2011, a factor that would normally reduce returns, the rise in price received to \$7.90/kg milk solids has negated the downside of the exchange rate, encouraging more dairy farm conversions/increases in farm cow numbers and higher production volumes. This year, dairying has further rallied, and the expected pay-out in 2013 is \$7.10/kg milk solids.

While the exchange rate can play a large role in determining the payout farmers receive, in recent years, despite a strengthening \$NZ (up to \$0.83 against the \$US in April) the payout received by farmers has remained favourable. They would not be looking at changing their production, as they have committed financially and physically to this product, and any other product produced would need to be exported and would face the same unfavourable exchange rate.

Seasonality also affects milk production to some extent, with a peak in mid-to-late spring and most farmers drying off in winter. However, on an annual basis it is not a significant factor, with most of the production processed into non-perishable/less perishable products, so markets can continue to be supplied. Even the effects of the drought earlier in 2008 were partially offset by an increase in the use of new supplementary feeds, such as palm kernel, and this trend has remained as feeding supplements and dairy grazing have become common practice for farmers to either extend their season or offset drought.

Thus market trends, in terms of the price paid to farmers for milk solids, remain the most significant factor in determining the supply of milk on an annual basis.

Question Two: Market forces affecting the demand for primary products

Consumer preference: Apples

Changing consumer tastes and expectations regarding keeping qualities have resulted in consumers changing their preferred choice of apple varieties in recent years. The emergence of new varieties such as Jazz – with its deep red colour, crisp texture, dense flesh, medium size, and “strong” flavour – have seen consumers shift their demand towards them, and away from previous favourites such as Braeburn and Royal Gala. Quantities sold have increased significantly, and in 2009 just under 20 000 tonnes were sold – up from 7 500 tonnes in 2007.

Promotion: Kiwifruit promotion in Vietnam

Fresh Studio's marketing team, under the guidance of marketing director Mrs Sigrid Wertheim-Heck, has launched an extensive in-store sampling promotional campaign to build awareness of kiwifruit, grow sales, and generate Zespri brand preference. During the 2009 kiwifruit season, the Vietnamese market has increased its sales volume to 212 tonnes – up from 42 tonnes in 2007.

Product attributes (quality requirements): Potatoes

Potatoes for processing need to be large (> 75mm), oval-shaped, and with low sugar content. This allows large French fries to be made (which is a preference of the final consumer). Potatoes meeting these requirements get \$300/tonne. Potatoes more suited for the table/fresh potato market are smaller and more rounded, and fetch 500/tonne.

Absence of PTP (potato tomato psyllid) is another quality requirement of processors, as it infects potatoes with liberbacter, which causes “zebra chip”. Potatoes infected with this cannot be processed, and so are dumped on the fresh market (zebra chip becomes evident with deep frying, not normal cooking), lowering the price of fresh potatoes to ~\$300/tonne.

Price, promotion, and consumer preference: Lamb

Price is the key market force that determines the demand for lamb – both locally and internationally. While promotion and consumer preferences have some effect, they are not as significant as price.

The price of lamb is often towards the top of the range of meat options available to consumers. From \$15–25/kg for chops and up to \$25/kg for a leg for roasting (\$40–\$55 per leg), it represents expensive meat when the fat/bone content is considered. Consumers are very sensitive to the price of meat, and when lamb prices are high (at times of high export lamb prices) there is a noticeable drop-off in lamb meat sales, and consumers switch to alternative meats, eg chicken (skin off breast) ~ \$15/kg. Television promotion by sportswomen has, according to Meat and Wool New Zealand, increased demand for lamb by approximately 5%.

Internationally, consumers have resisted high market prices in the UK, and the traditional Easter market in 2011 saw a decline in the quantity of NZ Lamb sold. What has maintained price is the reduced supply from NZ, due to the declining national lamb kill (~31 million estimated for 2011).

Promotion, such as campaigns like the TV ads featuring the Evers-Swindell sisters, Sarah Ulmer, and Sarah Walker, attempt to target the female/sporty sectors of society and increase demand from those sectors. However, campaigns tend to be neutralised by high prices.

Consumer preference for lamb as a popular barbeque meat – quick and safe to cook (unlike pork and chicken, which must be cooked fully) – remains, and there are still some traditional roasts being sold, especially for the UK Easter market. However, these are often bought as a special once-a-week/month meal, rather than for day-to-day consumption, due to its cost and to its cooking time not fitting into many people's busy schedules. Even so, it can still often have a higher fat/bone content than many other meat options.

Price variations have been shown to produce significant shifts in consumer demand, with high prices for lamb reducing demand, while demand for pork has increased. The promotional activities of Meat and Wool NZ have at best maintained market share in the meat trade, and while a minor 5% increase in NZ consumption is desirable,

it must be remembered that 90% of lamb is exported. To greatly influence demand overall, an increased demand from overseas consumers is vital. Price is the most significant market force in the major export markets, except during times of major animal disease outbreaks, at which time consumer preference has had a significant impact on demand for NZ lamb.

Question Three: Impacts of exchange rate movements on supply of and demand for primary products

Example answer: Lamb

With the exchange rate falling, the price of our exports in other countries will also fall. A rate change of 0.83 to 0.70 USD is a change of about 15%. With lamb racks selling for about US\$53/lb (\$116/kg), a 15% drop in price is significant, and will make lamb much more available to the average family. Demand for New Zealand lamb will increase.

Supply and demand are not independent of each other; if consumers are not willing to buy the product, then the seller will reduce the price until someone starts to buy it, or if there is no demand at all, supply will eventually cease. If demand is high for a product, the seller will either run out of product very quickly, or raise the price until he/she is able to maintain a supply at a higher profit level. The point where demand and supply meet at the same price is called “market equilibrium”.

With a lower exchange rate, the demand for lamb will increase. If we take the USD as an indicator for NZD vs international currencies, demand for NZ lamb would increase with the cheaper prices at the retail outlet. With increased demand, producers would increase their supply of lamb. Currently farmers are getting about \$95 at the farm gate for lamb. If the exchange rate were to move downwards to 0.70 USD, price at the farm gate would rise to \$110 NZD.

Lamb production cannot be increased overnight – in fact, there cannot be a significant increase even within a year. Farmers need time to increase lamb production, as they have only a certain number of ewes, and so can produce only a certain number of lambs, even in a good season. With certainty of good prices and profits, farmers will take steps to increase the breeding stock on their property and fertilise grass to handle increased stock units, eventually increasing lamb production over the next two years.