

FOREWORD

Since 2002, when exchange rate depreciation resulted in rising prices for most agricultural commodities and inputs, as well as retail food prices, there has been increasing interest in the behaviour of agricultural prices. This led to, for example, the establishment of a Food Price Monitoring Initiative by the National Agricultural Marketing Council (NAMC) and the publication of quarterly reports on changes in food prices. It was, however, also realised that it is important to monitor and disseminate information on changes in agricultural input costs. In August 2006 a workshop was convened with stakeholders in the agricultural sector, from which it emerged that input cost monitoring would be a welcome addition to ongoing research on changes in agriculture related prices. At this workshop the NAMC was mandated to coordinate input cost monitoring on behalf of the whole agricultural industry, and has since taken up this activity in collaboration with various branches of the agricultural industry. Input cost and food price monitoring now form part of two of the NAMC's key research themes, namely **agro-food chain analysis** and **market information systems**.

The purpose of input cost monitoring is to publish trends in farm input costs on a regular basis. This report provides broad trends in input costs for fruit, more specifically the deciduous fruit industry. (Note that broad trends in most input cost items are also applicable to other fruit). It should be noted that for the purpose of this report all regulated inputs, such as fuel prices and labour costs, are largely excluded.

The following issues are presented in this report: (i) broad trends in input cost movements for the fruit industry, (ii) the contribution of different variable input costs to the total variable input cost of deciduous fruit, and (iii) trends in individual input cost items.

The purpose of input cost monitoring is to publish trends in farm input costs on a regular basis. This report focuses on fruit, specifically apples, pears, peaches and nectarines, plums, apricots and table grapes.

Trends between 1990 and 2007:

PPI-Fruit: ↑ 246.2 %.

PPI-Horticulture: ↑ 275.4 %.

PPI-Total: ↑ 305.5 %.

FRPI-Total: ↑ 297.5%.

A comparison of price indices (price movements of outputs and inputs)

Figure 1 illustrates the trends for different input and output price indices between 1990 and 2007. Prices received for fruit (PPI-Fruit) increased by 246.2 % between 1990 and 2007, while horticulture crop prices (PPI-Horticulture) and all agricultural products (PPI-Total) increased by 275.4 % and 305.5 %, respectively. During the same period the prices paid for all farming requisites (FRPI-Total) increased by 297.5 %. The PPI-Fruit dropped from by 4.5 % between 2004 and 2006 while the other indices showed some recovery during 2006. This upward trend continued during 2007.

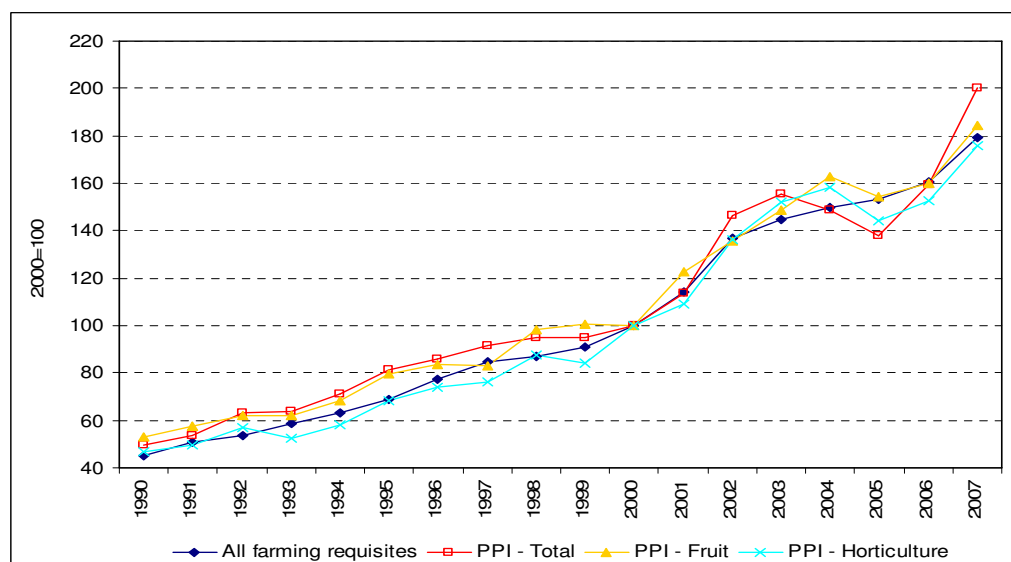


Figure 1: Comparison of various Price Indices, 1990 to 2007¹

Source: DoA, 2008.

¹ See Appendix A for definitions of different price indices.

Trends between 1990 and 2007:

PPI-Fruit: ↑ 246.2 %.

Fertiliser: ↑ 406.9 %.

Maintenance & repairs: ↑ 284.3 %.

Fuel: ↑ 534.3 %.

Packing material: ↑ 149.5 %.

The focus of the analysis is on apples, pears, apricots, plums, peaches and nectarines and table grapes.

Average contribution of selected variable input cost items to total production cost in 2007:

Fertilisers: 3.8 %.
Herbicides: 0.4 %.
Insecticides: 3.9 %.
Fungicides: 3 %.

Figure 2 compares the PPI-Fruit and the price indices for selected inputs. The “Packing Material” price index (representing all packing material used in agriculture) increased by 149.5 % between 1990 and 2007.

The “Fertiliser” price index increased by 406.9 % over the depicted period, while the “Maintenance and repairs” and “Fuel” price indices increased by 284.3 % and 534.3 %, respectively. As mentioned the PPI-Fruit price index increased by 246.2 %.

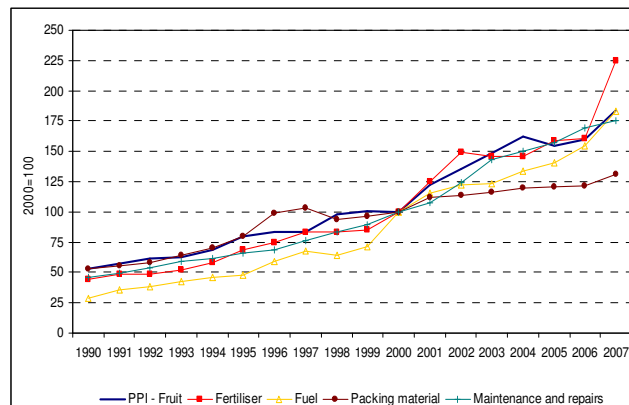


Figure 2: PPI-Fruit compared with price indices of selected inputs

Source: DoA, 2008.

The contribution of different input costs to total production cost of fruit

This section discusses the contribution of different variable input cost items to the total production cost of full-bearing fruit trees for 2007. The analysis focuses on apples, pears, apricots, plums, peaches and nectarines and table grapes. Total production costs consist of pre-harvest, post-harvest and overhead costs, as shown in Appendix B, Table B.1. In order to make reporting more manageable, not all input cost items will be discussed in detail in the main text. (Appendix B, Table B.2 shows different input cost item contributions toward total production cost that are not discussed in detail in the main 2007 report). Also note that depreciation is completely omitted from the analysis while fuel is included, but with no specific discussions. Brief reference is made to labour.

Figure 3a shows the percentage contribution of selected variable input cost items to total production cost per hectare for different deciduous fruits in 2007. Packaging costs contributed the most to the total production costs of all six fruit mentioned, and ranged between 25.8 % for apricots to 49.0 % for apples. Figure 3b illustrates the other input cost items, excluding packaging. Fertilisers, herbicides, insecticides and fungicides contributed on average 3.8, 0.4, 3.9 and 3.0 %, respectively, to total production cost.

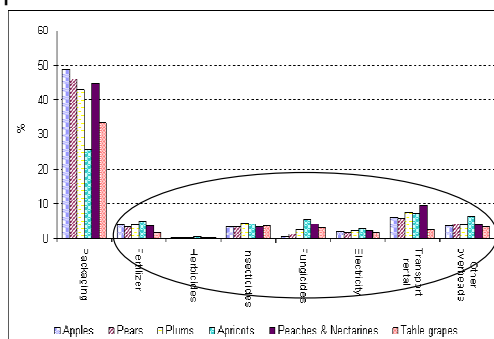


Figure 3a: Selected input cost items as percentage of total production cost per hectare during 2007²

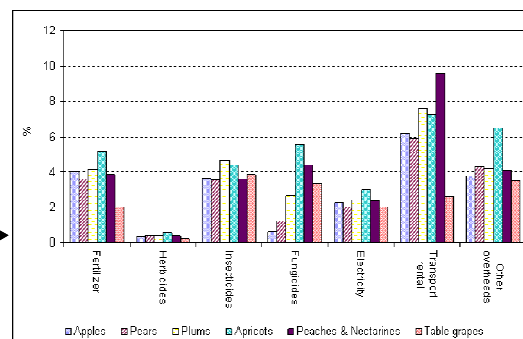


Figure 3b: Selected input cost items as percentage of total production cost per hectare during 2007, excluding packaging
Source: DFPT, 2008.

² See Appendix C for definitions of “Other overheads”.



Average contribution of selected variable input cost items to pre-harvest cost in 2007:

Fertilisers: 14.7 %.
 Herbicides: 1.4 %.
 Insecticides: 15.2 %.
 Fungicides: 10.7 %.

APPLES

Packaging costs contributed between 46 and 52.1 % to the total production cost of apples.

Percentage change in the contribution to total production cost between 2004 and 2007:

- Packaging: ↑ 6 %.
- Fungicides: ↓ 46.2 %.
- Other overheads: ↓ 26.8 %.
- Insecticides: ↓ 21.1 %.
- Fertilisers: ↑ 78.5 %.
- Herbicides: ↑ 17.7 %.
- Electricity: ↑ 4.3 %.
- Transport rental: ↑ 26.2 %.

If only pre-harvest costs are taken into account, fertilisers, herbicides, insecticides and fungicides contributed an average of 14.7, 1.4, 15.2 and 10.7 %, respectively.

Transport rental contributed significantly to total production cost. At 12.0 %, it is the largest cost item besides packaging (73.9 %) and seasonal labour (13 %), if post-harvest cost is isolated.

Figures 4 to 9 depict the percentage contribution of the selected input cost items to total production cost for individual fruit between 2004 and 2007. Note that the depreciation on orchards was not taken into account.

➤ **Apples**

In the apple industry packaging costs contributed 52.1, 46, 50 and 49 % to total production cost during 2004, 2005, 2006 and 2007, respectively. Figure 4 shows the percentage contribution of selected variable input cost items to total production costs between 2004 and 2007, excluding packaging costs. On average, transport rental contributed 5.4 % to total production cost, followed by other overheads (4.5 %), insecticides (4.2 %), fertiliser (2.8 %), electricity (2.2 %), fungicides (1 %) and herbicides (0.3 %).

The percentage contribution of other overheads, insecticides and fungicides to total production cost declined between 2004 and 2007 (i.e. down 26.8 % for other overheads, 21.1 % for insecticides and 46.2 % for fungicides). The opposite is true for fertiliser, herbicides, electricity and transport rental (i.e. up 78.5 % for fertiliser, 17.7 % for herbicides, 4.3 % for electricity and 26.2 % for transport rental).

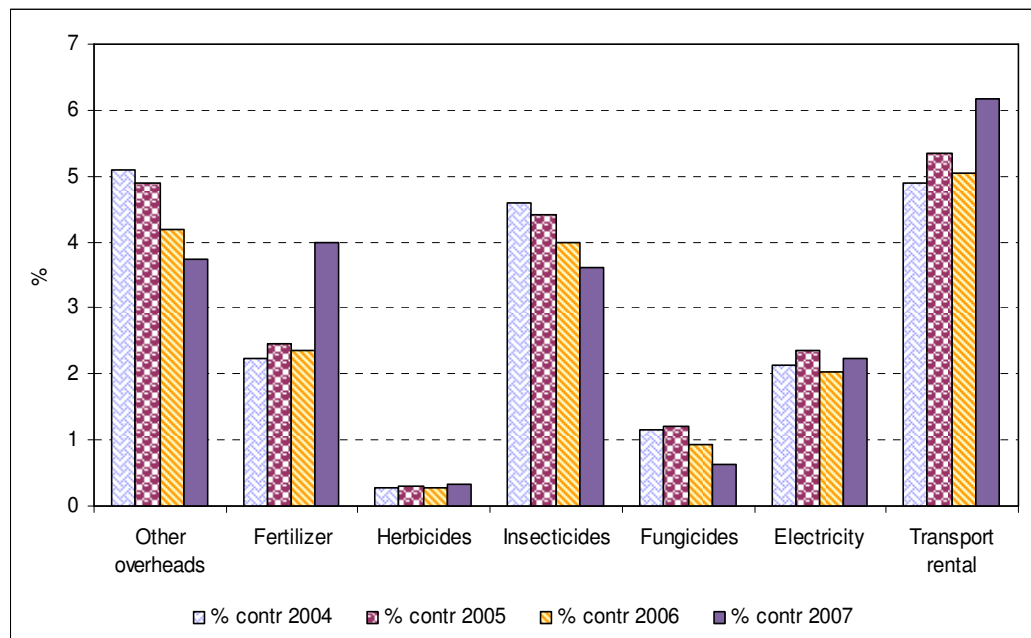


Figure 4: Percentage contribution of inputs to total cost of apple production³

Source: DFPT, 2008.

³ See Appendix C for definitions of “Other overheads”.

PEARS

Packaging costs contributed between 43.7 and 46.1 % to total production costs of pears.

Percentage change in the contribution to total production cost between 2004 and 2007:

Packaging: ↑ 5.4 %.

Fungicides: ↓ 44.5 %.

Other overheads: ↓ 33.7 %.

Electricity: ↓ 24.8 %.

Insecticides: ↓ 24.7 %.

Fertilisers: ↑ 15.5 %.

Transport rental: ↑ 14.1 %.

Herbicides: ↑ 6.6 %.

➤ **Pears**

In the pear industry packaging costs contributed 43.7, 44.4, 44.1 and 46.1 %, respectively, to total production cost during 2004, 2005, 2006 and 2007. Figure 5 shows the percentage contribution of selected variable input cost items between 2004 and 2007, excluding packaging costs. On average, other overheads contributed 5.5 % to total production cost, followed by transport rental (5.4 %), insecticides (4 %), fertiliser (3 %), electricity (2.7 %), fungicides (1.7 %) and herbicides (0.4 %).

The percentage contribution of other overheads, insecticides, fungicides and electricity to total production cost declined between 2004 and 2007 (i.e. down 33.7 % for other overheads, 24.7 % for insecticides, 44.5 % for fungicides and 24.8 % for electricity). The opposite is true for fertiliser, herbicides and transport rental (i.e. up 15.5 % for fertiliser, 6.6 % for herbicides and 14.1 % for transport rental).

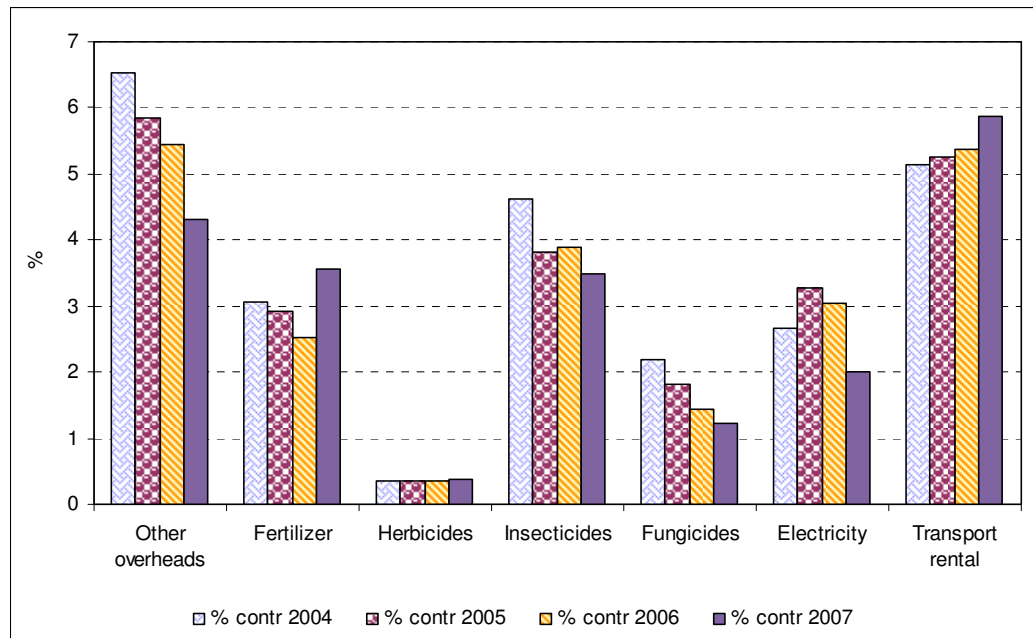


Figure 5: Percentage contribution of inputs to total cost of pear production
Source: DFPT, 2008.

APRICOTS

Packaging costs contributed between 32.8 and 33.7 % to total production costs of apricots.

Percentage change in the contribution to total production cost from 2005 to 2007:

Packaging: ↓ 23.6 %.

Other overheads: ↓ 2.3 %.

Fertilisers: ↑ 65.6 %.

Herbicides: ↑ 38.1 %.

Transport rental: ↑ 28.6 %.

Fungicides: ↑ 10 %.

Electricity: ↑ 2 %.

Insecticides: ↑ 2 %.

➤ Apricots

Due to the paucity of data for the stone fruit categories (apricot, peach & nectarine and plum), only data pertaining to 2005, 2006 and 2007 is reported.

In the apricot industry packaging costs contributed 33.7, 32.8 and 25.8 %, respectively, to total production cost during 2005, 2006 and 2007. Figure 6 shows the percentage contribution of selected variable input cost items to total production costs from 2005 to 2007, excluding packaging costs. On average, other overheads and transport rental contributed 6.4 %, followed by fungicides (5.3 %), insecticides (4.3 %), fertiliser (3.8 %), electricity (3 %) and herbicides (0.5 %).

The percentage contribution of other overheads to total production cost declined from 2005 to 2007 (i.e. down 2.3 %). The opposite is true for fungicides, fertiliser, electricity, herbicides, insecticides and transport rental (i.e. up 10 % for fungicides, 65.6 % for fertilisers, 2 % for electricity, 38.1 % for herbicides, 2 % for insecticides and 28.6 % for transport rental).

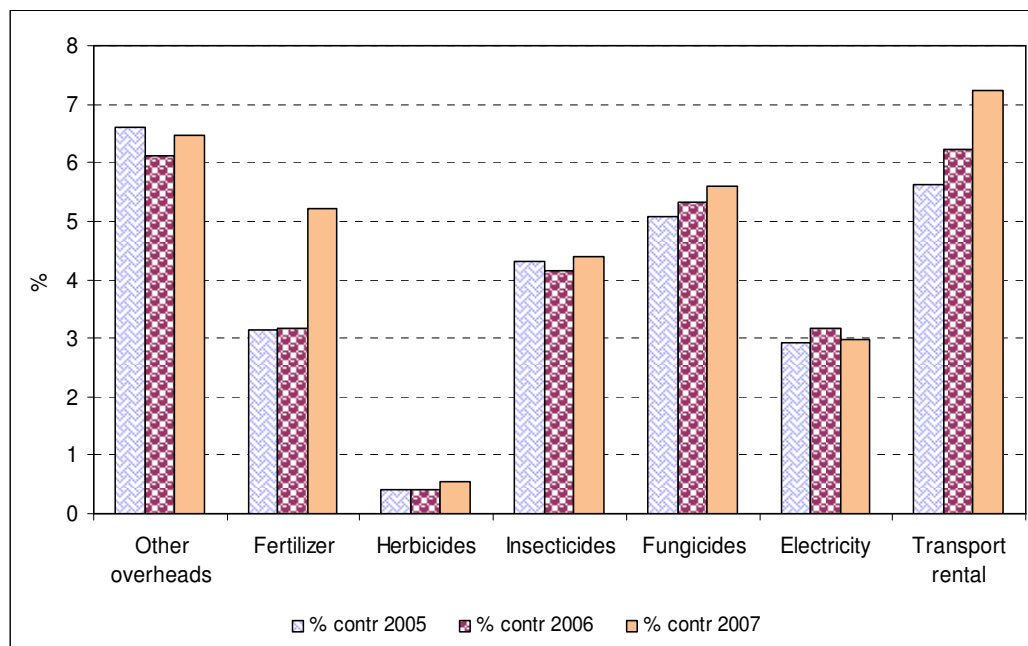


Figure 6: Percentage contribution of inputs to total cost of Apricot production

Source: DFPT, 2008.

PEACHES & NECTARINES

Packaging costs contributed between 41.7 and 44.6 % to the total production cost of peaches and nectarines.

Percentage change in the contribution to total production cost from 2005 to 2007:

Packaging: ↓ 4.2 %.

Other overheads: ↓ 15.1 %.

Insecticides: ↓ 23.9 %.

Electricity: ↓ 9.6 %.

Fertilisers: ↑ 54.4 %.

Transport rental: ↑ 7.4 %.

Fungicides: ↑ 28.1 %.

Herbicides: ↑ 20.1 %.

➤ **Peaches and nectarines**

In the peach and nectarine industry packaging costs contributed 42.8, 41.7 and 44.6 % to total production cost during 2005, 2006 and 2007, respectively. Figure 7 shows the percentage contribution of selected variable input cost items to total production costs from 2005 to 2007, excluding packaging costs. On average, transport rental contributed 9.5 % to total production cost followed by other overheads (4.4 %), fungicides (4.2 %), insecticides (4.1 %), fertiliser (3 %), electricity (2.4 %) and herbicides (0.3 %).

The percentage contribution of other overheads, insecticides and electricity to total production cost declined from 2005 to 2007 (i.e. down 15.1 % for other overheads, 23.9 % for insecticides and 9.6 % for electricity). The opposite is true for fertiliser, fungicides, herbicides and transport rental (i.e. up 54.4 % for fertiliser, 28.1 % for fungicides, 20.1 % for herbicides and 7.4 % for transport rental).

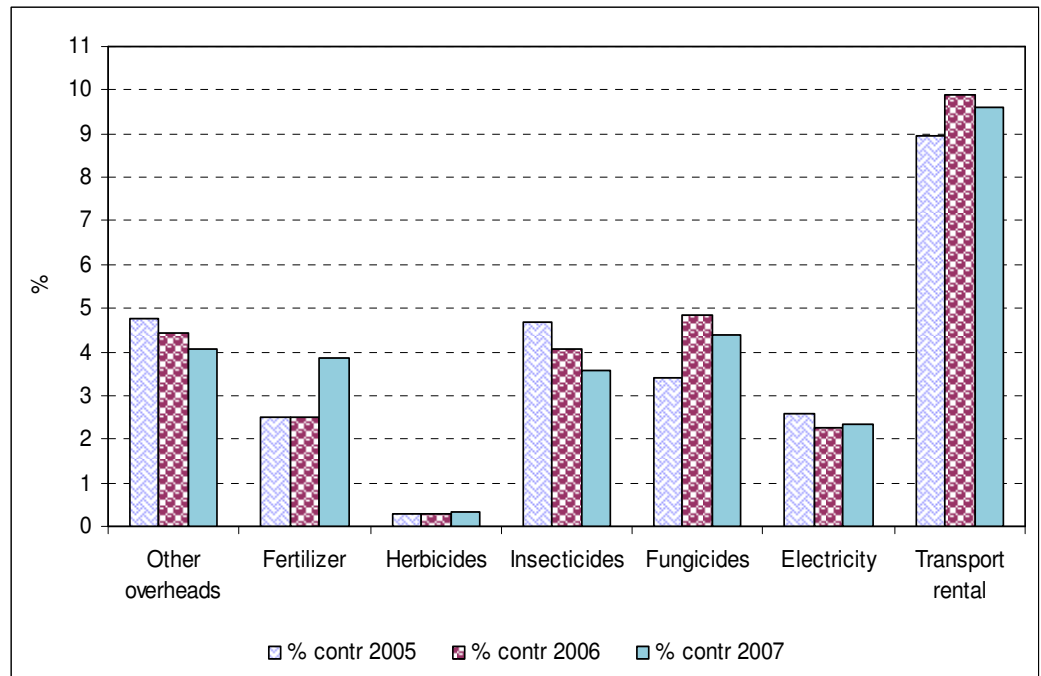


Figure 7: Percentage contribution of inputs to total cost of peaches and nectarines production

Source: DFPT, 2008.

PLUMS

Packaging costs contributed between 31.2 and 42.8 % to the total production cost of plums.

Percentage change in the contribution to total production cost from 2005 to 2007:

Packaging: ↑ 35.6 %.

Fertilisers: ↑ 44 %.

Herbicides: ↑ 8.1 %.

Fungicides: ↓ 24.3 %.

Other overheads: ↓ 23.5 %.

Insecticides: ↓ 20.1 %.

Electricity: ↓ 11.1 %.

Transport rental: ↓ 3 %.

➤ Plums

In the plum industry packaging costs contributed 31.6, 31.2 and 42.8 % to total production cost during 2005, 2006 and 2007, respectively. Figure 8 depicts the percentage contribution of selected variable input cost items to total production costs from 2005 to 2007, excluding packaging costs. On average, transport rental contributed 8.1 %, followed by insecticides (5.5 %), other overheads (4.9 %), fertiliser (3.3 %), fungicides (3.1 %), electricity (2.6 %) and herbicides (0.3 %).

The percentage contribution of fungicides, other overheads, insecticides, electricity and transport rental to total production cost declined from 2005 to 2007 (i.e. down 24.3 % for fungicides, 23.5 % for other overheads, 20.1 % for insecticides, 11.1 % for electricity and 3 % for transport rental). The opposite is true for fertiliser and herbicides (i.e. up 44 % for fertiliser and 8.1 % for herbicides).

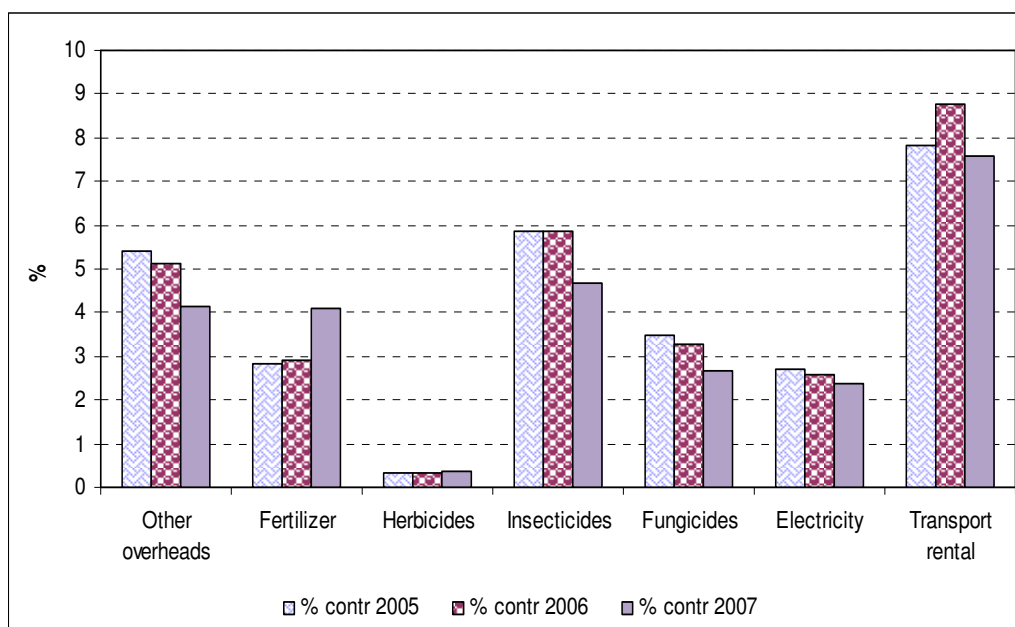


Figure 8: Percentage contribution of inputs to total cost of plum production

Source: DFPT, 2008.

TABLE GRAPES

Packaging costs contributed between 28.5 and 33.5 % to total production costs of table grapes.

Percentage change in the contribution to total production cost between 2004 and 2007:

Packaging: ↑ 17.4 %.

Other overheads: ↓ 27.3 %.

Herbicides: ↓ 7 %

Electricity: ↓ 19.1 %

Fertilisers: ↓ 8.2 %.

Fungicides: ↓ 0.4 %.

Insecticides: ↑ 27.5 %

Transport rental: ↑ 0.7 %.

➤ Table grapes

In the table grape industry packaging costs contributed 28.5, 31.2, 33.2 and 33.5 % to total production costs during 2004, 2005, 2006 and 2007, respectively. Figure 9 denotes the percentage contribution of selected variable input cost items to total production costs between 2004 and 2007, excluding packaging costs. On average, other overheads contributed 4.1 % to total production cost, followed by insecticides (3.6 %), fungicides (3.4 %), transport rental (2.4 %), electricity (2.1 %), fertiliser (2.0 %), and herbicides (0.2 %).

The percentage contribution of other overheads, herbicides, electricity, fertiliser and fungicides to total production cost declined between 2004 and 2007 (i.e. down 27.3 % for other overheads, 23.7 % for herbicides, 18.4 % for electricity, 8.2 % for fertiliser and 0.4 % for fungicides). The opposite is true for insecticides and transport rental (i.e. up 28.6 % for insecticides and 0.7 % for transport rental).

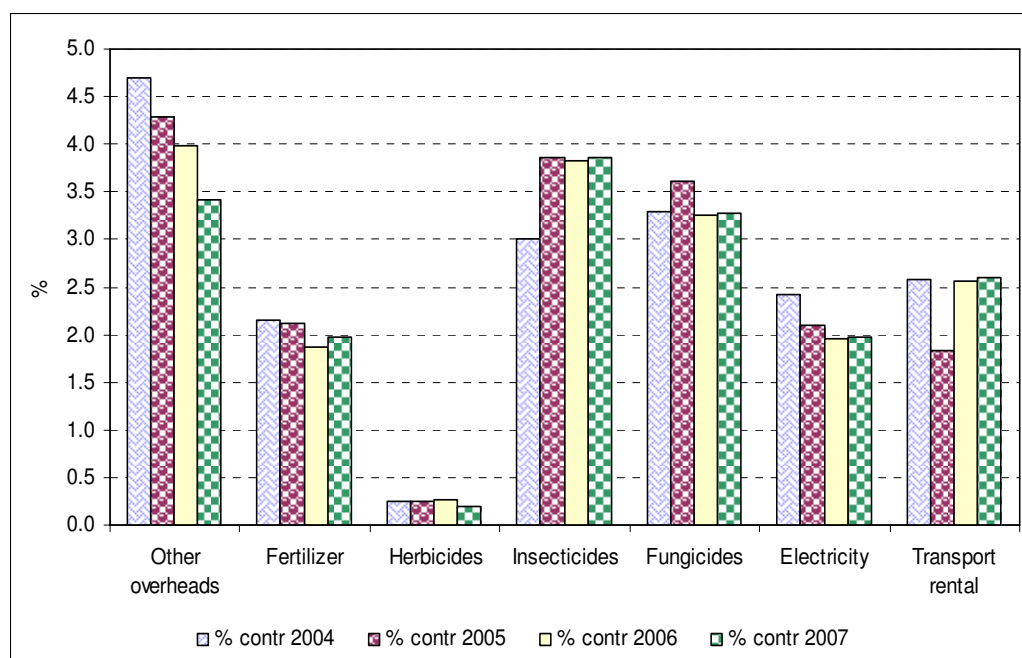


Figure 9: Percentage contribution of inputs to total cost of table grape production

Source: DFPT, 2008.

Price trends for individual input cost items from 2000 to 2008:

- Wetting agents: ↑ 435.1 %
- Fertilisers: ↑ 352.8 %
- Herbicides: ↑ 244.3 %
- Trace elements: ↑ 236.6 %
- Rest breaking agents: ↑ 71.1 %
- Growth regulators: ↑ 21.3 %

Between 2000 and 2007 the PPI-Fruit increased by 84.2 %.

Individual input cost trends

When comparing the price trends of individual input items, indices were calculated with 2000 as base year. Input items per input category with the same unit of measurement were averaged, while those with different units are shown individually.

Figure 10 shows the price trends for different selected input cost categories and the PPI-fruit⁴. All the input categories except growth regulators showed upward trends from 2000 to 2008. The highest increase was for wetting agents (435.1 %), followed by fertilisers (352.8 %) and herbicides (244.3 %). Average trace element prices increased by 236.6 percent and rest breaking agents by 71.1 %, while growth regulators increased by 21.3 % over the same period. The PPI-fruit increased by 62.6 % from 2000 to 2004, after which it dropped by 1.6 % until 2006, then increased again by 15.1 % during 2007 (the overall increase until the end of 2007 in the PPI-fruit was 84.2 %).

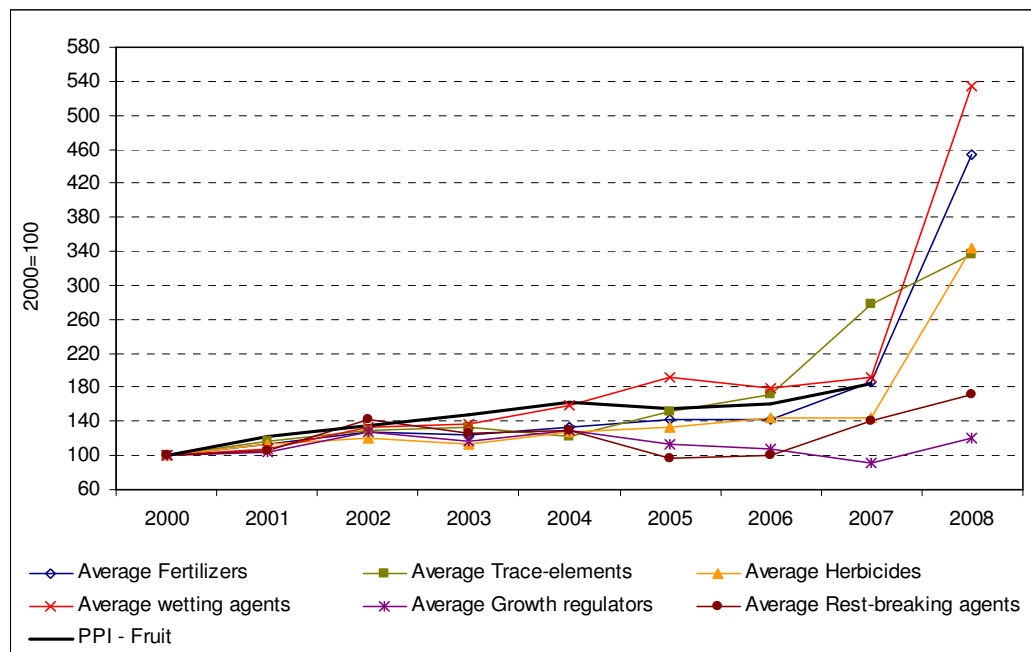


Figure 10: Price indices for various inputs (2000=100)

Source: Calculations based on DFPT data, 2008.

In the rest of this section selected input cost categories will be discussed in more detail. The input categories include packaging, pesticides, fungicides and labour.

❖ Packaging

As mentioned earlier, packaging costs contribute between 26 and 49 % to the total production cost of deciduous fruit, and thus warrant further investigation. Note must be taken that the packaging material used differs from year to year, and also according to market requirements. This state of affairs makes it more difficult to standardise annual packaging components. The inputs used to produce different packaging components are also discussed in this section.

⁴ PPI – Fruit not available for 2008

The price of pulp as input to paper, and ultimately carton manufacturing, is based on international prices, global market conditions and the rand/US dollar exchange rate.

Price trends for NBSK and SBSK pulp from 2003 to August 2008:

NBSK: ↑ 55.7 %

SBSK: ↑ 55.4 %

Price trends for RPT from 2003 to 2008: 24.7 % increase.

- *Pulp and cartons*

The price of pulp as input to paper, and ultimately carton manufacturing, is based on international prices, global market conditions and the rand/US dollar exchange rate. The Northern Bleached Softwood Kraft pulp and the Southern Bleached Softwood Kraft pulp prices are used as the lead indicators for local pulp pricing. Softwood pulp is a long fibre pulp made from pine tree species, and hardwood pulp is a short fibre pulp made from gum tree species. Both are used in the paper for packaging paper; three parts long fibre for strength and one part short fibre for a good surface (profile)⁵.

Figure 11 shows the price indices of Northern Bleached Softwood Kraft (NBSK-Rand) and Southern Bleached Softwood Kraft (SBSK-Rand) pulp in rand terms and compares the R/US\$ exchange rate to average Return per Ton carton price indices⁶ (Average RPT). Note should be taken that 2003 is used as base year for these indices due to lack of historical data for the average RPT price of carton.

Both the NBSK-Rand and SBSK-Rand pulp prices moved sideways from 2003 to 2005, with an increase of 18.1 and 17 %, respectively, during 2006. Further increases occurred in 2007 (35.8 % and 38.6 %), with some slight decreases in 2008. The NBSK-Rand and SBSK-Rand pulp prices increased by 55.7 % and by 55.4 %, respectively from 2003 to August 2008. During the depicted period, the average RPT price for carton increased by 24.7 % and the R/US\$ depreciated by 1.5 %.

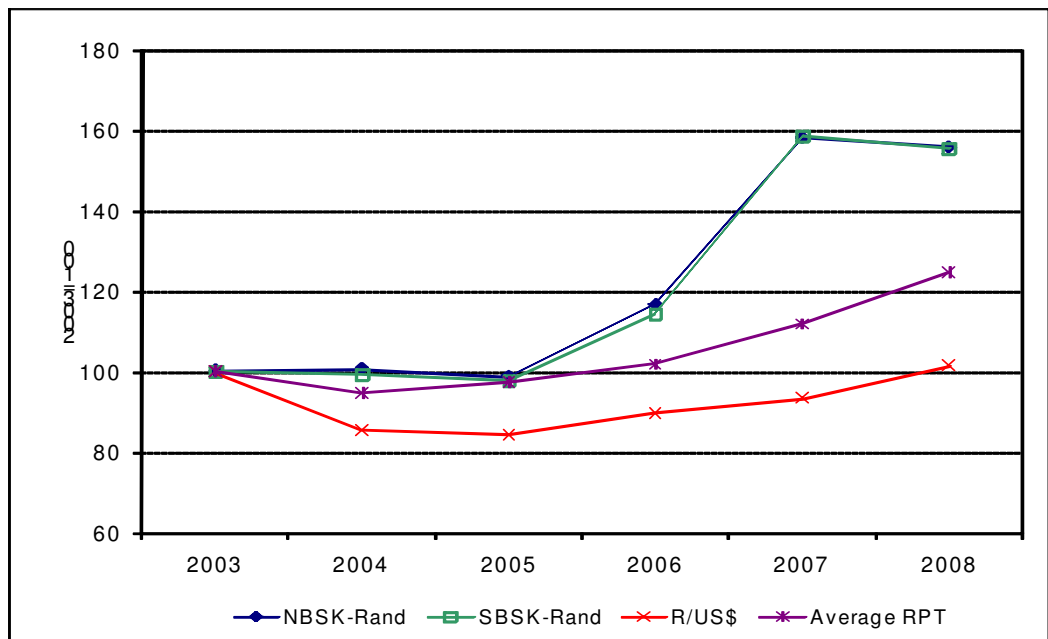


Figure 11: Price indices of pulp and carton (2003=100)

Source: Pulp prices, SAPPI 2008 and RPT, various carton manufacturers, 2008

⁵ Background information provided by SAPPI, 2007.

⁶ Return per ton was sourced from different carton manufacturers and distributors.

All grades of Polyethylene experienced unprecedented price increases during 2007 to 2008.

Polyethylenes are produced by the polymerisation reaction of Ethylene. Ethylene is produced from crude oil.

During 2008 oil prices have been heavily influenced by global politics, currency issues, market speculation, erratic weather patterns and supply and demand economics.

Iran remains OPEC's second largest oil producer.

Oil traders are constantly on edge about the potential loss of supply volumes from Iran.

The decline in the value of the US Dollar against the other major world currencies during 2007 to 2008, particularly the Euro, has been a major driving force behind higher oil prices.

- *Plastic*⁷

Polyethylene pricing follows the same pricing trends shown by all commodity materials in the modern world. At any given time Polyethylene prices are set by the supply and demand dynamics in world markets during that period. All grades of Polyethylene experienced unprecedented price increases during 2007 to 2008.

Polyethylenes are produced by the polymerisation reaction of Ethylene. Ethylene is produced from crude oil. South African domestic Polyethylene prices are largely based on the cost of importing Polyethylene from the major international production regions (Asia, North West Europe, the Middle East and the US Gulf). South African domestic Polyethylene prices are therefore based largely on global Polyethylene price levels and the Rand / US\$ exchange rate, and thus are largely dependent on crude oil prices.

During 2008 oil prices have been heavily influenced by global politics, currency issues, market speculation, erratic weather patterns and supply and demand economics.

Global Politics

Rebel groups continue to launch militant attacks against oil installations in Nigeria, and labour unrest constantly undermines production and causes supply disruptions. Nigeria typically pumps oil at only 70 – 80 % of its installed capacity.

Conflict between Russia and Georgia is threatening the flow of oil from that region of the world.

Ongoing political tensions between Israel and Iran are supporting the higher oil prices initially established due to other factors over recent months. Iran remains OPEC's second largest oil producer. Oil traders are constantly on edge about the potential loss of supply volumes from this source. Any disruption to shipping out of the Hormuz Strait will threaten the continuity of oil supply to world markets.

Currency Issues

The decline in the value of the US Dollar against other major world currencies during 2007 to 2008, particularly the Euro, has been a major driving force behind higher oil prices. During 2008 every 1 % decline in the value of the US Dollar against the Euro was met with an increase of about \$ 5 / bbl in the oil price. Whenever there was a strengthening of the US Dollar the oil price decreased again. The weaker dollar pushes the oil price upwards as investors buy oil as a hedge against inflation. Oil sellers demand more of the weaker currency for their oil to cover their non-US dollar costs and to reflect its fair value.

Although there has been some short term strengthening of the US dollar it is expected to remain weak against the Euro. It is expected that the US Federal Reserve's decision to keep US interest rates low will prolong the slow growth, high inflation environment which is developing.

The turmoil in world financial markets around the sub-prime credit crisis pushed speculative investors back into hard-asset class investments. Oil and other commodities are still seen as a safe investment in times of financial upheaval.

⁷ Information sourced from Mike Rex, Global Commodity Analysts (Pty) Ltd, 2008

Oil and other commodities are still seen as a safe investment in times of financial upheaval.

At such times it is estimated that a barrel of oil can be bought and sold 60 – 70 times before it is eventually delivered to a customer who actually processes it.

The hurricane damage in 2005 took three months to repair. Tropical storms like Katrina can strike at any time between August and November.

High worldwide energy demands and ongoing Asian economic growth rates kept crude oil demand high throughout 2007 and into 2008

Market Speculation

With OPEC doing its best to try and match the flow of crude oil supply to world demand some analysts have again pointed a finger at market speculators being a major cause of runaway oil prices. As investors shy away from other troubled markets they find comfort in the oil futures market, where any disruption or uncertainty helps them to make a profit on futures contracts. At such times it is estimated that a barrel of oil can be bought and sold 60 – 70 times before it is eventually delivered to a customer who actually processes it.

Weather

Since hurricane Katrina wreaked havoc in the US Gulf in 2005 there has been a marked increase in the number of serious tropical storms in that region. The US Gulf region is responsible for approximately 25 % of the US oil supply and countless downstream petrochemical operations, including Polyethylene production plants. The 2005 hurricane damage took three months to repair. Significant price increases followed the shortages in the US and South American markets. All world polymer markets were influenced by those price increases. Tropical storms like Katrina can strike at any time between August and November.

Supply and Demand Economics

High worldwide energy demands and ongoing Asian economic growth rates kept crude oil demand high throughout 2007 and into 2008. Most commodity plastic markets are currently characterised by high demand, stretched supply and record high raw material input costs. Although a lot more Ethylene and Polyethylene capacity has come on stream during 2008, a lot of what was expected has been delayed. This situation should ease into 2009 and 2010.

Figure 12 illustrates the Brent Spot Crude Oil Price from 2005 to 2008. When oil prices increased above \$ 140 / bbl in June it seemed likely that the price would easily breach the psychological \$ 150 / bbl level. OPEC announced that the organisation did not expect oil prices to increase to \$ 200 / bbl as a number of other organisations, including several financial institutions, expected. Instead, oil prices were expected to soften in the third quarter in line with the seasonal decrease in worldwide demand. As it turned out, oil prices peaked at a little over \$ 145 / bbl for Brent crude, a few US cents per barrel higher than on the New York Mercantile Exchange towards the end of June 2008.

Since June oil prices have dropped to below \$ 110 / bbl, the price level last seen in mid-April 2008.

Now that the 2008 Olympic Games are over, China's economy is expected to grow at a slower rate. This growth rate will still be way ahead of that seen in other regions.

The price indices for LDPE and LLDPE increased by 128.9 and 137.3 percent, respectively, over the depicted period.

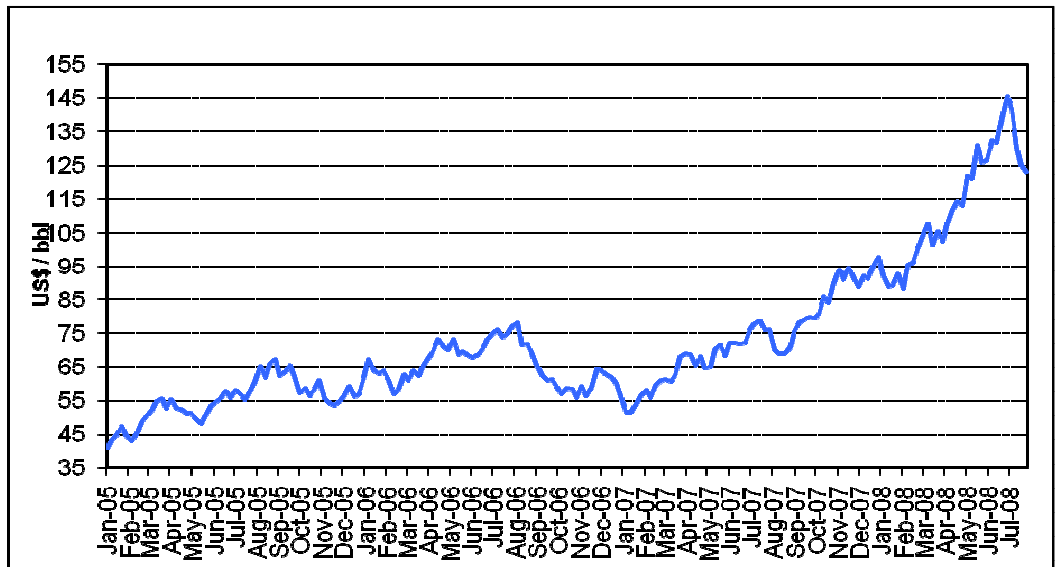


Figure 12:Brent Spot Crude Oil Price from 2005 to 2008

Source: Global Commodity Analysts (Pty) Ltd, 2008

Since June oil prices have dropped to below \$ 110 / bbl, a price level last seen in mid-April 2008. Lower oil prices can be expected in the short term. Polyethylene prices are expected to decrease in line with crude oil and Ethylene prices. Now that the 2008 Olympic Games are over, China's economy is expected to grow at a slower rate. This growth rate will still be way ahead of that seen in other regions.

Indicative South African price indices for Low-density Polyethylene (LDPE) and Linear Low Density Polyethylene (LLDPE) over 2002 – 2008 can be seen in Figure 13. All index levels have been calculated relative to a local market base price of 1.000 in August 1998. The price indices for LDPE and LLDPE increased by 128.9 and 137.3 percent, respectively, over the depicted period. Prices escalated from October 2007 to July 2008 by 36.1 and 49.8 %, respectively and LDPE and LLDPE reached a new peak.

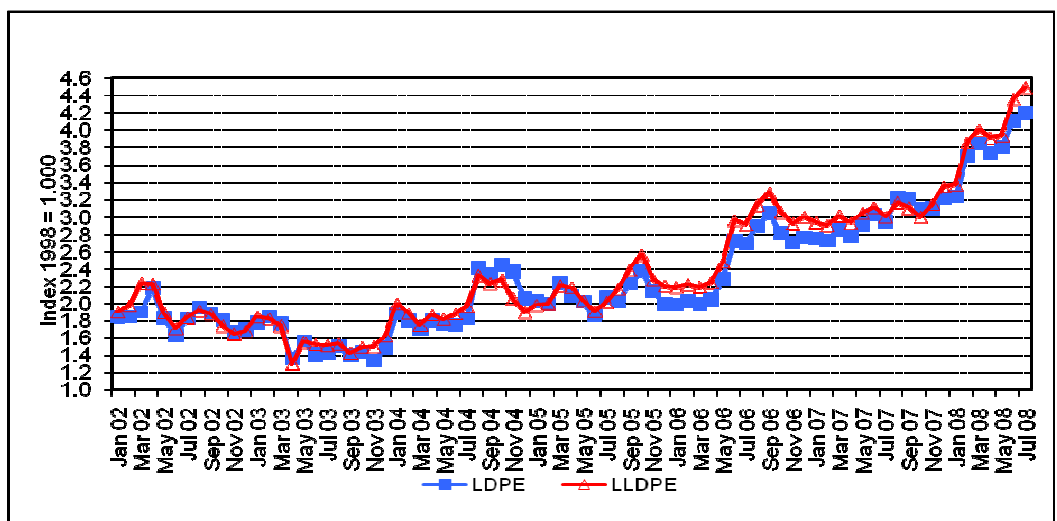


Figure 13: South African price indices for Low-density Polyethylene (LDPE) and Linear Low Density Polyethylene (LLDPE)

Source: Global Commodity Analysts (Pty) Ltd, 2008

The US market saw unprecedented price increases during the June - August period. Relatively lower Ethylene costs allowed US producers to export large volumes of Polyethylene during this period. US prices are now expected to come under pressure from lower oil and feedstock prices, just like the other producing regions of the world.

Price trends in packaging material to pack apples (2000 - 2008):

Bag liners: ↑ 111.4 %

12.5 kg Carton: ↑ 78.3 %.

Pulp trays: ↑ 77.8 %

PPI-Fresh Apples: ↑ 130.4 %

Asian Polyethylene prices have already dropped by 3 – 4 % from their recent record highs. Lower prices are expected in the third quarter.

European LDPE and LLDPE prices were still increasing in August. The increases were greater than the increases seen in European Ethylene prices over the same period. This is largely due to unexpected short term supply restrictions during the last three months. Lower prices are expected in Europe in Quarter 4, as the global economy continues to slow. New Middle Eastern capacity will enter the European market from the middle of 2009, causing further downward pressure on pricing in that region.

The US market saw unprecedented price increases during June – August. Relatively lower Ethylene costs allowed US producers to export large volumes of Polyethylene during this period. US prices are now expected to come under pressure from lower oil and feedstock prices, just like the other producing regions of the world.

When considering the cost of typical packaging material used in the various fruit groups, Figures 15 to 18 compare these prices with the PPI-fruit and PPI – Fresh Apple, PPI – Fresh Pears, PPI – Fresh Grapes, PPI – Fresh Apricots, PPI – Fresh peaches & nectarines and PPI – Fresh Plums⁸ from 2000 to 2008.

Figure 14 illustrates the movements in price indices for different packaging items used to pack apples. All items showed an upward trend from 2000 to 2008, with the biggest increase (111.4 %) being in the price of bag liners, followed by 12.5 kg Cartons (78.3 %) and pulp trays (77.8 %).

The PPI-fruit increased by 84.2 % (2000 to 2007) and the PPI – Fresh Apples by 130.4 % over the same period.

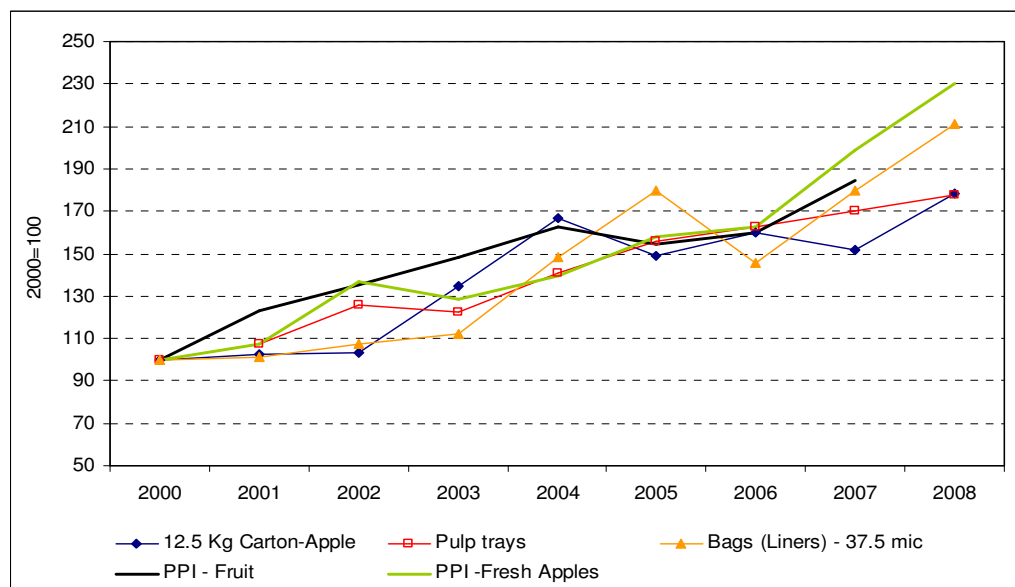


Figure 14: Price indices of different packaging items for apples⁹

Source: Own calculations based on DFPT data, 2008.

⁸ PPI for fresh fruit is own calculations based on fresh produce market prices sourced from DoA. Figures for 2008 are for January to June.

⁹ Note PPI-Fruit is used to maintain consistency across figures. Not available for 2008.

Price trends in packaging material to pack pears (2000 - 2008):

Bag liners: ↑ 111.4 %

12.5 kg Carton: ↑ 104.9 %

Pulp trays: ↑ 77.8 %

PPI-Fresh Pears: ↑ 139.9 %

Price trends in packaging material to pack table grapes (2001 - 2008):

4.5 kg Carton: ↑ 101.3 %

Plastic bags: ↑ 60 %

SO² sheets: ↑ 4.8 %

MAM sheets: ↓ 60 %

Carry bags: ↓ 24.5 %

Ripple sheets: ↓ 18 %

Figure 15 depicts the movements in price indices for different packaging items used to pack pears. All the items showed upward trends from 2000 to 2008, with the biggest increase in the price of bag liners (111.4 %) followed by 12.5 kg Carton (104.9 %) and pulp trays (77.8 %). The PPI-fruit increased by 84.2 % (2000 to 2007) and the PPI - Fresh Pears by 139.9 % over the same period.

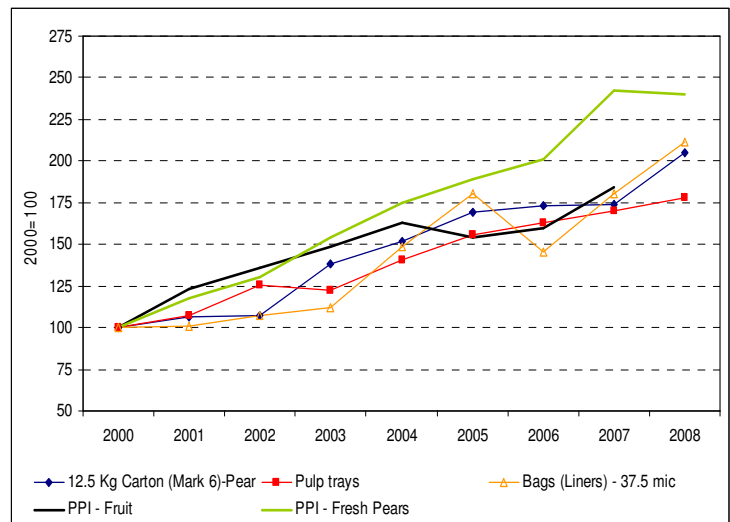


Figure 15: Price indices of different packaging items for pears

Source: Calculations based on DFPT data, 2008

Figure 16 indicates the movement in price indices for different packaging items used to pack table grapes. Due to the lack of data for 2000, 2001 was used as the base year for these calculations. During the depicted period, the biggest increase occurred in the price of 4.5 kg cartons (101.3 %), followed by plastic bags (60 %) and SO² sheets (4.8 %). The biggest decrease occurred in the price of MAM sheets (60 %), followed by carry bags (24.5 %) and ripple sheets (18 %), respectively. The PPI-fruit increased by 50 % (2001 to 2007) and the PPI - Fresh Grapes by 64.9 % over the same period. From 2007 to June 2008, the PPI - Fresh Grapes decreased by 12.6 %.

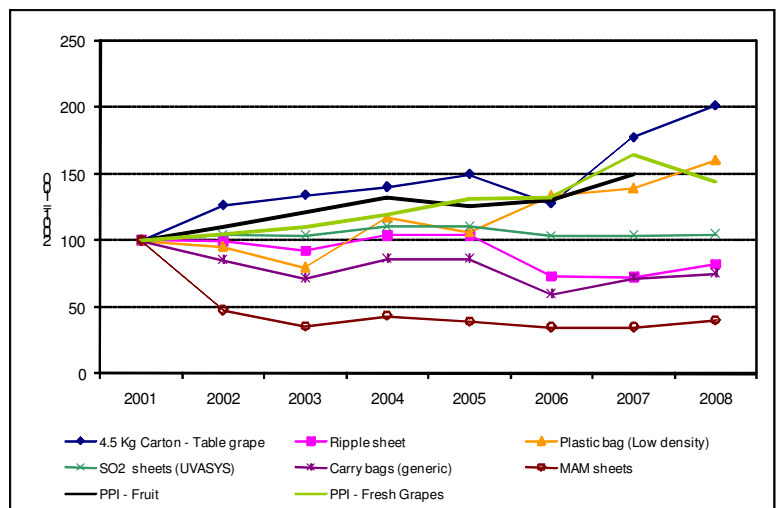


Figure 16: Price indices of different packaging items for table grapes

Source: Calculations based on DFPT and SATI data, 2008

Price trends in packaging material to pack stone fruit (2005 - 2008):

Pulp trays: ↑ 12.2 %

Average price for carton 300 x 400mm: ↑ 7.3 %

PPI - Fresh Apricots: ↑ 12.7 %

PPI - Fresh Peaches & Nectarines: ↑ 18.2 %

PPI - Fresh Plums: ↑ 24.4 %

Price trends in fertilisers (2000 - 2008):

Double Super Phosphate: ↑ 513.2 %.

KCL: ↑ 426.2 %

LAN (28): ↑ 283 %

3:0:5(39): ↑ 192.6 %

The PPI-fruit increased by 84.2 % between 2000 and 2007.

Figure 17 shows the movement in price indices for different packaging items used to pack stone fruit. Due to paucity in data for the stone fruit categories (apricot, peach & nectarine and plum) the indices were calculated with 2005 as base year.

All the items showed upward trends from 2005 to 2008, with the biggest increase being in the price of pulp trays (12.2 %) followed by the average price for carton 300x400mm (7.3 %). The PPI - Fresh Apricots increased by 12.7 %, PPI - Fresh Peaches & Nectarines by 18.2 % and the PPI - Fresh Plums by 24.4 % over the same period.

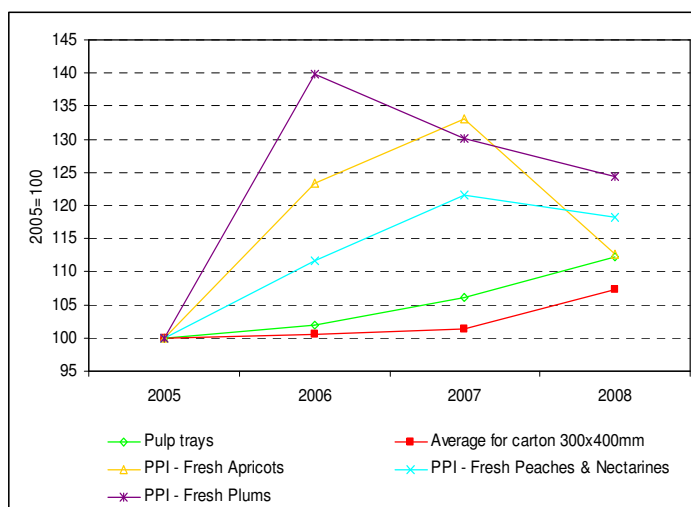


Figure 17: Price indices of different packaging items for stone fruit

Source: Calculations based on DFPT data, 2008.

❖ Fertilisers

Figure 18 shows the movement in the price indices for different fertilisers. All the items showed steady upward trends between 2000 and 2007, and escalated further for 2008. The biggest increase in the price was for Double Super Phosphate (513.2 %) followed by KCL (426.2 %), LAN(28) and 3:0:5(39)¹⁰ (283 % and 192.6 %, respectively).

The PPI-fruit increased by 84.2 % between 2000 and 2007.

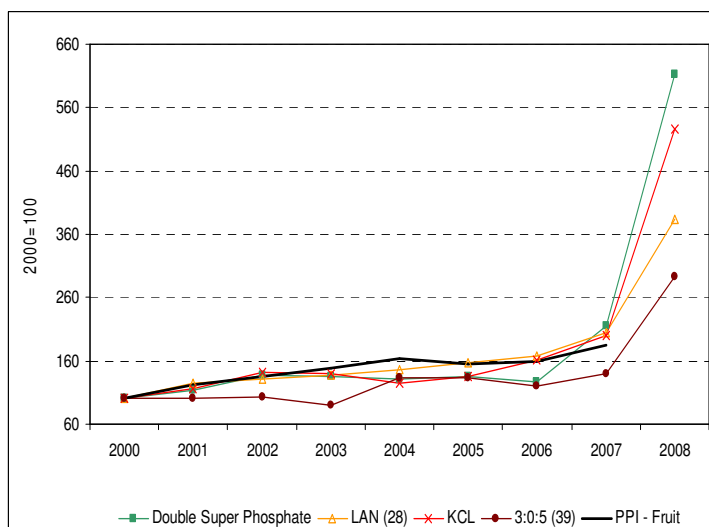


Figure 18: Price indices for fertiliser types (2000=100)

Source: Calculations based on DFPT data, 2008.

❖ Pesticides

Figure 19a and 19b indicate the price changes of different pesticides from 2000 to 2008. (Note the Figures show the active product name).

¹⁰ For 3:0:5 (39) data is for 2000 and 2004 estimates

The price trends for pesticides with reference to active product name (2000 to 2008) were:

Chlorpyrifos: ↑ 139.2 %

Cyhexatin: ↑ 74.9 %

Metamidophos: ↑ 48.5 %

Ainphos-Methyl: ↑ 7.6 %

The PPI-fruit increased by 84.2 % between 2000 and 2007.

Pesticide components continued:

Acephate: ↑ 135.5 %

OFM Pheremone: ↑ 62.4 %

Endosulfan 350 g/lit: ↑ 75.4 %

Methomyl 900 g/kg: ↑ 24.9 %

The PPI-fruit increased by 84.2 % between 2000 and 2007.

Figure 19a depicts the following trends for 2000 to 2008:

Chlorpyrifos: 139.2 % increase.

Cyhexatin: 74.9 % increase.

Metamidophos: 48.5 % increase.

Ainphos-Methyl: 7.6 % increase.

The PPI-fruit increased by 84.2 % between 2000 and 2007.

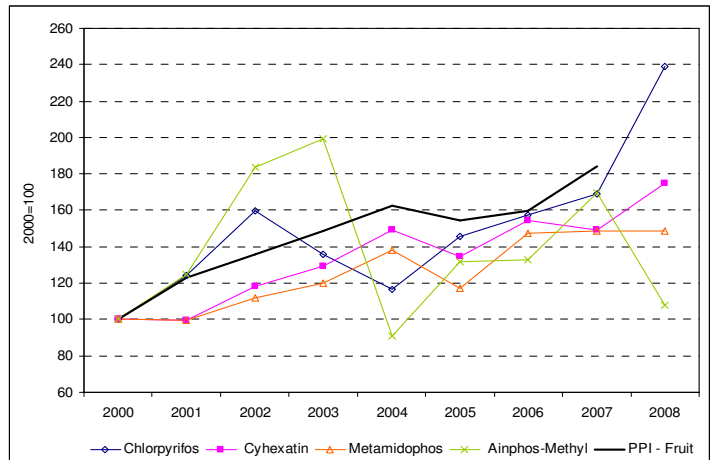


Figure 19a: Price indices of different types of pesticides (2000=100)

Source: Calculations based on DFPT data, 2008.

Figure 19b depicts the following trends for 2000 to 2008:

Acephate: 135.5 % increase.

OFM Pheremone: 62.4 % increase.

Endosulfan 350 g/lit: 75.4 % increase.

Endosulfan: 29.1 % increase.

Methomyl 900 g/kg: 24.9 % increase.

The PPI-fruit increased by 84.2 % between 2000 and 2007.

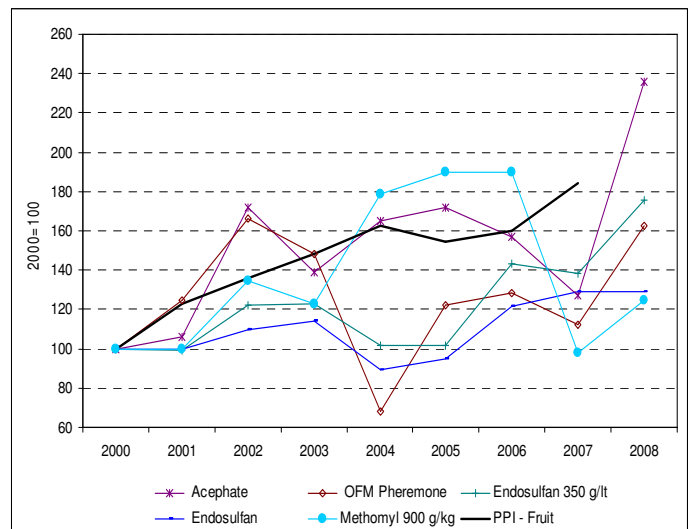


Figure 19b: Price indices of different types of pesticides (2000=100)

Source: Calculations based on DFPT data, 2008.

❖ Fungicides

Figures 20a and 20b show the price indices for different types of fungicides from 2000 to 2006. (Note reference is made to the active product names).

Figure 20a depicts the following trends for 2000 to 2008:

The price trends for fungicides with reference to active product name (2000 to 2008) were:

Mancozeb 800g/kg: ↑ 201.6 %.

Iprodione: ↑ 25 %.

Fenarimol: ↑ 12.4 %.

Prothiophos: ↑ 73.3 %.

Trifloxystrobin: ↓ 19.9 %.

Copper: ↑ 200.3 %.

Mancozeb 800g/kg: 201.6 % increase.

Iprodione: 25 % increase.

Fenarimol: 12.4 % increase.

Prothiophos: 73.3 % increase.

Trifloxystrobin: 19.9 % decrease.

Copper: 200.3 % increase.

The PPI-fruit increased by 84.2 % between 2000 and 2007.

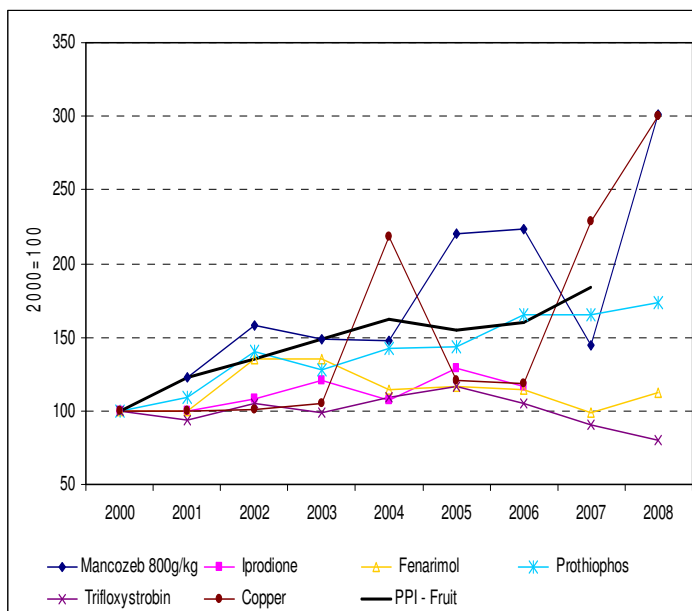


Figure 20a: Price indices of various types of fungicides (2000=100)

Source: Calculations based on DFPT data, 2008.

Fungicide components continued:

Triforine: ↑ 18.7 %.

Thiram: ↑ 107.1 %.

Buprimate: ↑ 17.7 %.

Copper Oxychloride: ↑ 173.6 %.

Phenyl-ethyleneox: ↑ 120 %.

Imidacloprid: ↓ 5.9 %.

(s)Trans-2amino4: ↑ 8.4 %.

Figure 20b depicts the following trends for 2000 to 2008:

Triforine: 18.7 % increase.

Thiram: 107.1 % increase.

Buprimate: 17.7 % increase.

Copper Oxychloride: 173.6 % increase.

Phenyl-ethyleneox: 120 % increase.

Imidacloprid: 5.9 % decrease.

(s)Trans-2amino4: 8.4 % increase.

The PPI-fruit increased by 84.2 % between 2000 and 2007.

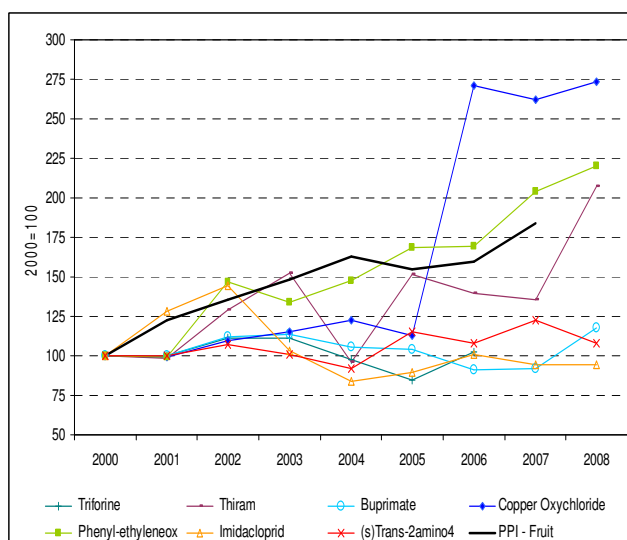


Figure 20b: Price indices of various types of fungicides (2000=100)

Source: Calculations based on DFPT data, 2008.

The PPI-fruit increased by 84.2 % between 2000 and 2007.

Labour costs contributed, on average, between 15.2 and 20.5 % to the production costs of the industries discussed during 2007.

Minimum wages increased more year-on-year than the CPIX since 2003, except for 2007 and 2008 in Area A.

Labour

Labour is another major expense for fruit producers and contributed, on average, between 15.2 and 32.5 % to the production costs of the industries discussed during 2007. Table 1 shows the minimum wage summary for 2003 to 2008. The 2008 wage rates are applicable up to February 2009.

Table 1: Minimum wage summary from 2003 - 2008

Year	Area A		% from base	Year on year	CPIX %
	Rand/Hour	Rand/month			
1/03/2003	R 4.10	R 800.0			9.3
1/03/2004	R 4.47	R 871.6	8.95 %	8.95 %	4.4
1/03/2005	R 4.87	R 949.6	18.70 %	8.95 %	3.6
1/03/2006	R 5.10	R 994.0	24.25 %	4.68 %	3.8
1/03/2007	R 5.34	R 1 041.0	30.13 %	4.73 %	5.5
1/03/2008	R 5.59	R 1 090.0	36.25 %	4.71 %	10.1
Year	Area B		% from base	Year on year	CPIX %
	Rand/Hour	Rand/month			
1/03/2003	R 3.33	R 650.0			9.3
1/03/2004	R 3.66	R 713.7	9.8 %	9.79 %	4.4
1/03/2005	R 4.03	R 785.8	20.9 %	10.11 %	3.6
1/03/2006	R 4.54	R 885.0	36.2 %	12.63 %	3.8
1/03/2007	R 5.07	R 989.0	52.2 %	11.75 %	5.5
1/03/2008	R 5.59	R 1 090.0	67.7 %	10.21 %	10.1

Disclaimer:

Although everything has been done to ensure the accuracy of the information in this publication, the NAMC does not take responsibility for the accuracy or the opinions contained in this publication. Results of actions based on this information will not be the responsibility of the NAMC.

Appendix A: Definitions of different price indices

FRPI-Total includes prices indices for machinery and implements, materials for fixed improvements and intermediate goods. The latter includes fertiliser, fuel, farm feed, animal health and crop protection, packing material, and maintenance and repairs.

PPI-Total includes indices of producer prices of field crops, horticulture and animal production.

PPI-Horticulture includes indices of producer prices for fruit, vegetables and viticultural products.

PPI-Fruit is the price index for producer prices for deciduous, citrus, subtropical and summer fruit.

Appendix B: Production cost template and items omitted from text

Table B.1: Typical production cost template for full bearing orchards/vine

Pre harvest costs	Post-harvest	Overhead Expenses
Fertiliser	Transport rental	Permanent Labour
Herbicides	Packaging	Scheme costs/Water costs
Pesticides	PPECB Levies	Licences and insurance
Fungicides	DFPT Levies	Other overheads
Rest breaking agents	Seasonal labour	Interest on loans
Growth Regulators	Fuel	
Consultants	Repair and maintenance	
General		
Seasonal labour		
Fuel		
Repairs and maintenance		
Electricity		
Pollination		

Table B.2: Contribution of input cost items to total production cost of different fruit during 2007 not included in main text

	Apples	Pears	Plums	Apricots	Peaches & Nectarines	Table grapes
Rest breaking agents	1.3	1.5	1.3	1.7	0.0	1.5
Growth Regulators	0.0	0.0	0.0	0.0	0.0	0.0
Consultants	0.4	0.5	0.5	0.7	0.4	0.4
General	0.1	0.1	0.1	0.1	0.1	0.4
Repairs and maintenance	1.2	1.0	1.1	1.8	1.1	3.6
Pollination	0.6	1.3	1.3	0.8	0.0	0.0
PPECB Levies	0.0	0.0	0.0	0.0	0.0	0.0
DFPT Levies	0.0	0.0	0.0	0.0	0.0	0.0
Scheme/Water costs	1.6	1.8	1.8	2.8	1.7	1.7
Licences and insurance	0.1	0.1	0.1	0.2	0.1	0.6
Interest on loans	5.4	5.3	5.3	4.9	5.3	4.0

Appendix C: “Other overheads” cost items

Other overheads = office expenses, bank charges, income tax, management hired, auditing, training, water tax, advertisements, security, membership fees, local taxes, postage & phone costs.