

Warmer temperatures, smaller fruit and possibly lower returns for strawberry producers in southern Queensland

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The profitability of strawberry growing depends on the yields of the plants, the costs of production and the prices received for the fruit.

A survey of the Brisbane Market from 2010 to 2020 indicated that average prices decreased from May to September, and only partially recovered in October. Average prices were close to the costs of production in August (\$1.39 per 250 g punnet) and below the costs of production in September (\$1.17).

Global warming is likely to reduce the size of the fruit at the end of the growing season in southern Queensland. Small fruit usually fetch lower prices than large fruit. This may contribute to lower returns for commercial producers.



Introduction

Australia produces about 94,000 tonnes of strawberries each year worth \$445 million. There was about 2270 ha under production in 2017/18.

Most of the production comes from Queensland (42%), Victoria (36%), Western Australia (11%) and South Australia (7%). There are smaller industries in Tasmania and New South Wales. Production increased by 35% from 2012/13 to 2017/18, while the value of the crop increased by 24%.

Strawberries are the second most important fruit after banana in Australia and are the most important of the berry crops. A range in geography, climates, cultivars, and production systems allows for cropping across the whole year.

Producers in south-east Queensland supply fruit from May to October (winter crop), while producers in southern Queensland (Granite Belt) and southern Australia supply fruit from October to May (spring, summer and autumn crops). There are about 260 commercial growers across the different production areas.

The profitability of strawberry growing depends on the yields of the plants, the costs of production and the prices received for the fruit. We were interested in determining whether there have been changes in the prices for strawberries in the wholesale market. Information was collected on the throughput and prices for strawberries during the main season in Queensland at the Brisbane Market. Strawberries encounter significant competition during this period from other popular berries, including blueberries, blackberries and raspberries.

The results of the analysis showed that average prices were close to the costs of production in August and below the costs of production in September. Higher temperatures under global warming are likely to reduce the size of the fruit in Queensland. Small fruit usually fetch lower prices than large fruit. These changes in fruit size will put more pressure on profitability of the industry at the end of the growing season.

What we did

Information was collected on the throughput and prices for strawberries consigned to the Brisbane Markets from 2010 to 2020 during the main season in Queensland from May to October. There are small shipments of fruit in May and October from Victoria, South Australia and Western Australia.

The data were supplied from Market Information Services (www.marketinfo.com.au). Limited information is available on prices in the Sydney and Melbourne markets, but these markets do not include data on the volume of sales each week.

The data were analysed to determine the average throughput and price across different years (2010 to 2020) and different months (May to October). The relationships between price and throughput were examined over the different time periods.

What we found

There were variations in the throughput and prices for strawberries in the Brisbane Market across the different years and months.

About 5000 to 6000 tonnes of fruit were sold from May to October each year from 2010 to 2019, with a lower volume in 2020 (Figure 1). Throughput increased from May to August and then decreased in September and October. There was no clear trend in volume across years over the study period from 2010 to 2020.

Average prices from May to October ranged from \$1.68 to \$2.23 per 250-g punnet (Figure 2). Prices were above the long-term average (\$1.97) from 2010 to 2016 and below from 2017 to 2020. The average price decreased as the volume increased from May to August/September, and only partially recovered with a lower volume in October. Average prices were close to the costs of production in August and below the costs of production in September.

Across all years and months, there was a strong relationship between the average price and the volume of sales ($P < 0.001$, $R^2 = 0.53$, $N = 66$). For instance, a consignment of 250 tonnes per month was associated with a price of \$4.25, whereas a consignment of 1000 tonnes per month was associated with a price of \$1.00. This price versus supply curve is common across many agricultural commodities.

There was no clear pattern in the relationship between average price and the volume of sales across different years from May to September (linear decrease in price as supply increased).

The price received for the fruit decreased by \$0.15 to \$1.28 for each 100 tonnes increase in supply every month. The average price reduction was $\$0.37 \pm 0.09$ and the median price reduction was \$0.32.

Implications for commercial strawberry production

There were variations in the throughput and prices for strawberries in Brisbane across different years and months. The local market was sensitive to changes in the supply of fruit. The volume of fruit supplied to the market was relatively stable over the study period, with only a lower volume in 2020.

In contrast, prices were above the long-term average from 2010 to 2016 and below from 2017 to 2020.

Throughput increased over the season from May to August and then decreased in September and October. The average price decreased as the volume increased from May to August/September, and only partially recovered in October. Average prices were close to the costs of production in August (\$1.39 per 250-g punnet) and below the costs of production in September (\$1.17).

Strawberries encounter significant competition during this period from other popular berries, including blueberries, blackberries and raspberries. Further research is required to determine better ways to market the crop in August and September.

Global warming is expected to decrease fruit quality towards the end of the season in Queensland. Small fruit fetch lower prices than large fruit. This may put more pressure on the profitability of the local industry.

Figure 1. Variations in the supply of strawberries to the Brisbane Markets from 2010 to 2020 during the main season in Queensland from May to October. There are small consignments of fruit in May and October from Victoria, South Australia and Western Australia.

Data are from Market Information Services (www.marketinfo.com.au).

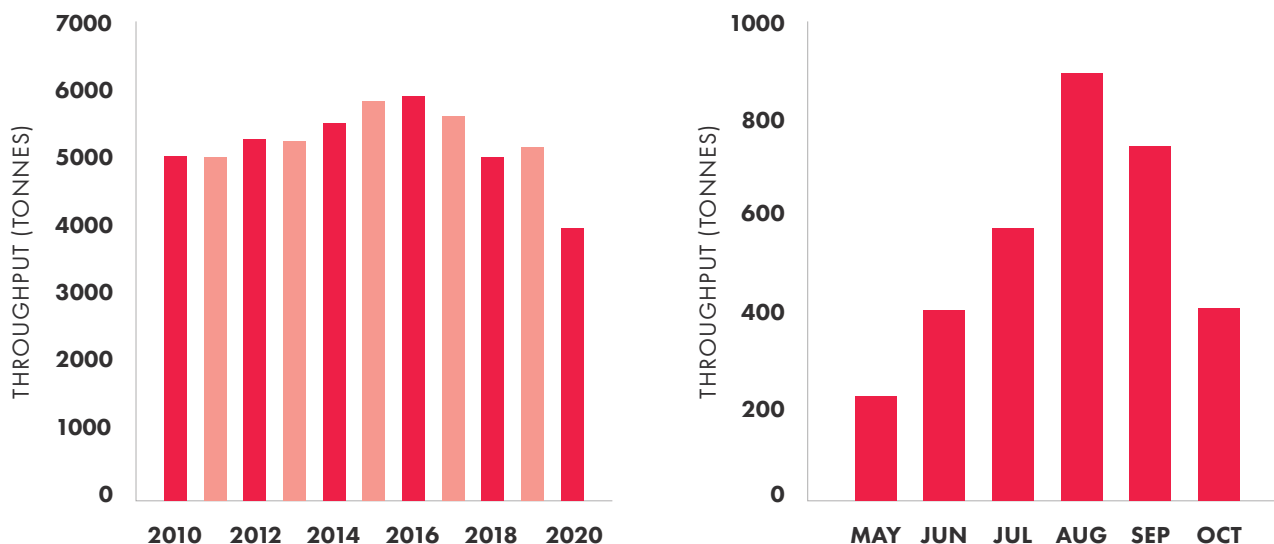
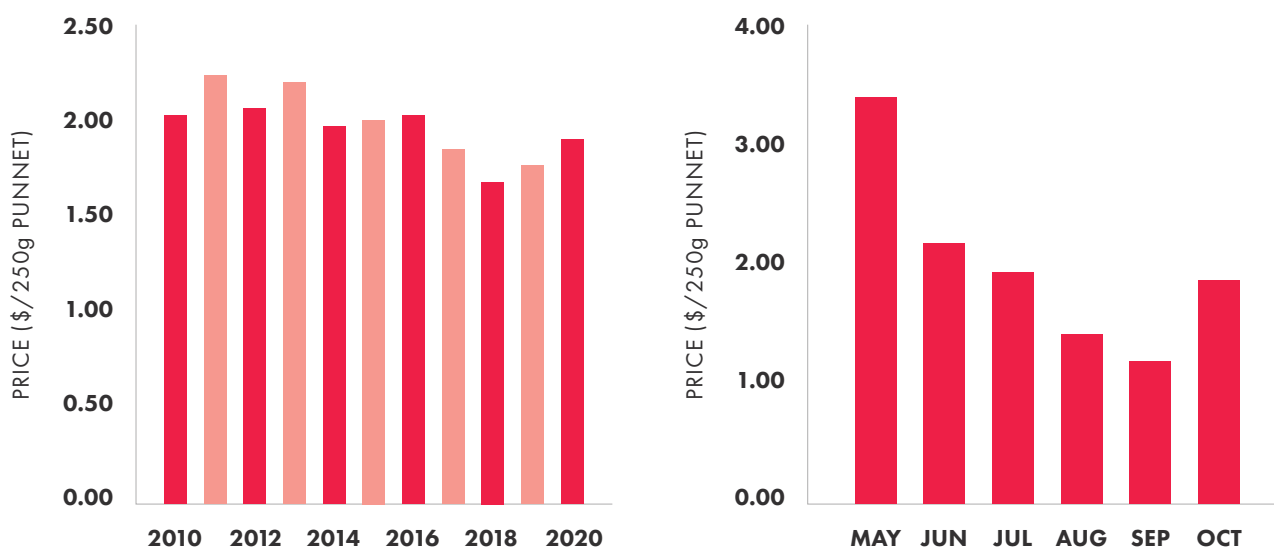


Figure 2. Variations in the average price of strawberries in the Brisbane Markets from 2010 to 2020 during the main season in Queensland from May to October. There are small consignments of fruit in May and October from Victoria, South Australia and Western Australia.

Data are from Market Information Services (www.marketinfo.com.au).





Plants with small fruit are more expensive to pick than those with large fruit. Photo credit: Chris Menzel

Conclusions

About 5,000 to 6,000 tonnes of strawberries were sold in Brisbane each year from May to October from 2010 to 2019, with a lower volume in 2020. Throughput increased from May to August and then decreased in September and October. Average prices across the years ranged from \$1.68 to \$2.23 per 250g punnet. Prices were above the long-term average (\$1.97) from 2010 to 2016 and below from 2017 to 2020. The average price decreased as the volume increased from May to August/September, and only partially recovered in October. Average prices were close to the costs of production in August (\$1.39) and below the costs of production in September (\$1.17). Research is required to determine better ways to market the crop in August and September, especially with global warming likely to reduce fruit size, marketing potential and prices later in the season. Efforts also need to be made to develop heat-tolerant cultivars and other strategies to mitigate against global warming.

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