

Prices, Volumes and Promotions in the Fresh Strawberry Market

by
Jessica Z. Jiang and Rachael E. Goodhue

Retailers prefer to promote fruits during their peak seasons. For strawberries, production and promotion peak in April and May. To increase demand for still-substantial strawberry volumes later in the season, the strawberry industry may wish to encourage joint promotions with other fruits. Ê

In fresh produce markets, producers and retailers' marketing risks are linked. Retailers wish to sell produce when it is still high quality. Producers wish to move their perishable product while it is still marketable. Timely, effective marketing is essential not only for the success of food retailers, but also for the success of producers and shippers. Closer coordination among shippers, producers and retailers may increase marketing effectiveness. This research is designed to increase strawberry producers and shippers' understanding of the factors influencing retailers' product promotion decisions and the demand for strawberries, so that they will be better able to make their own production and marketing decisions.

This research links observations from interviews with produce managers in local supermarkets in Davis, CA, with data regarding strawberry prices, volumes and promotions. Weekly fresh strawberry volumes and prices were obtained from various issues of *The Berry Report*, issued by the USDA's Federal State Market News Service. Information for *The Berry Report* is based on telephone surveys with shippers in the four California strawberry production regions and in Florida. Data regarding the percentage of market on ad were collected by Leemis Marketing and provided by the California Strawberry Commission. This variable measures the weekly percentage of retailers running strawberry promotions in their weekly newspaper supplements, and is based on monitoring of retailers in fifty major metropolitan regions. All data were collected over a nine-year period: 1990-1998. Since advertising data are only available for the months of March through September, we limit our analysis to this time period. These months account for the majority of fresh strawberry production in California.

Figure 1 indicates the average total volume of California strawberries produced each month in 1990-1998. Volume increases sharply from March to April, and increases further in May. It then slowly declines until September. Other things being equal, we would expect higher strawberry volumes to be associated with lower prices. Figure 2 reports the average price per pound of fresh California strawberries per month in 1990-1998. As expected, relatively low volumes in March are associated with relatively high prices. However, prices do not increase after June as volumes decline. Instead, price remains relatively constant.

The behavior of prices and volumes suggests that there are other factors influencing the demand for strawberries. One possible factor may be the availability of other fresh fruits. Strawberries are a relatively early fresh fruit. As cherries, peaches, plums, and other fresh fruits become available in June and July, consumers are less interested in purchasing strawberries to meet their fresh fruit needs. Thus, a lower price is needed in order to sell a given amount of strawberries in July than would be needed in April.

Here, we focus on a related factor: how do retailers' promotion decisions influence the price of fresh strawberries? The number of weeks that

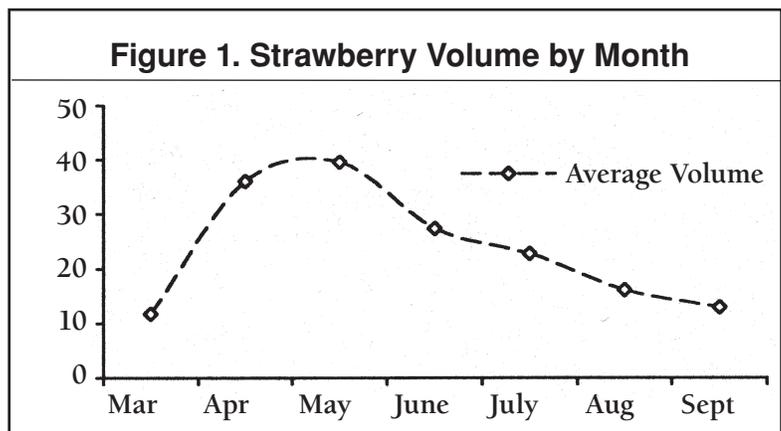
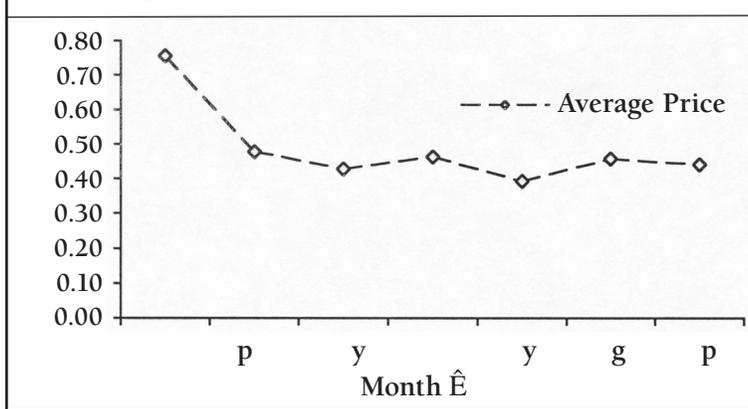


Figure 2. Strawberry Price by Month

retailers promote strawberries varies between four and fifteen weeks in an average year, according to interviews. Like volumes, promotions tend to be seasonal. Since there are more strawberries available in the late spring and early summer, retailers tend to promote strawberries strongly at that time to attract customers to come into their stores.

Figure 3 illustrates that April and May are the peak promotional periods for strawberries, based on national data. Promotions decrease in August and September, when fewer strawberries are available. Based on this figure alone, it is difficult to infer any effect of promotions on prices, since the number of promotions follows the same pattern as fresh strawberry volume does.

Industry members hypothesize that more promotions increase the farm gate price of strawberries, and therefore, fewer promotions mean a lower price. However, this is not always true. Figure 4, which plots price according to the percent of market on ad, illustrates this point. For example, if we compare the price (\$0.45) for 8.5

percent market on ad versus the price (\$0.45) for 33.5 percent market on ad, we see that more advertisements per se do not increase the price of strawberries. This may be due to the confounding effects of volume, the effects of increases in the supply of other fresh fruits, or both. Figure 4 does not control for differences in these variables.

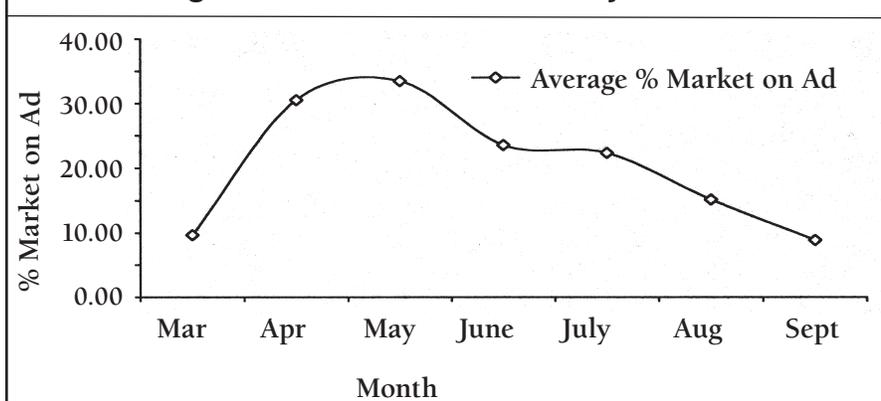
According to interviews, retailers prefer to promote strawberries during the peak harvest season, as suggested by Figure 3. This preference is confirmed in Figure 5, which shows that more promo-

tions are associated with a greater volume of strawberries. One hypothesis suggested by Figures 3 to 5 is that promotions increase the price of strawberries by encouraging consumers to purchase more when volumes are high. That is, promotions prevent the price of strawberries from declining as far as it would in the absence of the promotions. This is consistent with the percent of market on ad increasing, but maintaining a constant price, as shown in Figure 4. This possibility is an important one; following the peak harvest period, substantial volumes of strawberries are still produced in June and July, as seen in Figure 1.

The hypothesis that promotions mostly increase the price of strawberries at their seasonal peak and later in the season when volume is relatively high is supported by statistical analysis conducted by the strawberry research group in the agricultural and resource economics department at UC Davis. Strawberry advertising, measured as percent market on ad, had a positive effect on the price received by Watsonville strawberry growers, who produce at

the season peak and later, but did not affect the price received by growers in other regions, who tend to sell earlier in the season when strawberry prices are higher. (Results from Carter, Chalfant, Goodhue, and Xia. See the Spring, 1999 issue of *ARE Update* for a description of the seasonal pattern of strawberry production by Carter, Goodhue and Han.)

This relationship between promotions and prices suggests

Fig 3. Percent Market on Ad by Month

that during the period we analyzed, promotions primarily increased the price of strawberries during the peak harvest period and, perhaps, later in the season. That is, promotions raised prices when volume was high. Due to the pattern of total volume shown in Figure 1, the price of strawberries may increase if retailers undertook more promotions late in the season, when strawberry volumes are still substantial.

Interviews with industry participants indicate that it is difficult to induce retailers to plan promotions for July, August and September (although recently they have had some success in convincing them to do so). This observation is consistent with information from retailers: retailers prefer to promote all fresh fruits, not only strawberries, during their peak harvest seasons. Thus, as the year progresses and other fruits come into season, retailers choose to promote these other fruits instead of strawberries.



Retailers prefer to promote strawberries during the peak harvest. This study suggests that joint promotions with other fruits may increase strawberry sales throughout the lengthy harvest season.

Photo by Rachael Goodhue

Our analysis provides a potential strategy for strawberry growers to pursue in order to increase their revenues. Due to retailer strategies, it may

prove difficult to further increase promotions later in the season. Instead of promoting strawberries, retailers prefer to promote other fruits. We recommend that in addition to negotiating with retailers to increase their late season promotions, the strawberry industry attempt to engage in joint promotions with other fruits. For example, some retailers include recipes in their flyers. A recipe for strawberry-peach pies could be paired with promotions for those fruits. This strategy would recognize retailers' preference for promoting new fruits that are currently at their seasonal peaks, but would also have the potential to increase strawberry sales and prices.

Rachael Goodhue is an assistant professor in the Department of Agricultural and Resource Economics at UC Davis. She can be contacted by e-mail at goodhue@primal.ucdavis.edu. Jessica Jiang is a M.S. student in the ARE department and an intern at the USDA Risk Management Agency. The research reported here originated as a project conducted under the auspices of the UCD Mentoring Undergraduate Research in Agriculture, Letters, and Sciences program when Jiang was a senior. This research received funding from the California Strawberry Commission and the Giannini Foundation of Agricultural Economics.

Figure 4. Price by the Percent Market on Ad

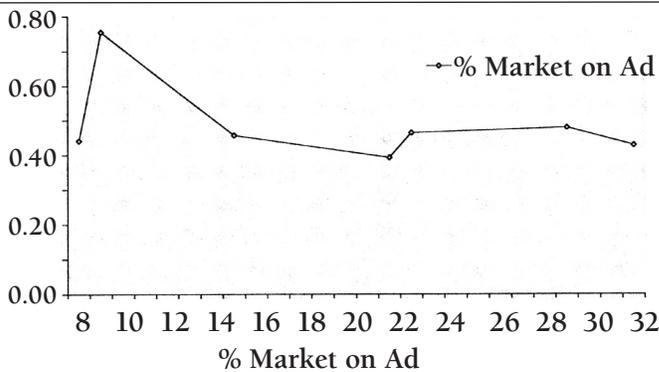


Figure 5. Percent Market on Ad by Volume

