

# Fruit and nut maturation time

*With warming air temperatures, certain varieties of fruits and nuts in the Central Valley are maturing more quickly, leading to earlier harvests.*



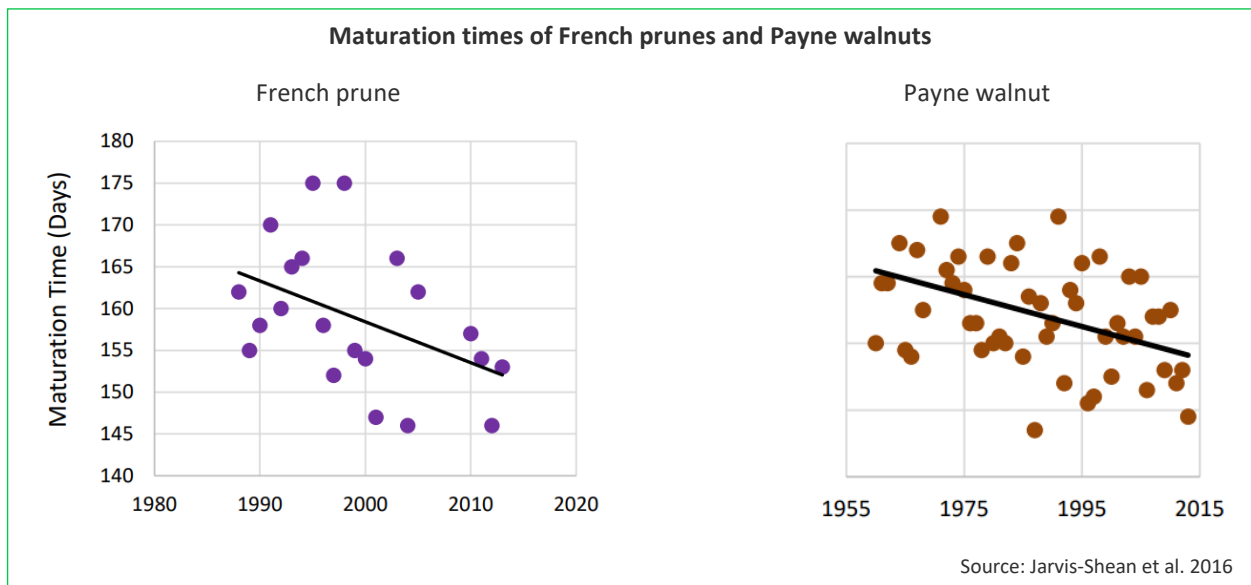
California prunes and one variety of walnuts are maturing more quickly in parts of the Central Valley, causing harvest times to occur earlier than before. Warmer temperatures can hasten fruit and nut development and shorten their “maturation time,” the amount of time it takes for a fruit or nut to fully mature once the tree starts to flower or bud leaves.



Farmers face unique challenges when crops mature more quickly. They have less time to pick the crops in a timely manner. In addition, crops that develop faster are often smaller and priced lower. With continued warming, more crops may be affected, leading to significant economic impacts on this multi-billion dollar industry. Prunes and walnuts, in particular, are among the state’s major crops. California growers produce about 96 percent of the prunes and 99 percent of the walnuts in the United States.

## What does the indicator show?

The graphs below show maturation times for French prunes (the major prune in California) grown in Parlier (Fresno County) and Payne walnuts grown in Davis (Yolo County). Prune maturation time decreased by about 12 days from 1988 to 2013. Similarly, the maturation time for the Payne walnut decreased by about 11 days since 1960. Changes in maturation time occurred in tandem with rising temperatures. Over the past three decades, air temperatures have steadily increased in Parlier and Davis.





### Why is this indicator important?

Shorter maturation times may adversely impact the yield of some of the state's most valuable crops. In general, fruits and nuts that develop quickly tend to be smaller. Because small fruits and nuts do not command the premium price that larger ones do, this can lead to a significant loss of revenue for growers and suppliers.

Failure to harvest and process crops in a timely manner could mean poor crop quality or lower yield. When crops mature faster, growers need to pick them before they ripen too much or, worse, rot. This poses a challenge during harvest season, when growers draw on a limited supply of workers and equipment.



Photo: Katherine Jarvis-Shean

Interestingly, earlier maturation may benefit walnuts. Walnuts are often harvested in October – the beginning of the rainy season in the Central Valley. Rain immediately before or during the harvest can make it difficult to properly dry the nuts, leaving them vulnerable to mold growth. Earlier maturation may prevent certain walnuts from encountering rain (and thus mold) during harvest.

As the climate continues to warm, researchers expect that maturation times for more fruit and nut varieties will likely shorten, presenting a growing threat to the state's fruit and nut industry.

For more information about this and other climate change indicators, visit:

<https://oehha.ca.gov/climate-change/report/2018-report-indicators-climate-change-california>

