

# Pinot noir grapes reveal 700-year climate record

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Credit: JPC24 via flickr

The French call pinot noir "the noble grape" and have long considered it a source of inspiration. Now it can also be appreciated as the reason for an extensive, localized climate record.

A study found a close match between pinot noir grape harvest dates in Burgundy, [sea surface temperature](#) trends and the Western European climate. The relationship could be used to forecast harvest dates months in advance.

Yves Turre, from the Lamont Doherty Earth Observatory in Palisades, N.Y. and the French meteorological service, Meteo-France, in Toulouse, presented research on the significance of a nearly 700-year record of

pinot noir grape harvest dates to an audience of [climate scientists](#) Tuesday during a meeting of the [American Geophysical Union](#) in San Francisco.

The records began with monks in the 14th century, and for nearly 700 years people in Burgundy kept records of the date when the grapes were first harvested. Until 2007, vineyards were required to refrain from harvesting their pinot noir grapes until it was deemed time by local jurisdictions.

Tourre focused on the record of this first harvest date from the 17th century to 2007 when the enforcement of the regulations ended. He said that now, at harvest time, "it becomes anarchy in Burgundy."

In the local area, [winter temperatures](#) showed very little trend of increase or decrease from the beginning of the record until 1988, Tourre said. Since that time, "winters have been milder," he said in his presentation.

The preceding winter greatly impacts the yield of the next summer's grape harvest. The growing period is roughly from April to September, or about 130-140 days, said Tourre.

Tourre looked at sea surface temperature records as they related to grape harvest dates and identified a horseshoe-shaped pattern of [ocean circulation](#) that occasionally appears in the North Atlantic and influences temperatures around Western Europe. When the surface temperature of the Eastern Atlantic ocean is higher, it translates to higher temperatures in France during the growing period for the pinot noir grape.

This spring, Tourre saw the pattern and therefore predicted that the 2011 harvest would be early -- and he was right. The harvest, no longer determined by official decree, began on August 20, in contrast to a typical date for the harvest to begin in September, he said in an

interview.

The pinot noir may be special, but is also very sensitive, vulnerable to weather variability that interferes with the production of high-quality, high-yield harvests. According to the paper about the research, published earlier this year in [Climate Research](#), increasing variability of weather may, over time, drive the grape out of Burgundy.

The pinot noir grape is unique, as its sensitivity makes it crucial to consider the acidity, skin thickness, and other qualities before harvesting is advisable. Because the grape is so fickle, Tourre said that this type of harvest record for other grapes does not provide similarly useful information.

According to Tourre, this year the high spring temperatures and combination of July rainfall and August sunshine helped the grapes mature to excellent quality. Tourre suggested in his presentation that people should buy a bottle of 2011 pinot noir to enjoy in 10-15 years from now.

The recognition of this pattern could become influential to area wine producers going forward.

"You can have people in Burgundy looking at the sea surface temperature to add another variable to determine the harvest," Tourre said.

In a subsequent presentation another scientist, Melissa Kenney from the National Oceanic and Atmospheric Administration, said that as scientists they are all envious of a 700-year long [climate record](#) like that provided by the pinot noir grape harvest records.

"Hopefully, people are going to enjoy pinot noir even more now," said

Tourre.

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