

Experiencing Climate Change on the Farm: How Specialty Crop Producers are Adapting in Oregon

Molly Bergum¹

¹University of Minnesota-Twin Cities

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Abstract

The production of specialty crops in the Pacific Northwest is an economically important industry and one that is likely to be heavily impacted by rising temperatures and decreasing snowpack associated with climate change. The purpose of this study was to interview small-scale specialty crop farmers in Oregon's Willamette Valley and Central Coast Range to understand how they are experiencing climate change and what information they are using to make farm-management decisions related to the climate. Semi-structured interviews were conducted with seven specialty crop farmers on farms in Corvallis, OR or at the Corvallis Farmers' Market. The farmers believe that factors such as high temperatures earlier in the growing season, hotter temperatures, increased weather variability, and decreased precipitation are impacting their farms. The interviewed farmers employ multiple strategies to manage the risk of their work, which include incorporating heterogeneity and flexibility into their management, using irrigation and sheltering infrastructure to control the microclimates for crops, and selecting different crops or crop varieties. When considering the information sources farmers use when making decisions about climate and weather, some farmers use short-term weather forecasts, but none rely on longer-term forecasts. As the farmers in this study are all concerned about climate change, having accessible information for the upcoming season and future climate could be helpful if they believe that long-term forecasts are credible.

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Molly Bergum¹
Mentors: Caitlin Simpson² and **Kathie Dello**³

¹National Oceanic and Atmospheric Administration (NOAA) Ernest F. Hollings Scholarship Program, ²NOAA Climate Program Office, Regional Integrated Sciences and Assessments, and ³Oregon State University (OSU), Oregon Climate Change Research Institute

Introduction

Regional significance of climate change to specialty crop production:

- Specialty crop production is an economically important industry to Oregon, earning \$2.16 billion in sales in 2017.⁵
- Climate change leads to higher temperatures and less water during the growing season.^{3,4}
- Long-term forecasts are available but often not utilized.^{1,2}

Research questions:

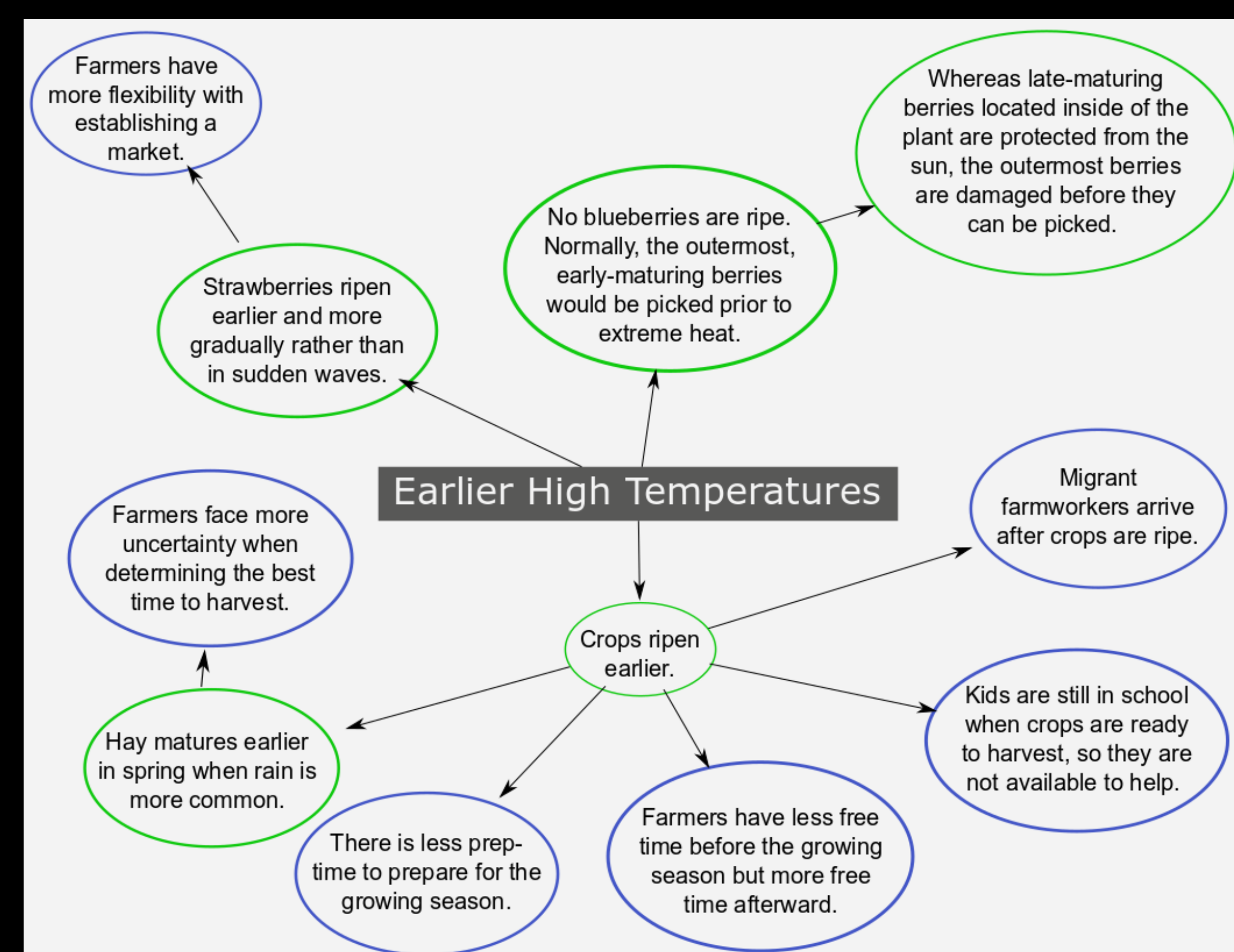
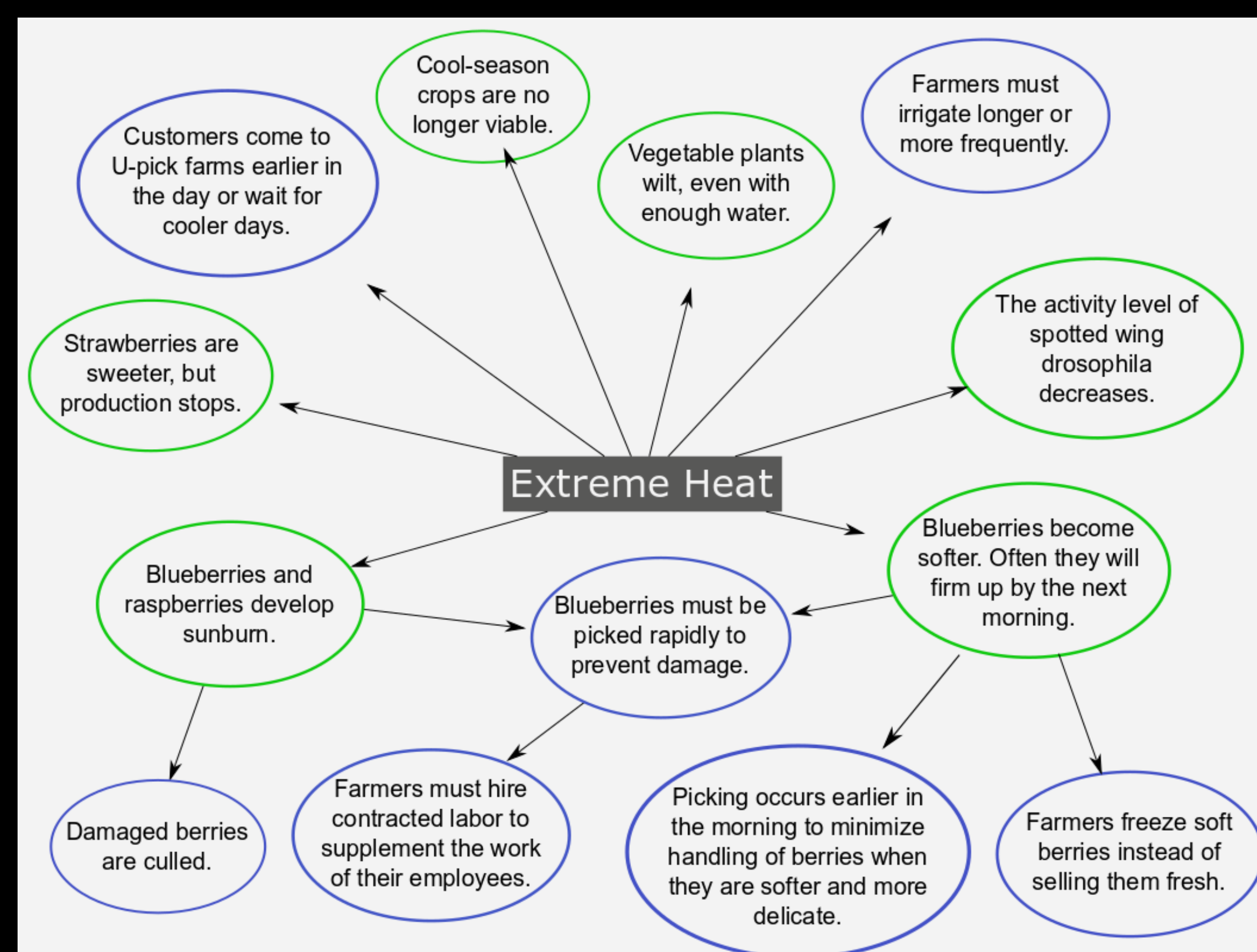
- 1) How are small-scale specialty farmers in Oregon experiencing climate change?
- 2) How are farmers making climate-related management decisions?

Methodology

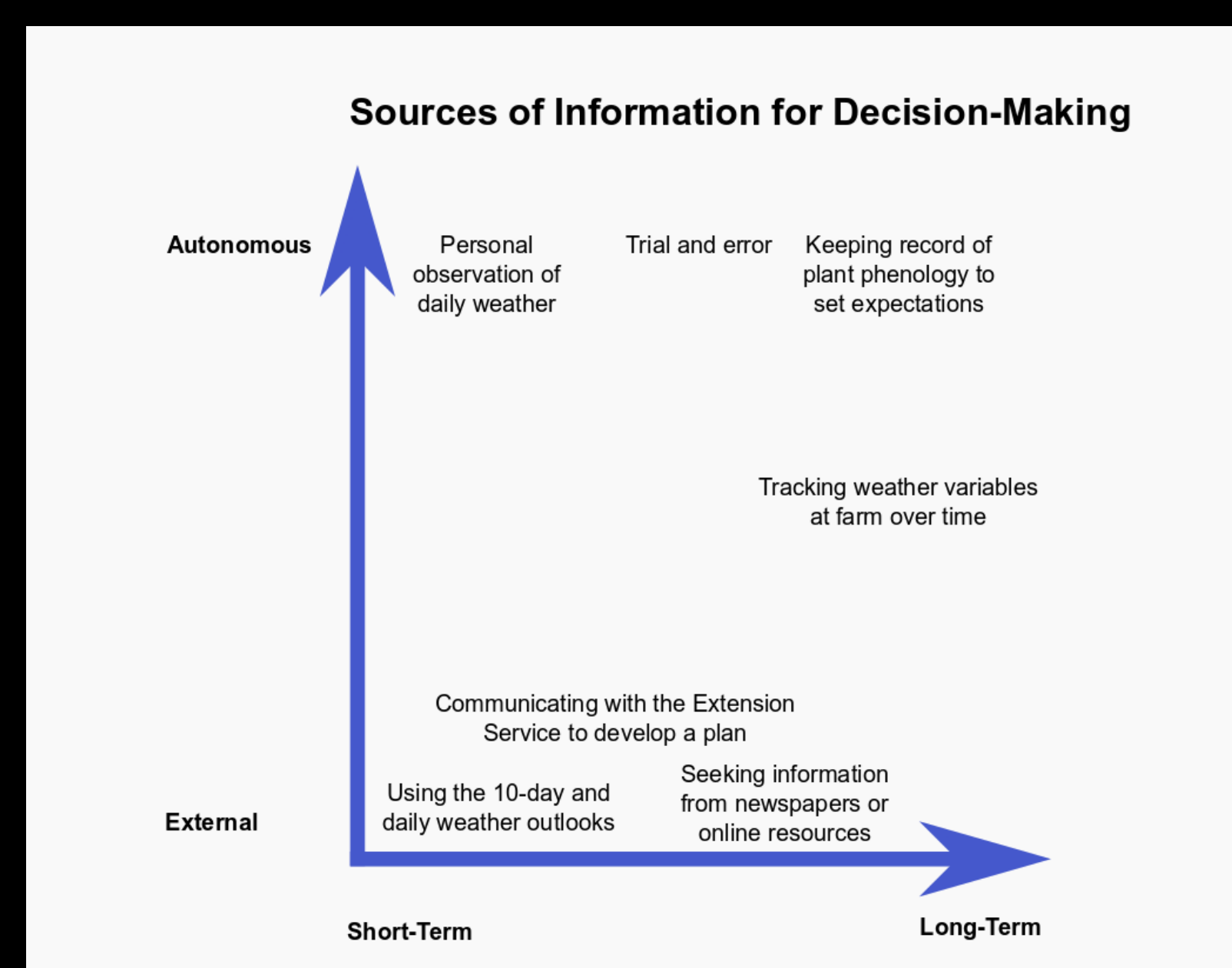
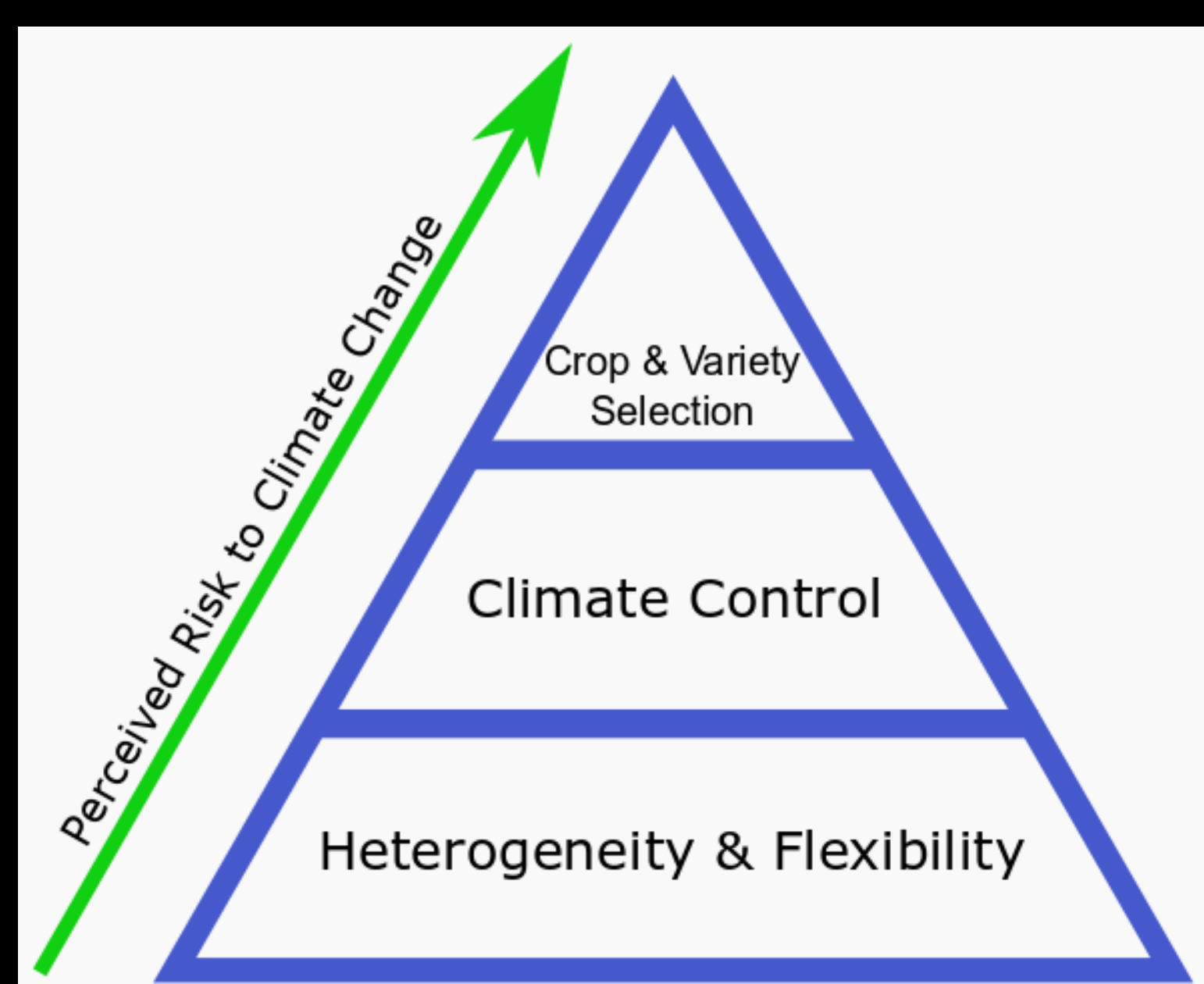
- Visited the Corvallis Farmers' Market and farms in Corvallis, OR
- Conducted seven semi-structured interviews
- Recorded, transcribed, and coded interviews

Results

"We normally start at 6:30 in the morning. If it's really hot, we start picking at 6. We have to stop earlier. There's a point where berries can be softer because they're warm; you leave them on the bush, and they'll be fine in the morning. But there's also a point where if we don't get them off, they're gonna cook, and they won't be as good." (Farmer 5)



"We were thinking of doing raspberries in tunnels because the raspberries are so fragile. They get sunburned." (Farmer 7)



"I wouldn't trust [long-range forecasting tools] very much because I think there is too much uncertainty in the long-range forecast type things because you know, even in our 10-day forecast, they change everyday. You look at it one day, and it will say, 'Oh, rain by Friday' and then the next day, 'Nope, no rain.'" (Farmer 2)

Conclusions

- Farmers are observing signs of climate change, including more extreme heat, hot temperatures earlier in the growing season, drier growing seasons, and more erratic weather.
- Farmers utilize many strategies to manage risk, which can be applied to risks associated with climate change.

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Citations

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⁴Mote et al. (2019). Fourth Oregon climate assessment report. *Oregon Climate Change Research Institute*.
⁵USDA. (2017). Census of Agriculture - Oregon State Profile.