



Climate of the Santa Lucia Highlands

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ADVANCED VITICULTURE
TECHNOLOGY FOR WINEGROWING



Climate as *terroir*

► Climate versus weather...

Climate is what we expect; weather is what we get.

Mark Twain





Climate as *terroir*

Psychology

Climate

Vineyard Design

Soil

Cultural Practices





Important Climatic Parameters

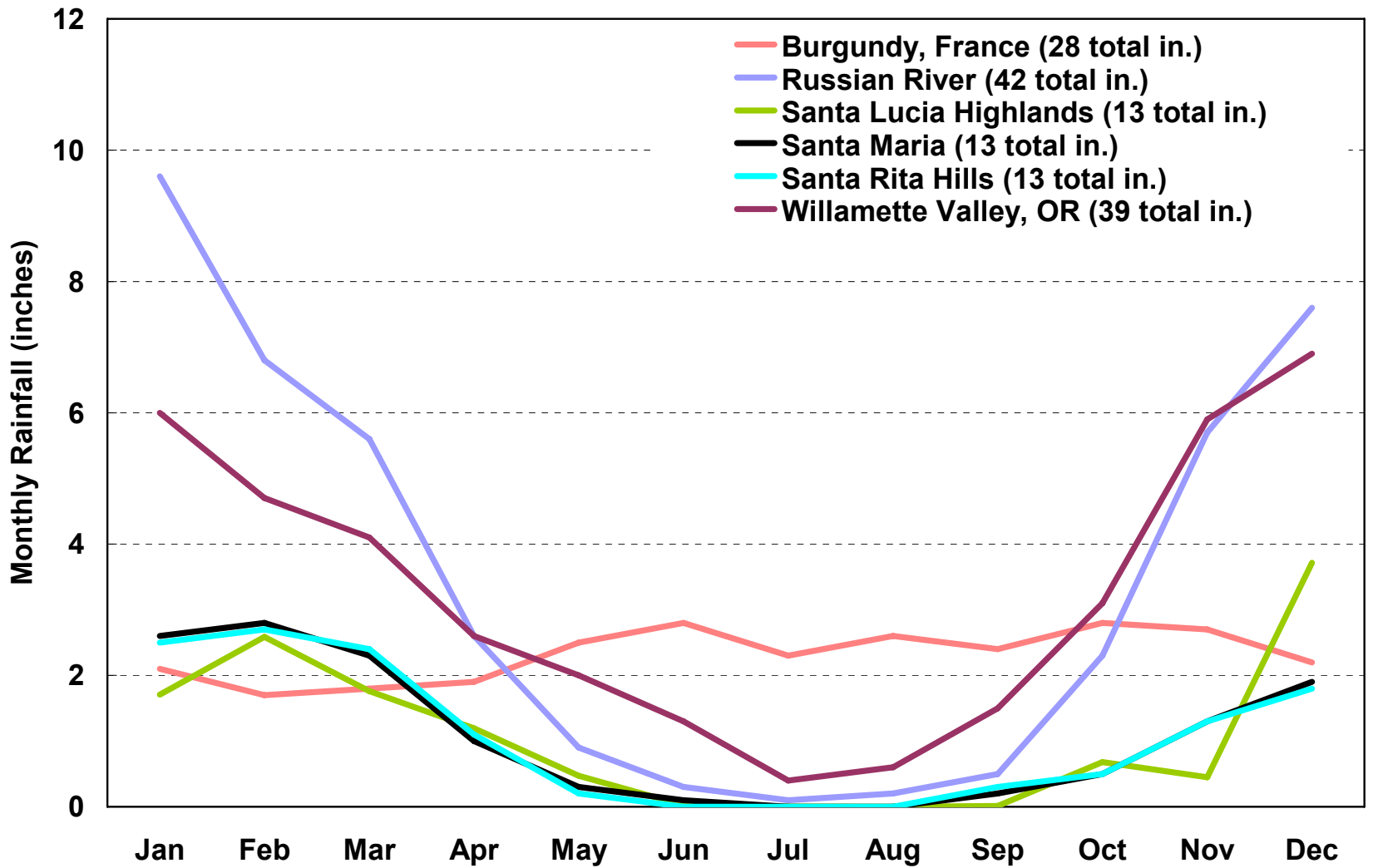
- ▶ Precipitation
- ▶ Sunshine
- ▶ Fog
- ▶ Wind
- ▶ **Temperature**





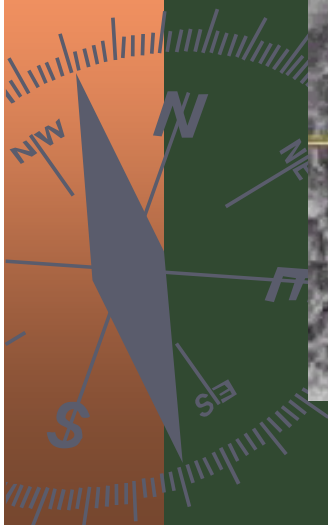
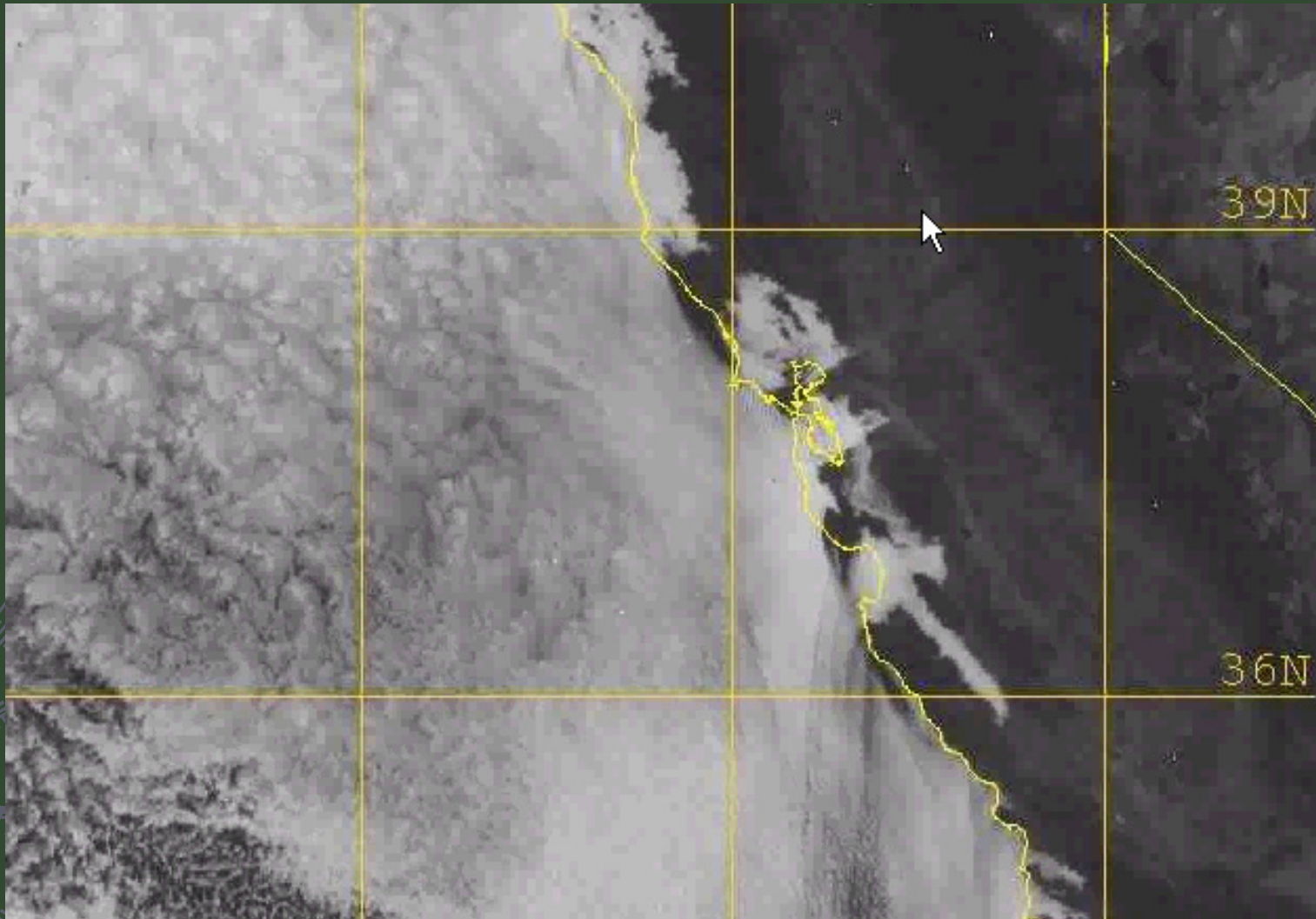
Precipitation

Monthly Precipitation





Fog





Temperature

- ▶ Vine and fruit development are tightly linked to temperature
- ▶ Fruit development and composition at harvest are strongly affected by temperature





Aspects of Temperature

- ▶ Heat summations (degree days)
- ▶ Maxima / Minima
- ▶ Extremes (especially high)
- ▶ Diurnal temperatures

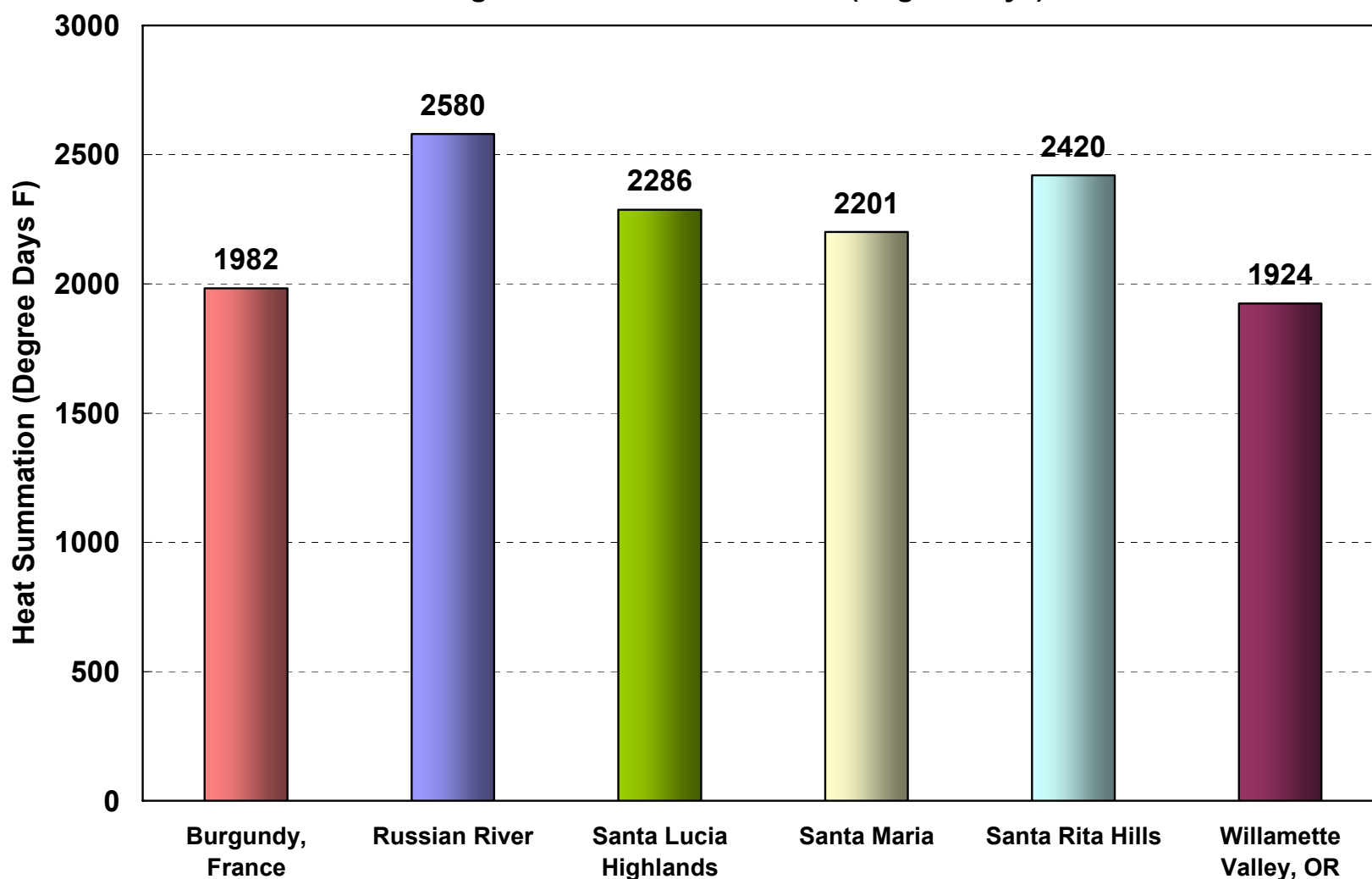




Santa Lucia Highlands
Wine Experts

Heat Summations

Growing Season Heat Summation (Degree Days)

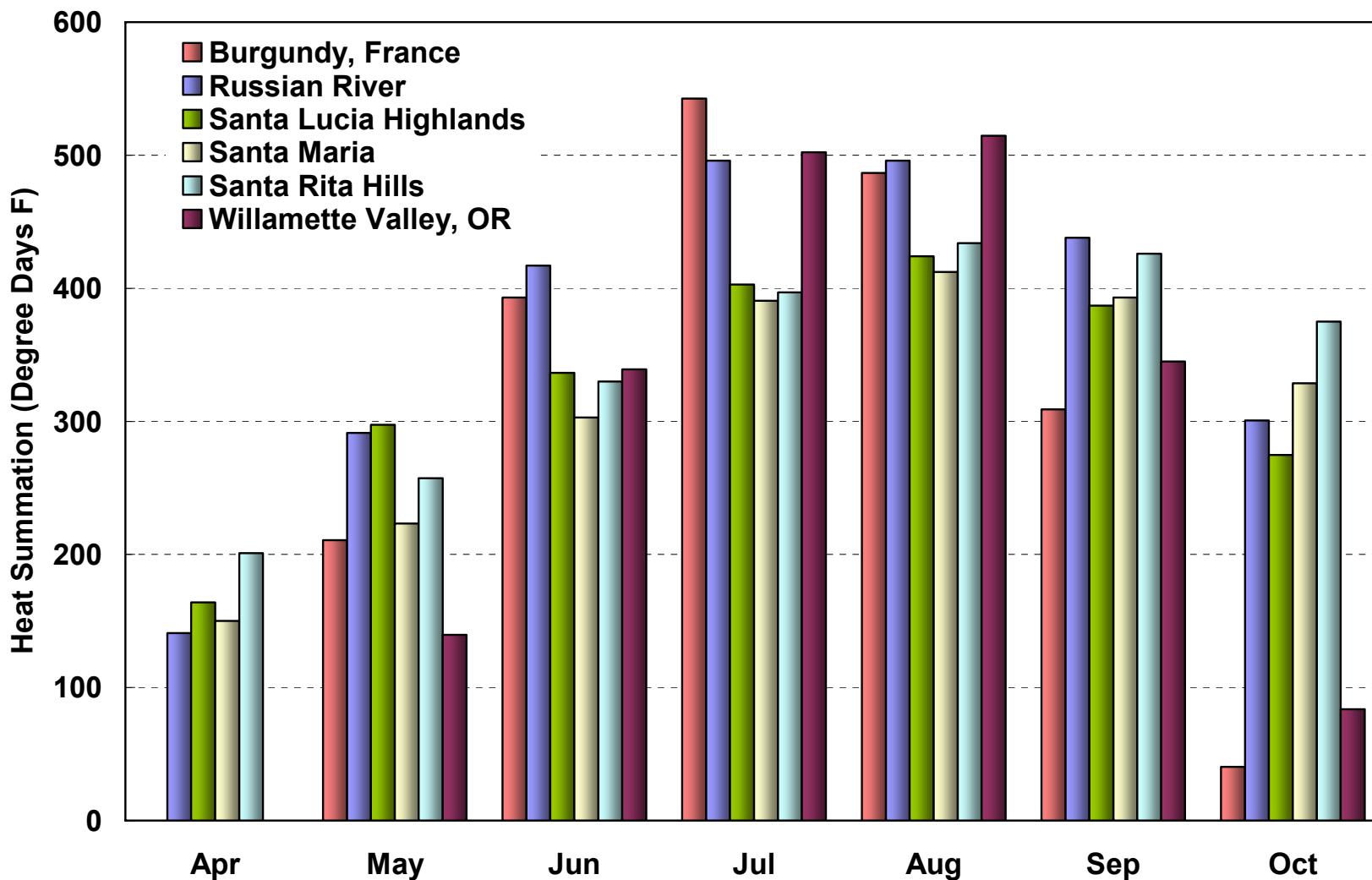




Santa Lucia Highlands
Wine Artisans

Heat Summations

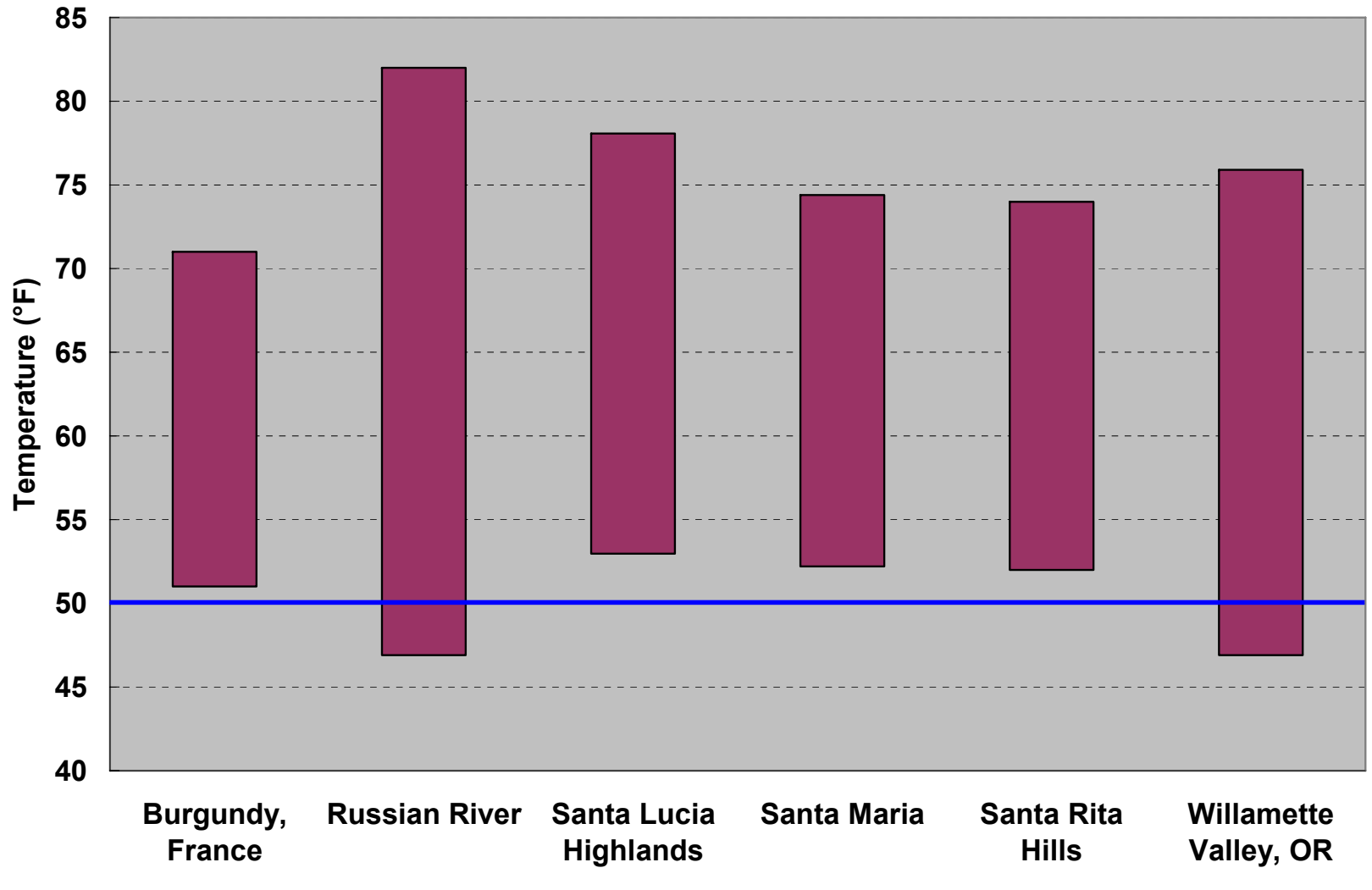
Monthly Heat Summation (Degree Days)





High / Low Temperatures during Ripening

Average Daily Temperature Max/Min during September





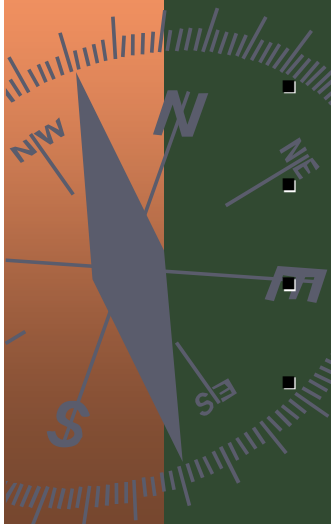
Berry Ripening: Two distinct processes

▶ Sugar Accumulation

- Function of photosynthesis, leaf area, water status, crop load, weather (light and temp.)

▶ “Flavor” Ripening

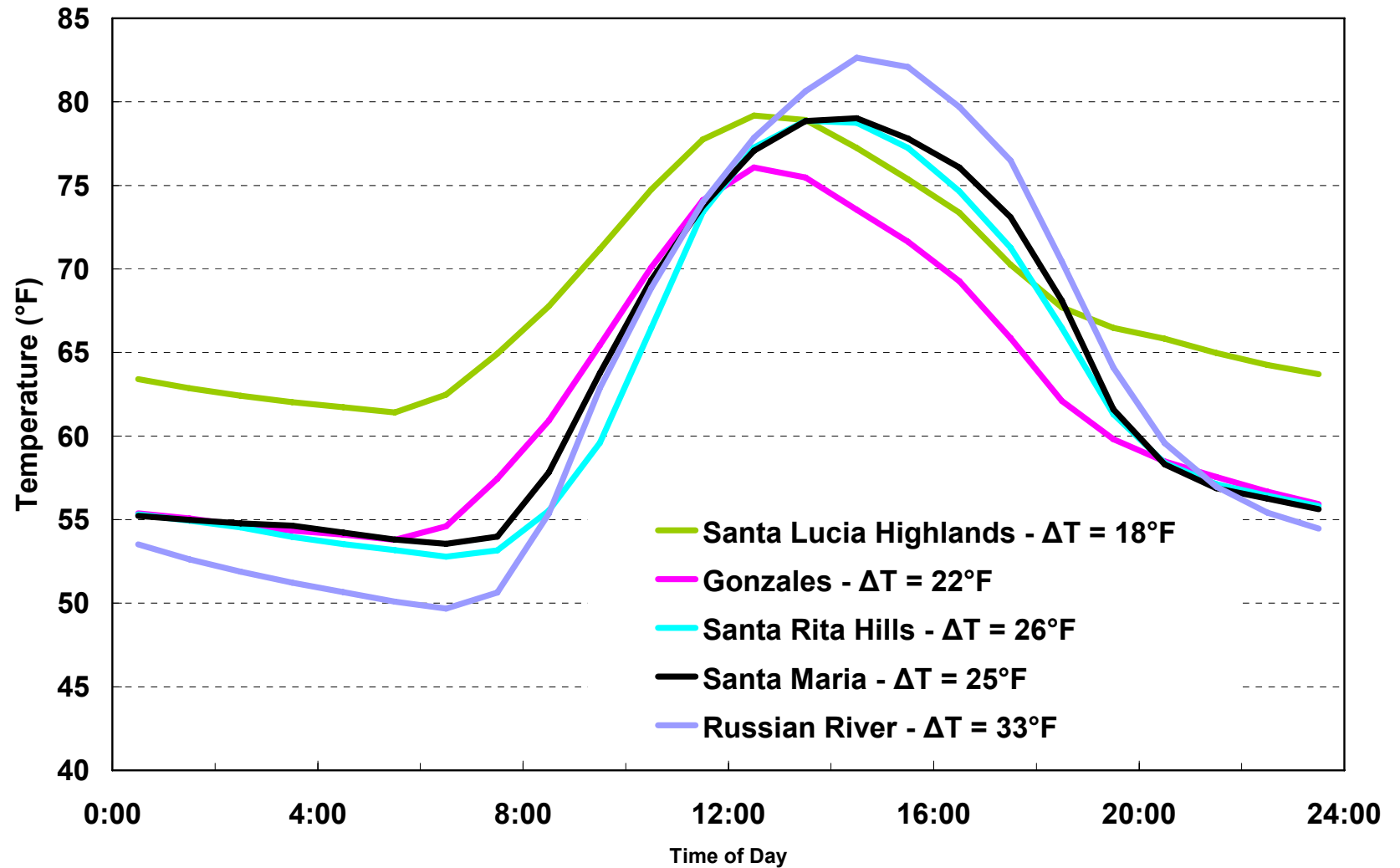
- Flavor and aroma precursors
- Tannin
- Anthocyanin
- Acids, pH
- Cell wall breakdown - pectins
- Function of berry temperature, primarily





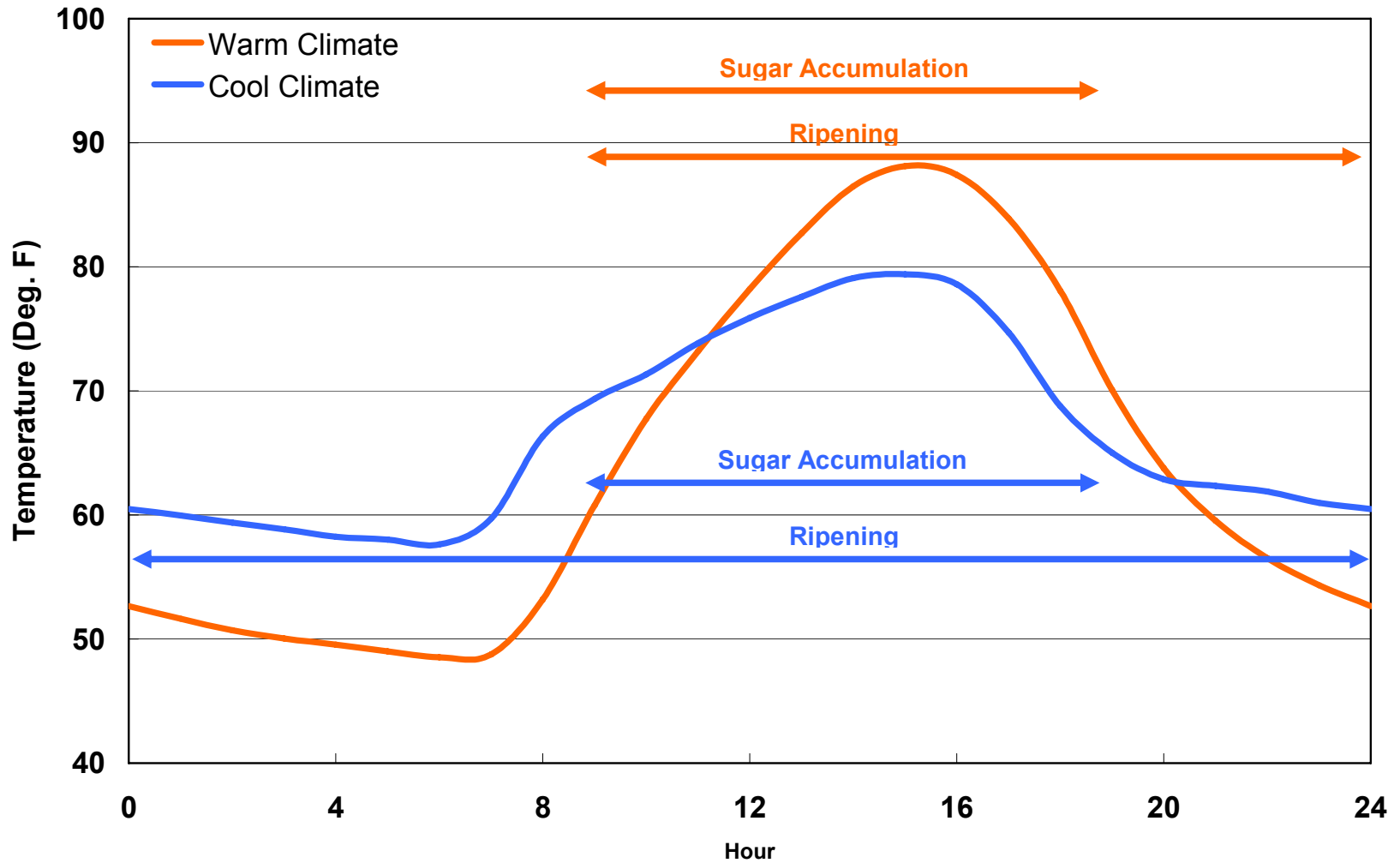
Diurnal Temperature during Ripening

Average Diurnal Temperature Curve during Ripening



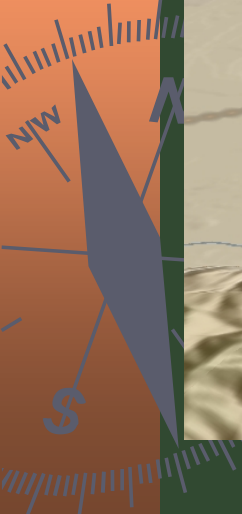
Importance of Night Temperatures

Comparison of Fruit Ripening Processes in Contrasting Climates





Position and Elevation affect Climatic *Terroir* of SLH





Climatic Characteristics of SLH

- ▶ Moderate daytime temperatures with cool, not cold, night temperatures
- ▶ Lack of extreme temperature events
- ▶ Fog moderates temperatures
- ▶ Wind moderates temperatures and inhibits sugar accumulation
- ▶ Arid climate with ample water supply for irrigation
- ▶ A unique climate perfectly suited for Pinot Noir





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