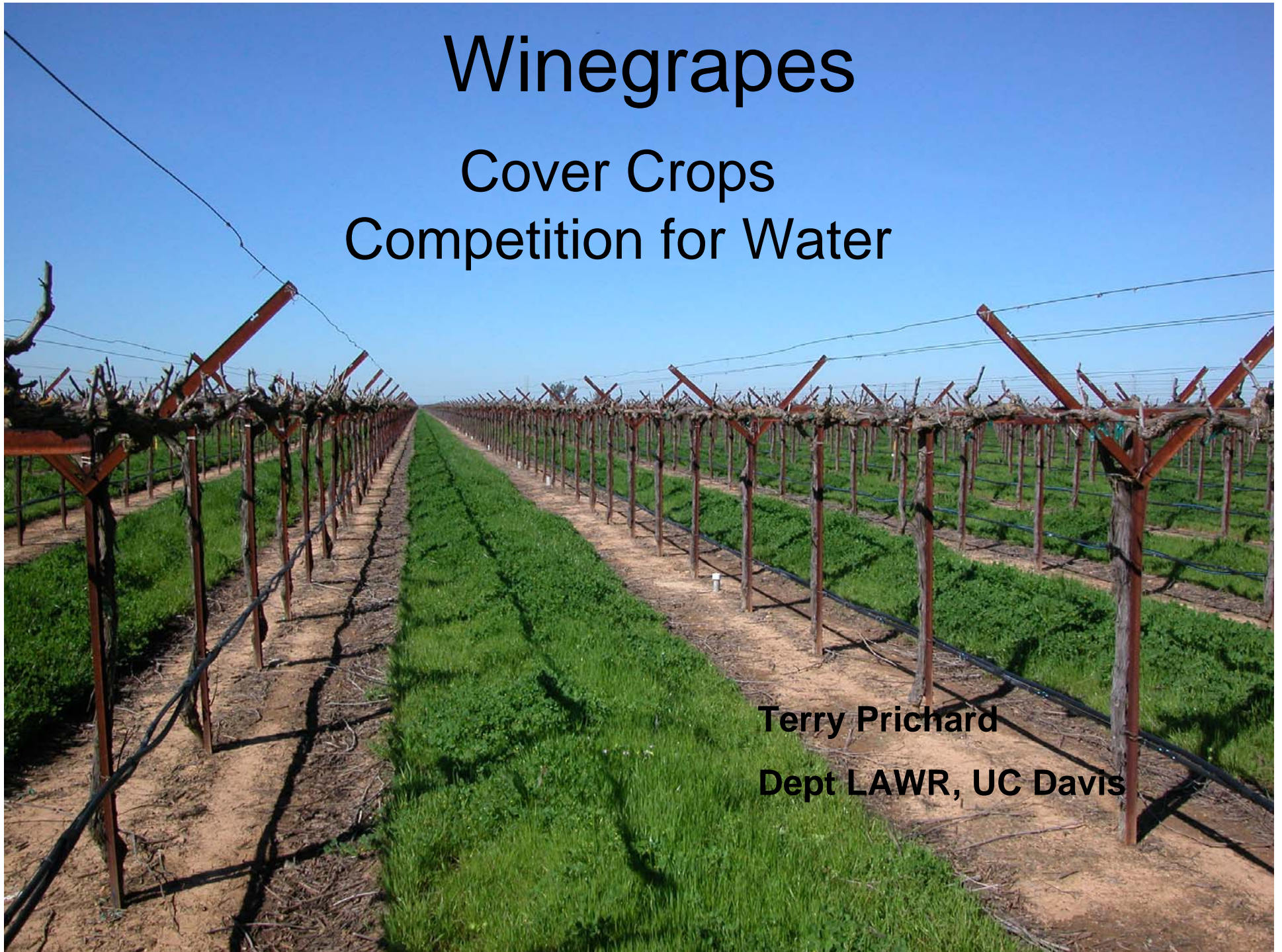


# Winegrapes

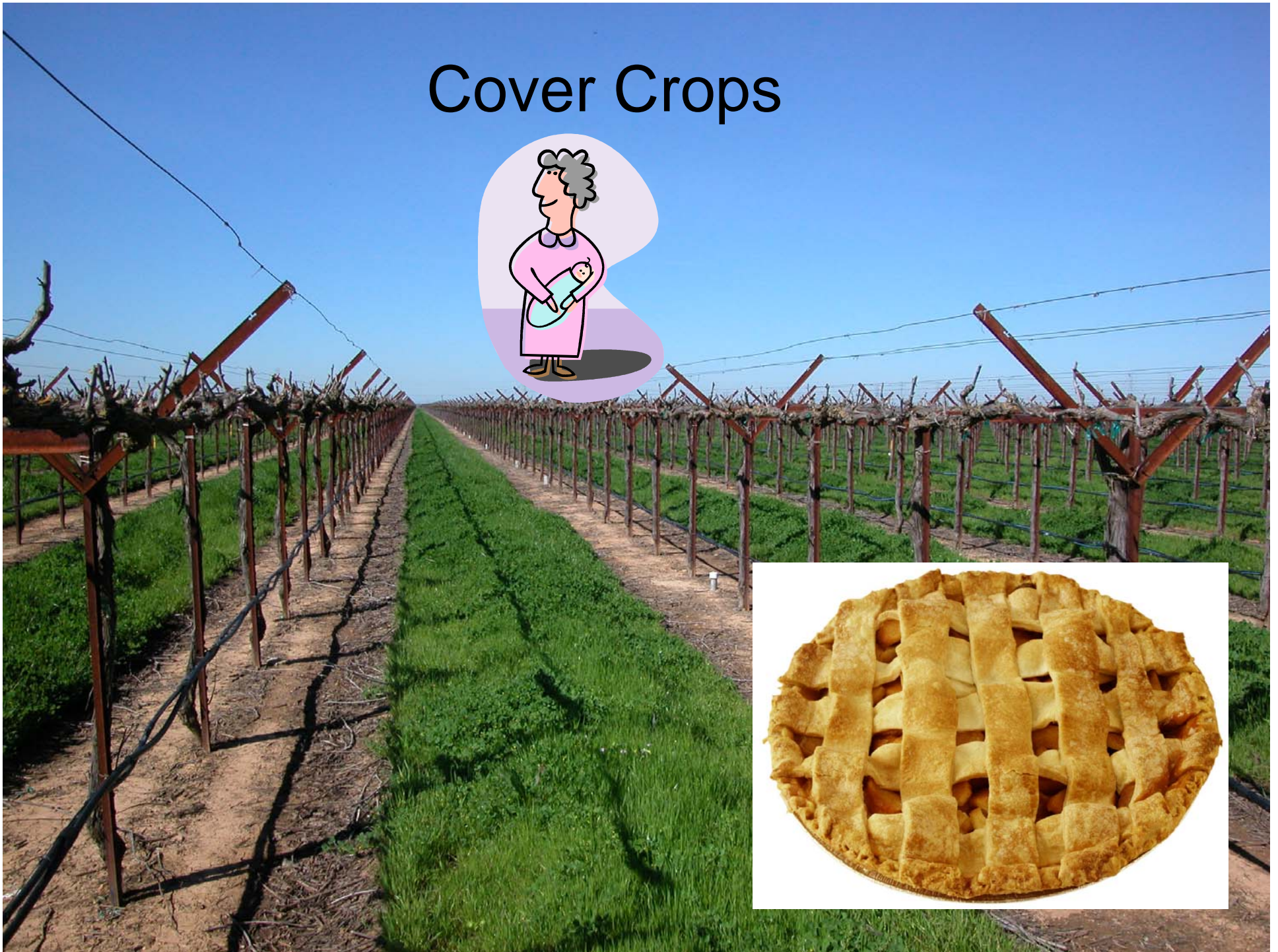
Cover Crops  
Competition for Water



Terry Prichard

Dept LAWR, UC Davis

# Cover Crops



# Cover Crops



# Cover Crops

Weed Suppression



# Provide Aesthetically Pleasing View



# Reduce Soil Erosion



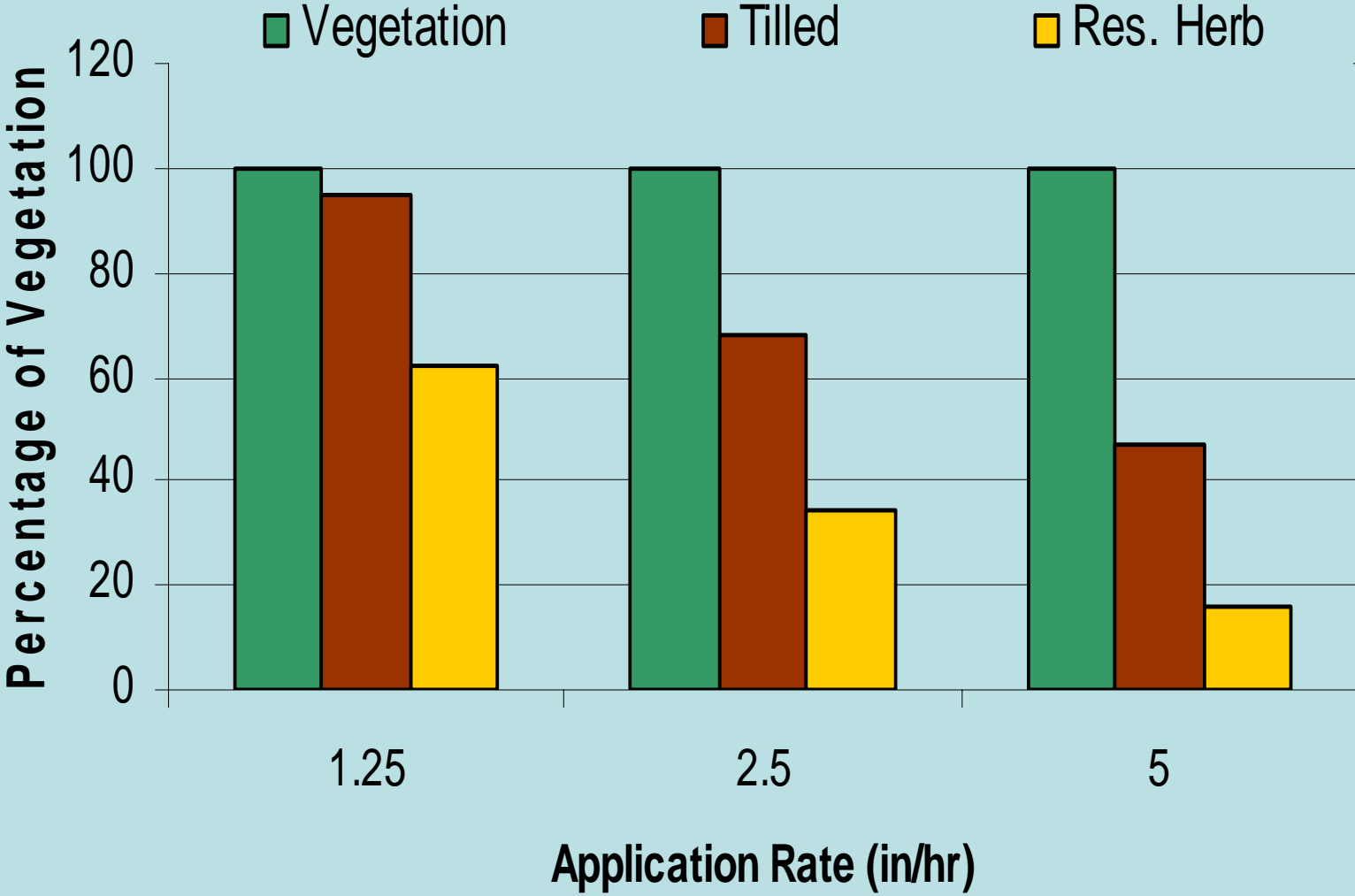
# Cover Crops Water Infiltration







# Relative Time to Ponding



# Cover Crops

Increase Soil Quality

- Physical Structure
- Vine Nutrition



# Control Vine Vigor



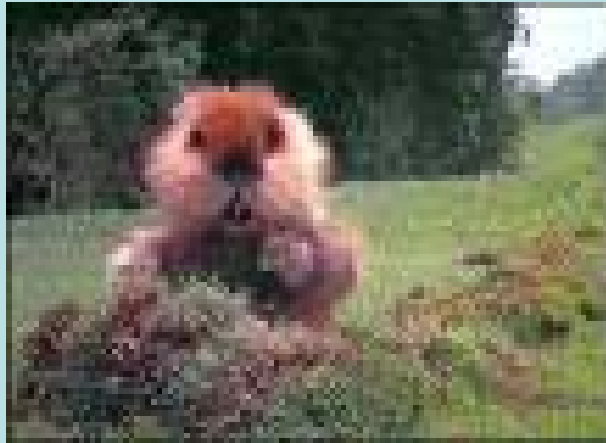
# Cover Crops

Frost Hazard



# Cover Crops

- Rodents
  - Gophers/ Voles



# Vine Devigoration

A photograph of a vineyard with rows of grapevines in the foreground and rolling hills in the background under a clear blue sky. The vines are supported by a metal trellis system. The background shows rolling hills with sparse vegetation and a clear blue sky.

**Competition for Water  
Competition for  
Nutrients**

# Competition for Water

- Climate (evaporative water demand) and Rainfall
- Species
  - Annual / Perennial
  - Till / No-Till
- Planting / Growing success
  - Size of the canopy
  - Rapid and good soil coverage
    - Fertilization
    - Irrigation
    - Early planting / early rainfall
- Management

**No Irrigation**  
**No Fertilizer**

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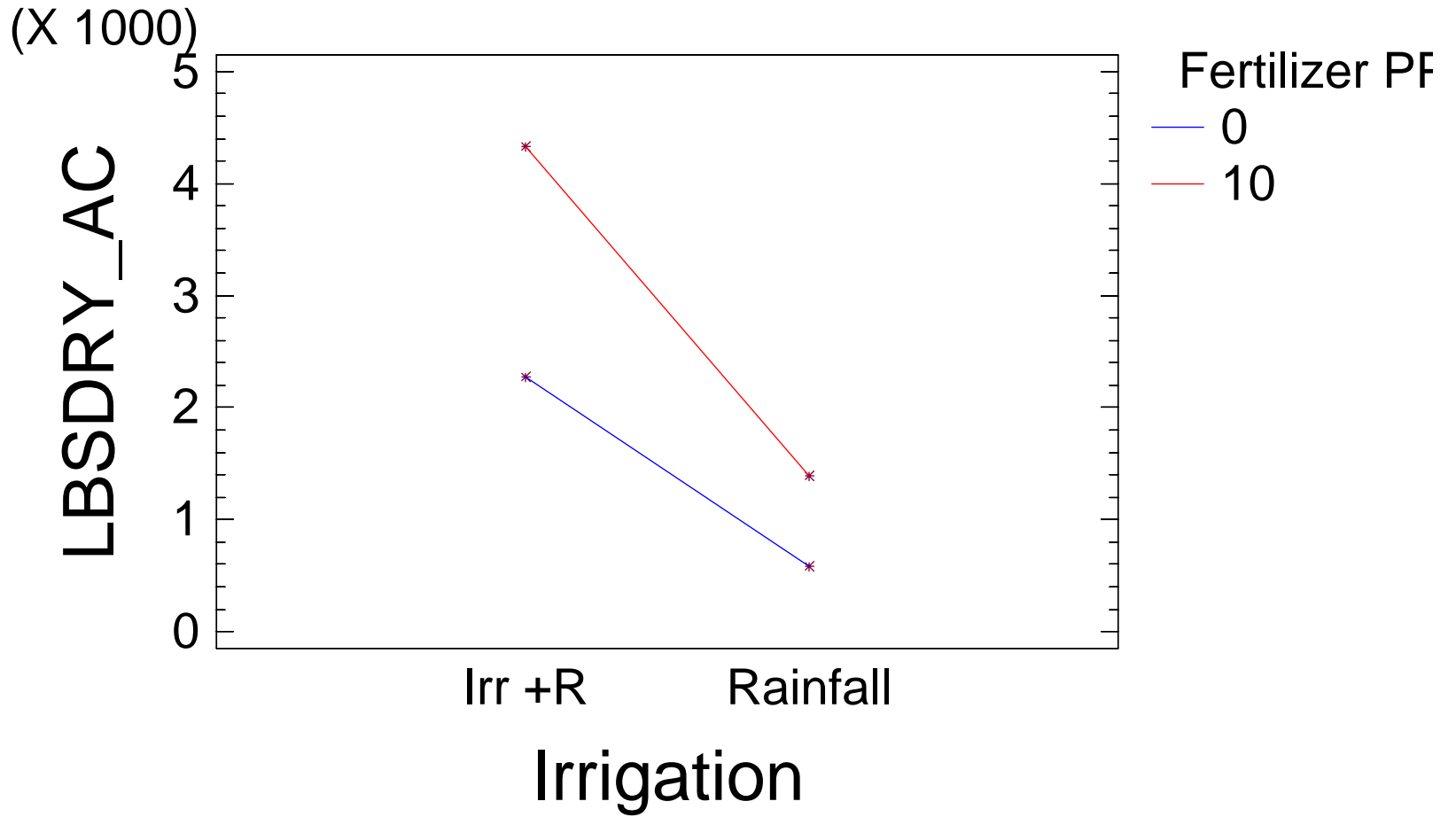
Irrigation + 16-22-0 @ 10 # / A N



Irrigation + 21-0-0 @ 10 # / A N



### Grape Cover Crop Linden Interaction Plot



# Management

Tillage

Mowing

Herbicide





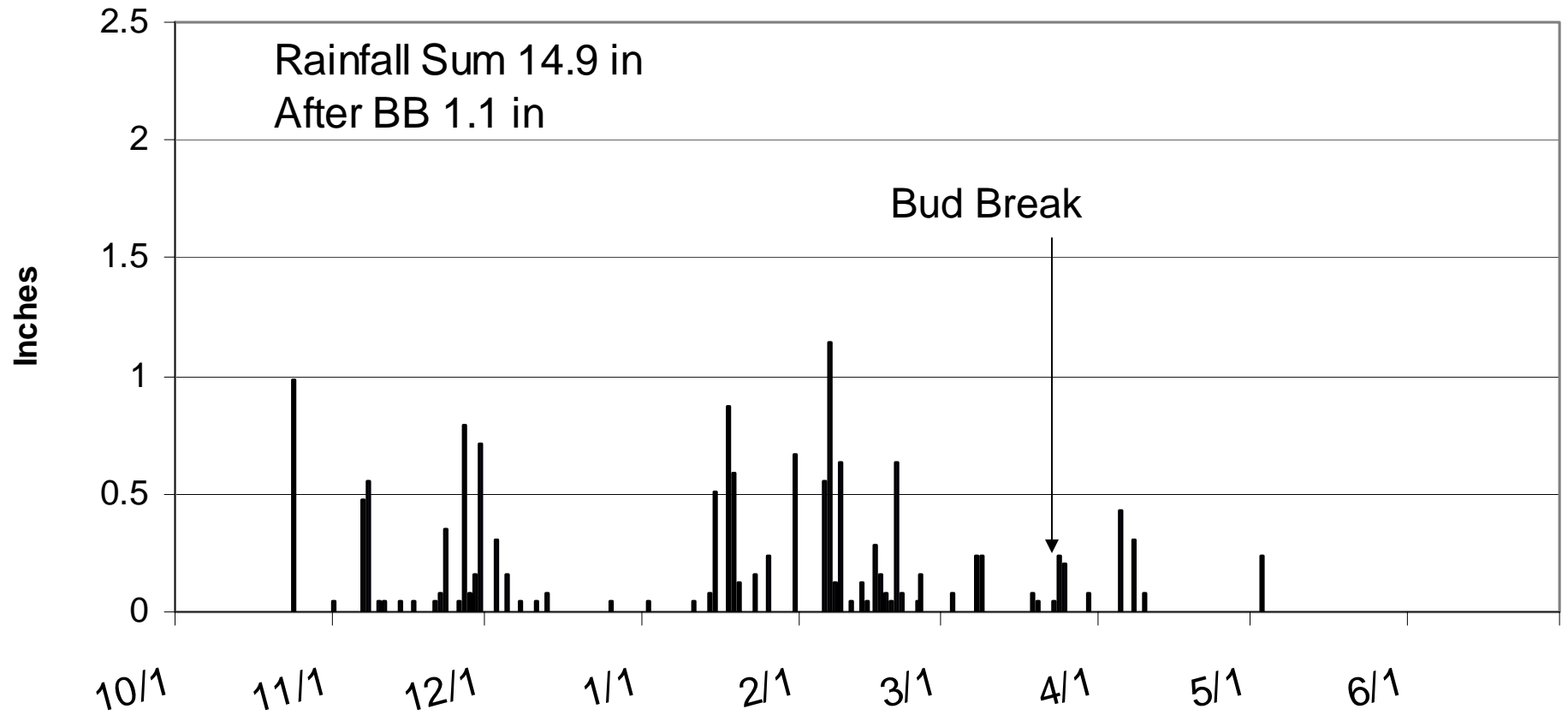
# Cover Cropping in Vineyards

*A Grower's Handbook*

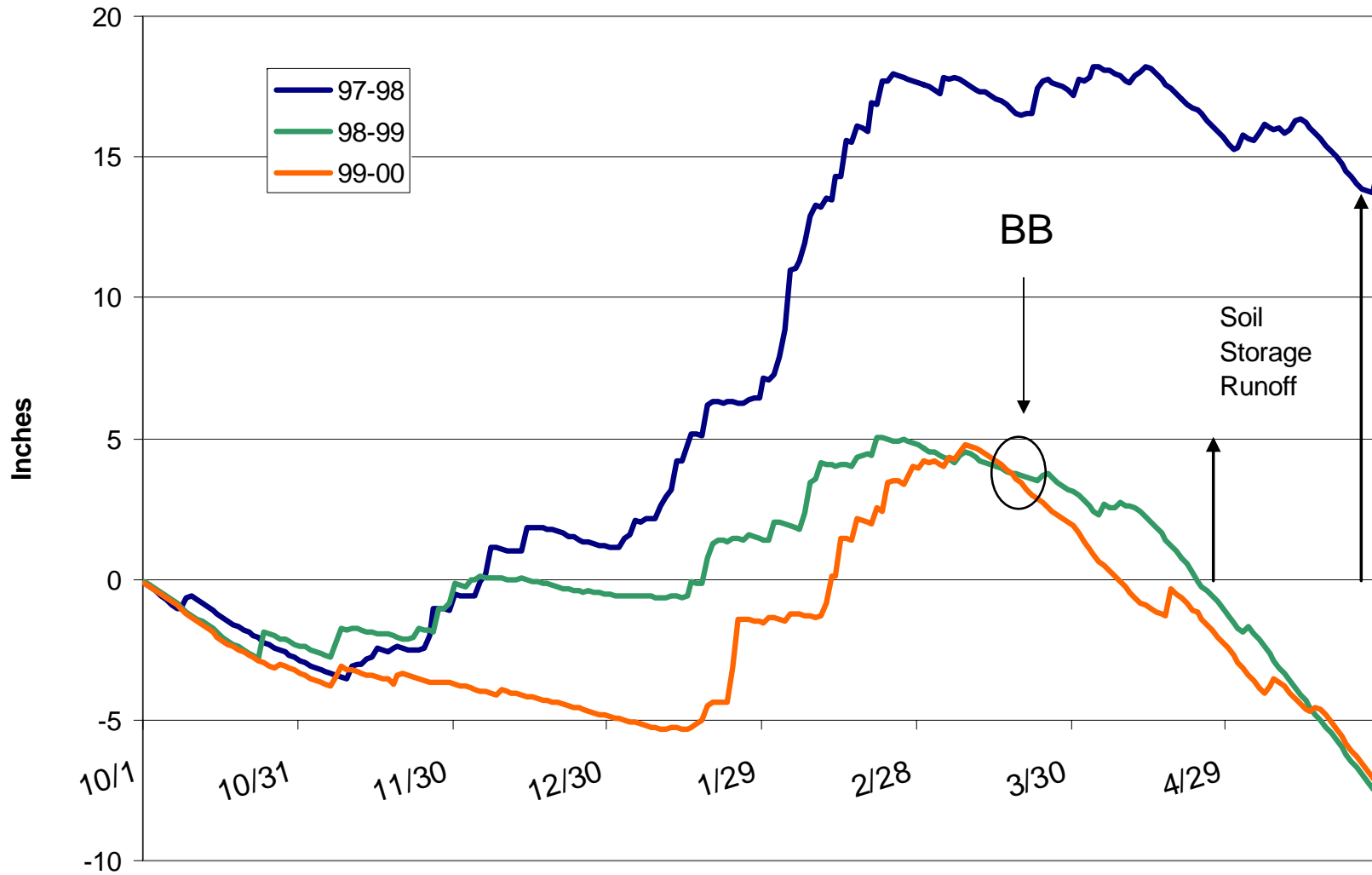
UNIVERSITY OF CALIFORNIA  
Division of Agriculture  
and Natural Resources  
Publication 3338



### 98 - 99 Daily Rainfall Lodi



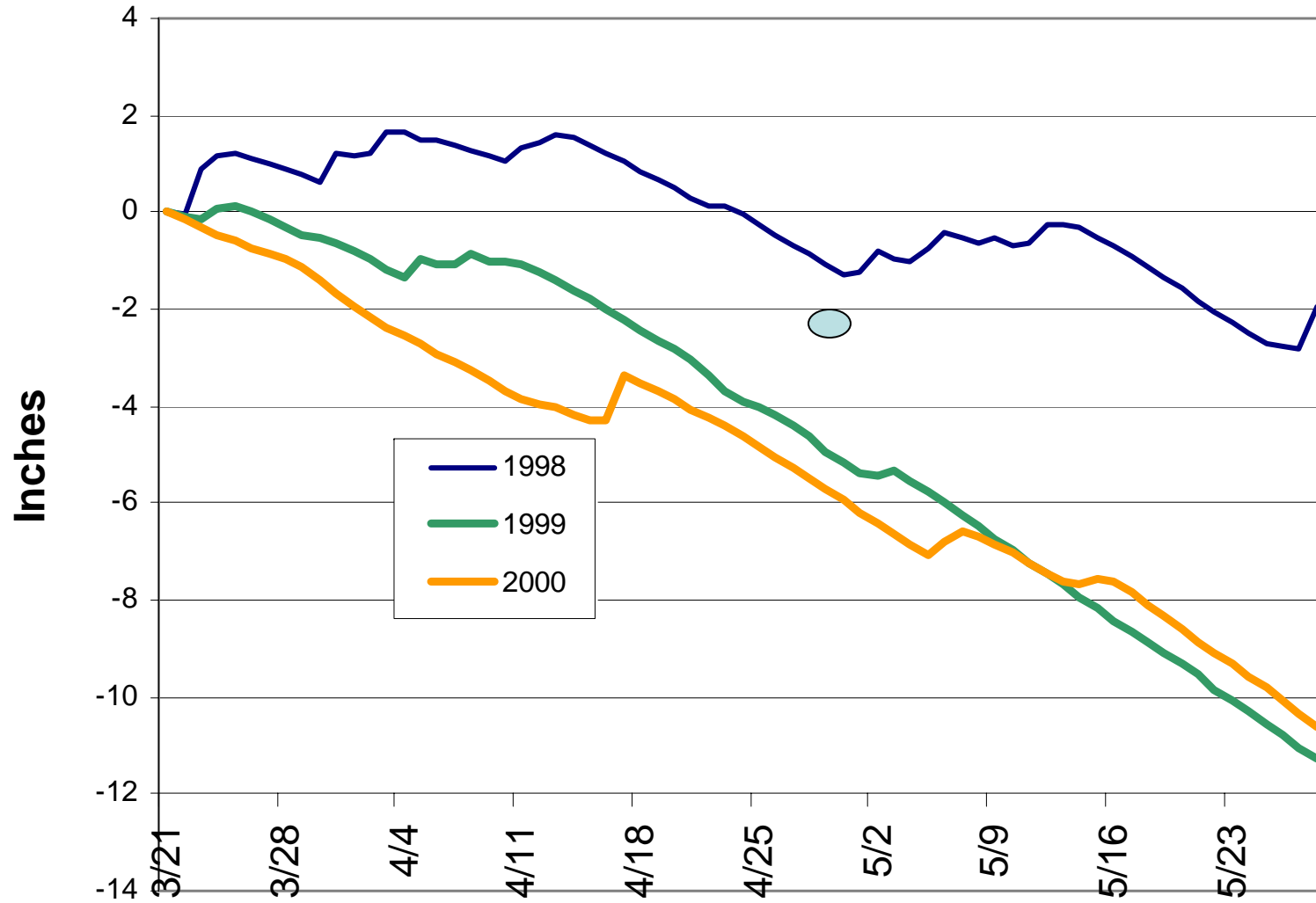
# Cumulative Rainfall - Eto Lodi





# Cumulative Rainfall - Eto

(After Budbreak)



Soil Moisture Content 0 – 10 feet

No Cover – Cover = 2.1 inches water

19 % of total extracted water



# Merlot 1998-2000

- Mature
- Bilateral cordon
- 7 x 11 ft spacing
- 20 2-bud spurs/vine
- Cover planted Fall 97
- 40 #/A annual + 20 #/A Perennial ryegrass







# Merlot Cover Crop Lodi 1997-2000

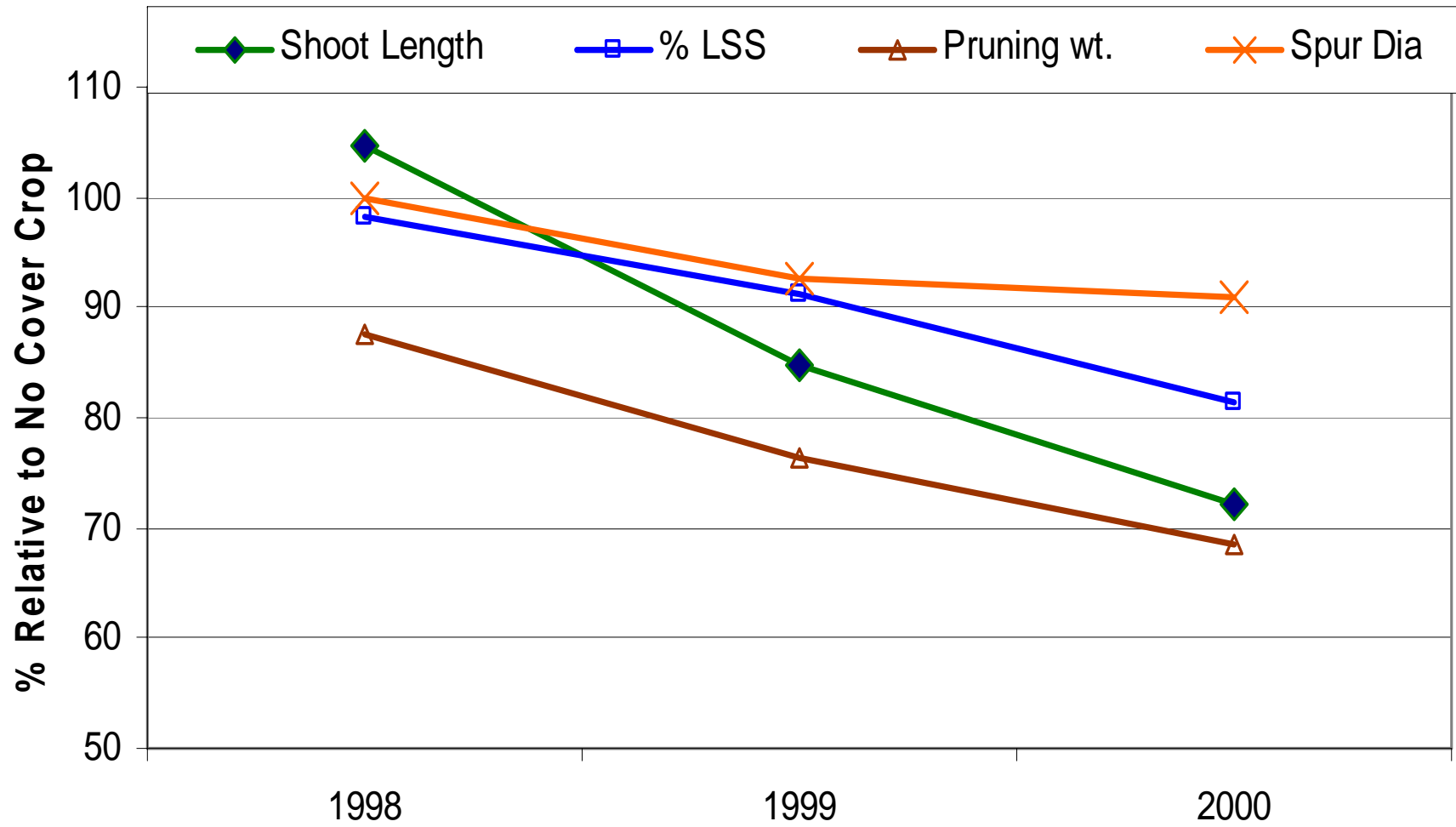
## Treatments:

- Irrigation
  - 13 bar Midday Leaf Water Potential Threshold
  - 60 % of full potential water use until harvest
- Vineyard Floor
  - Cover (ryegrass)
  - No Cover

	1998	1999	2000
Rainfall			
Oct - June in	33.2	14.9	16.3
after bb in	7.2	1.1	2.1
Earliest LWP	7/28	6/11	5/26
C	-11.6	-10.5	-9.6
NC	-11.5	-10.5	-11.6
	nsd	nsd	*
Threshold Date (-13 Bars)	8/6/98	7/2/99	6/22/00
C	-13.1	-13.8	-12.8
NC	-13.2	-13.3	-13.9
	nsd	nsd	*
Harvest LWP			
C	-16.4	-12.5	-13.5
NC	-16.4	-12.5	-14.7
	nsd	nsd	*

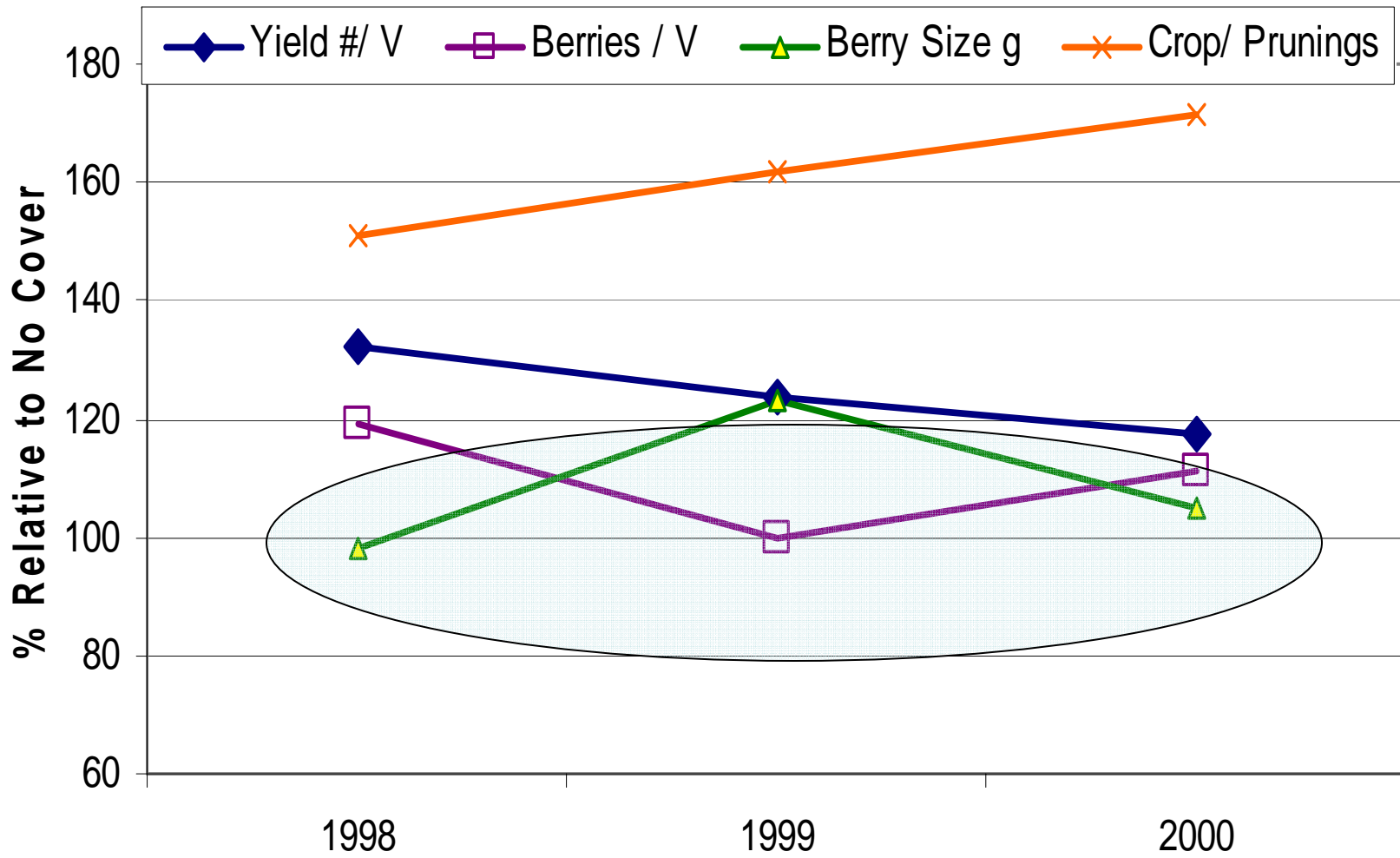


## Merlot Lodi 98 - 00 Cover Crop

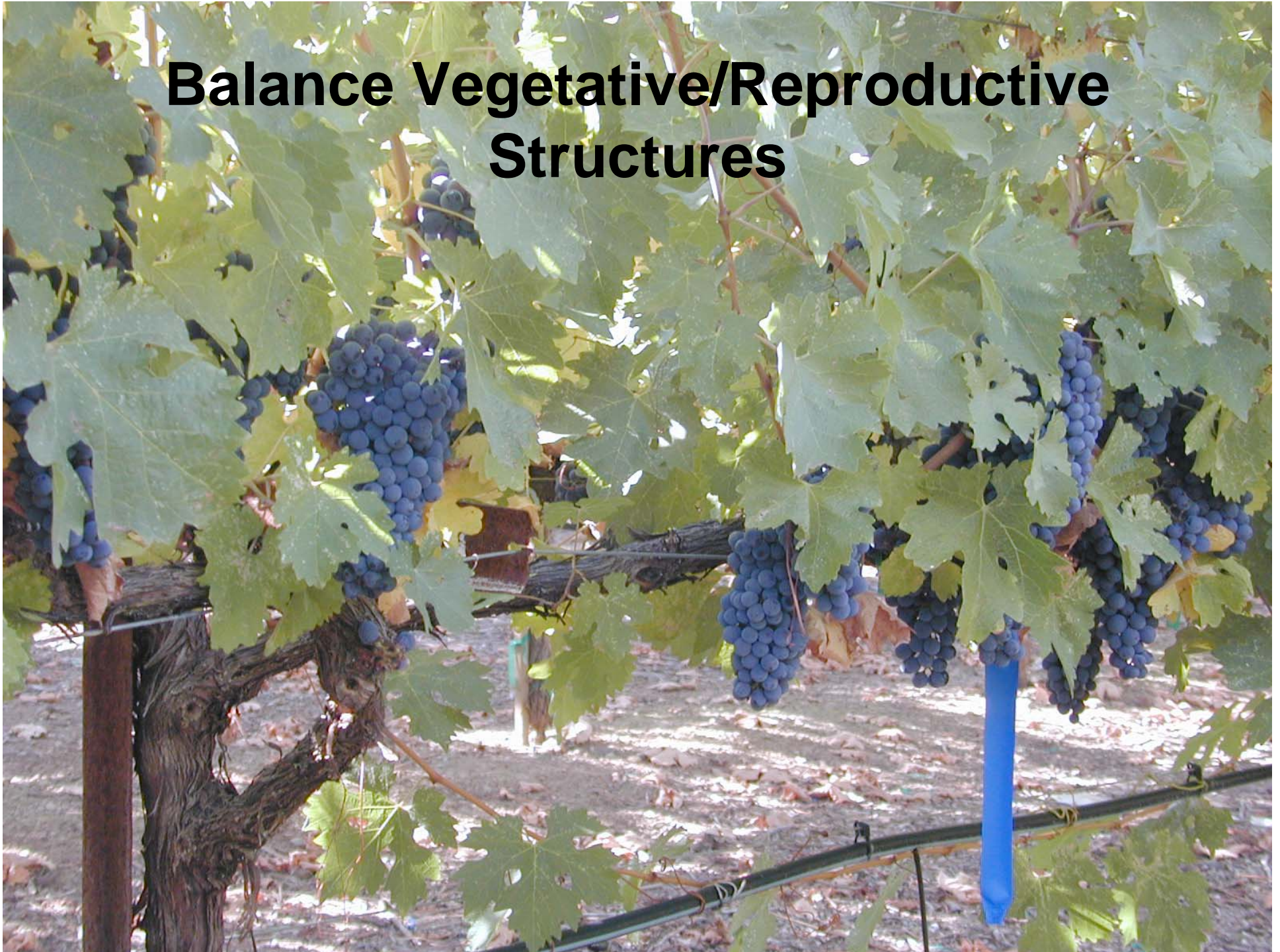


# MERLOT Lodi 98 - 00

## Cover Crop



# Balance Vegetative/Reproductive Structures







Terry L. Prichard LAWR

Click on: [Personal Professional Website](#)

