HOME VINEYARDS - FALL

INTRODUCTION

University of California Cooperative Extension UC
MASTER GARDENERS OF NAPA COUNTY

Need more Information:

Help Desk
Monday, Wednesday, Friday
9:00 AM – 12:00 Noon
253-4143

E-mail: mastergardeners@countyofnapa.org

http://napamg.ucanr.edu

WEB SITE: WWW.IPM.UCDAVIS.ED Integrated Pest Management PEST NOTES

What questions do you have for us?

- How many have vineyards?
- How Big?
- What varieties?
- Where are they located?
- Are you aware of Integrated Pest Management (IPM)?
- Do you sell your grapes?

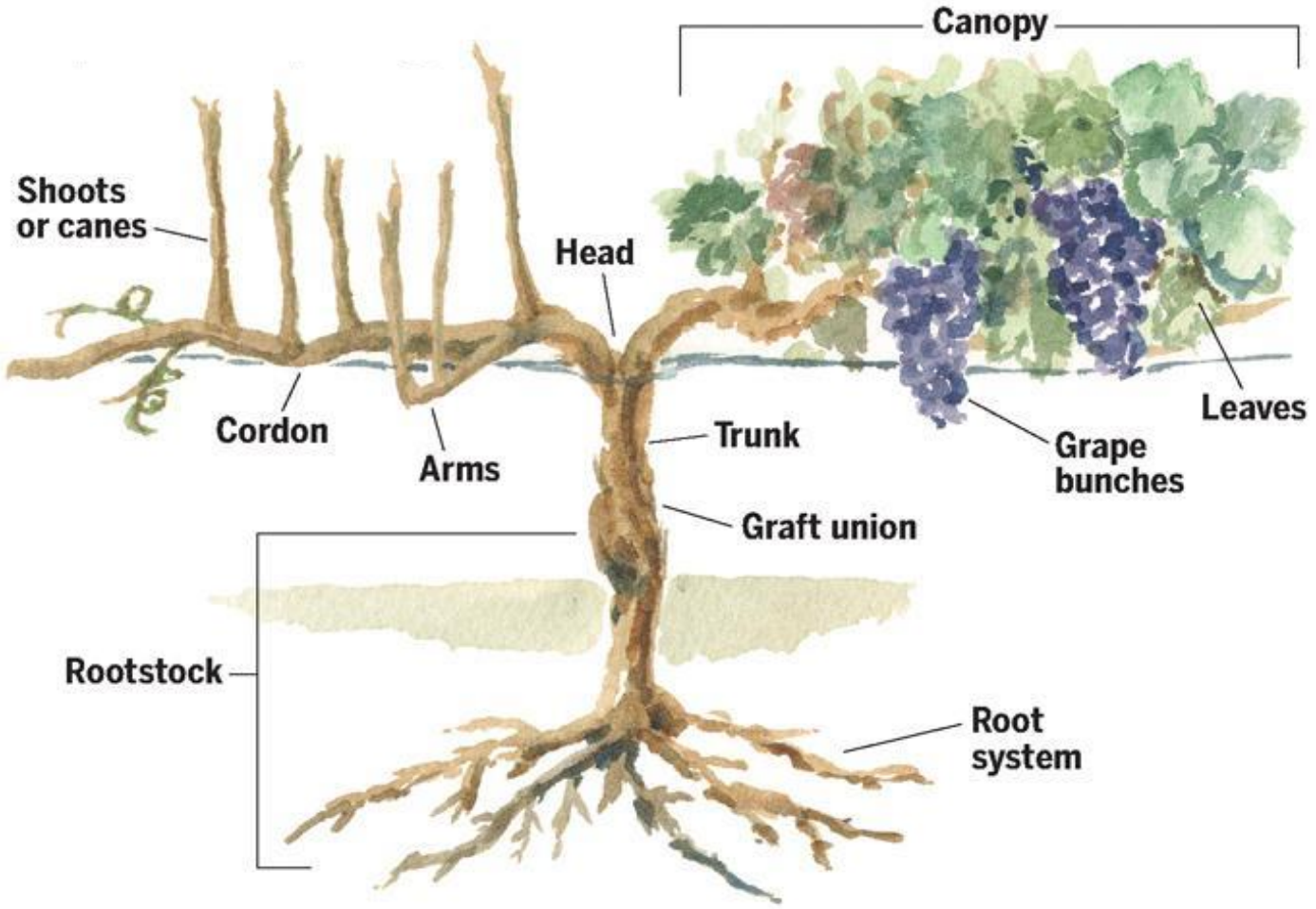
OUTLINE OF WHAT WE ARE COVERING TODAY

- Introduction
- Calendar of events (August to January)
- Anatomy of a grapevine
- Harvest/Post Harvest Activities
- Soil Health and Regenerative Farming Practices
- Fall Soil Preparation
- Compost and Mulch
- Cover Crops
- Integrated Pest Management (Virus Update)
- Q & A

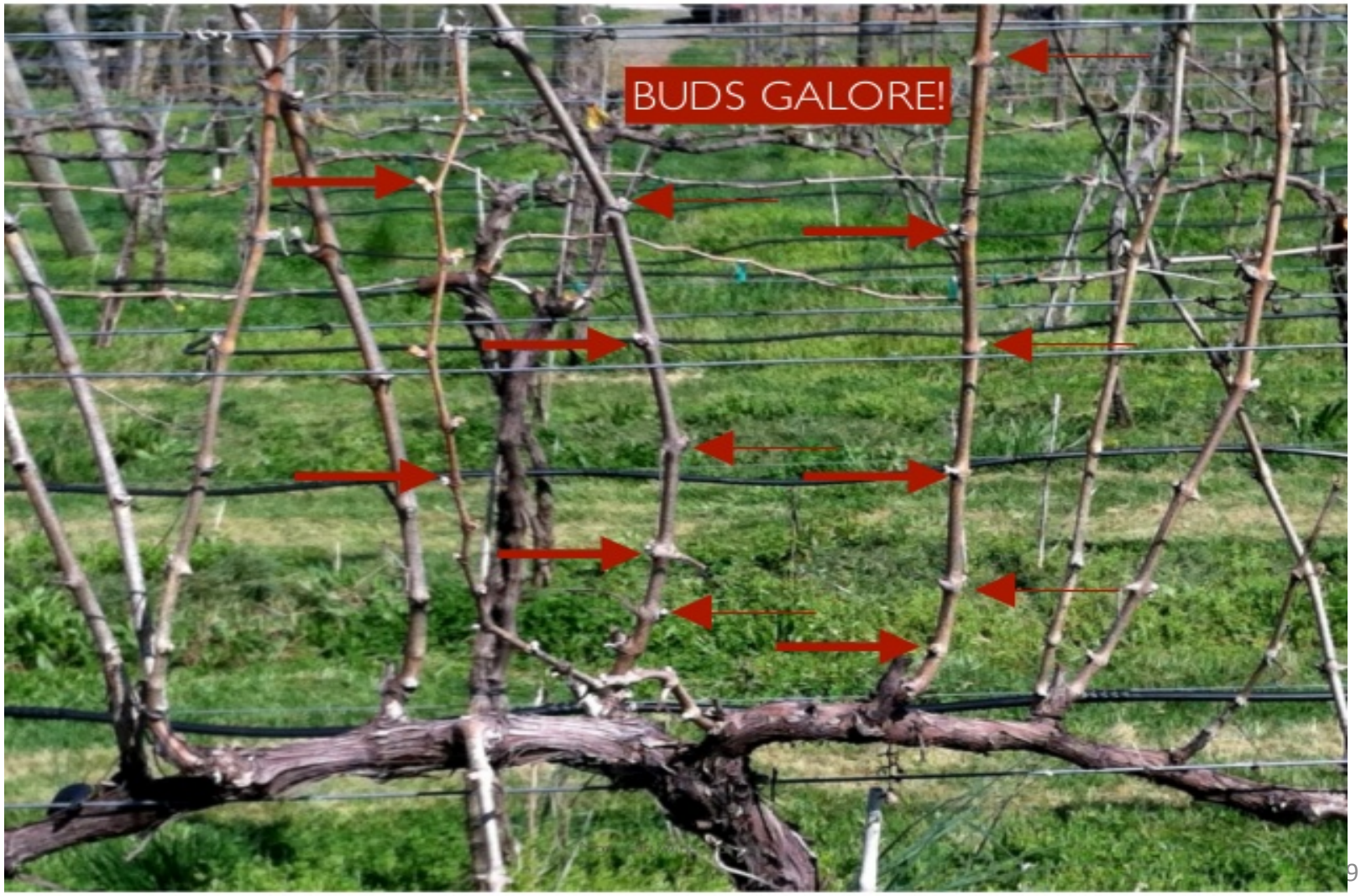
CALENDAR OF EVENTS

ANATOMY OF A GRAPEVINE

Grapevine Anatomy

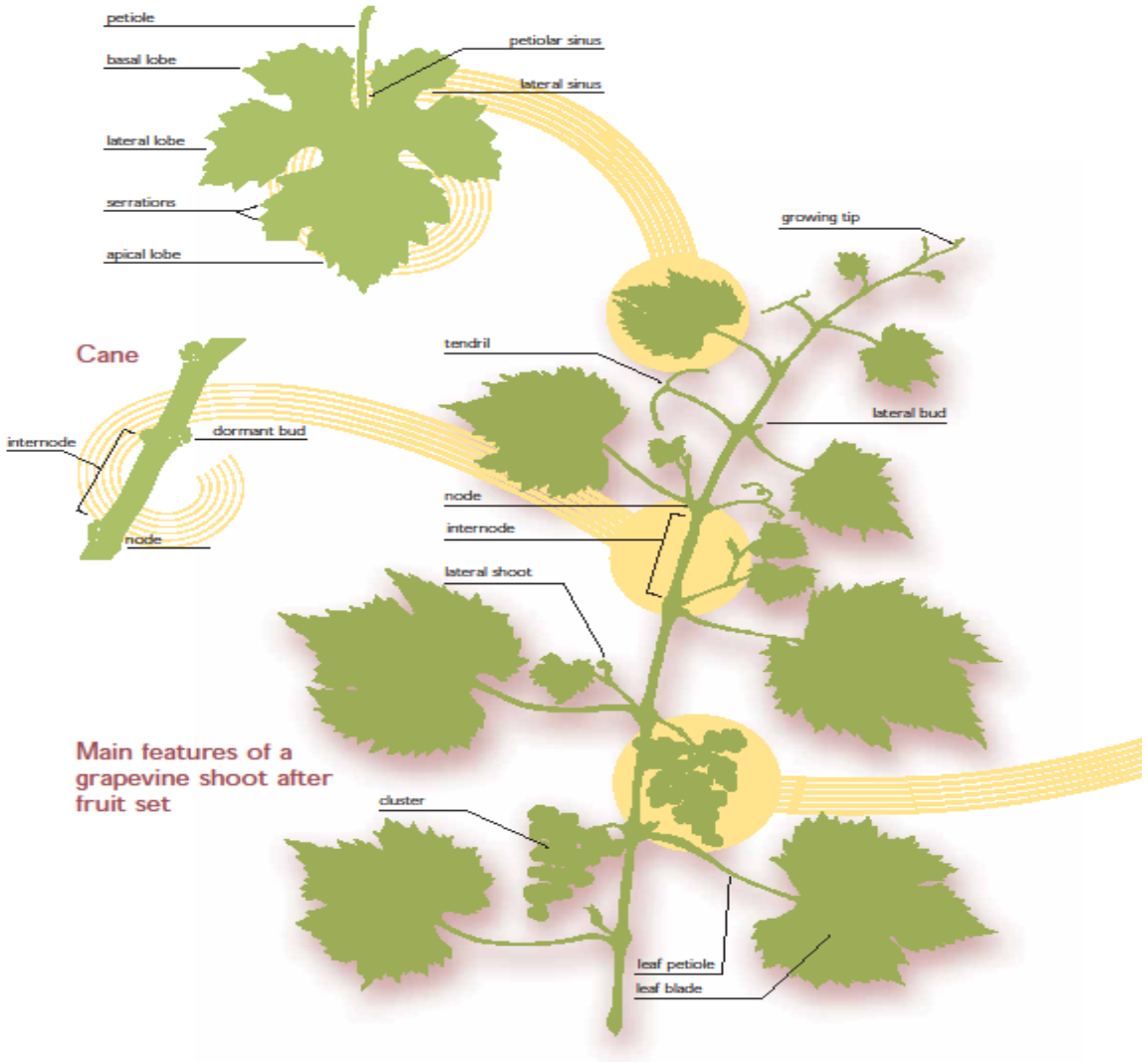


Grapevine Anatomy buds



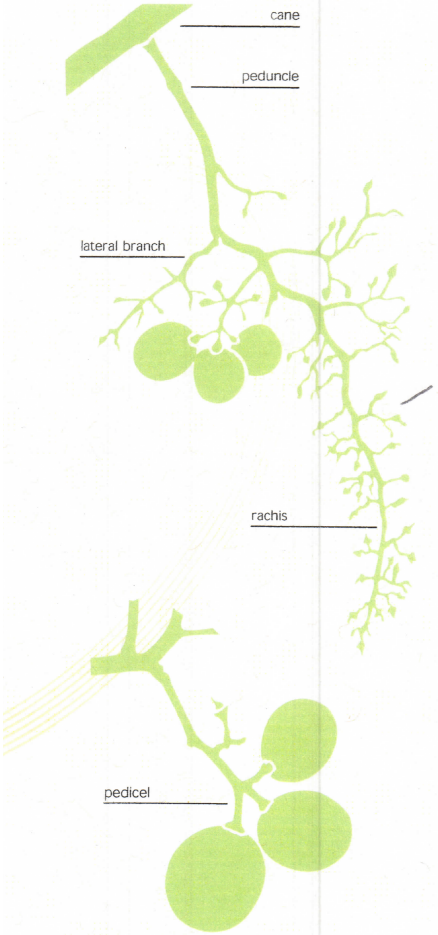
Wine Grapevine Structure

Typical vinifera grape leaf with five lobes



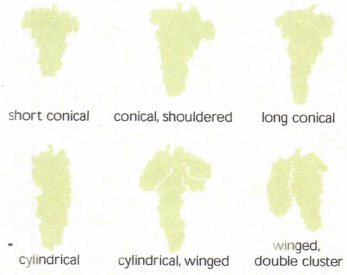
Main features of a grapevine shoot after fruit set

Grape cluster and its attachment to cane



Cluster and Berry Size and Shape

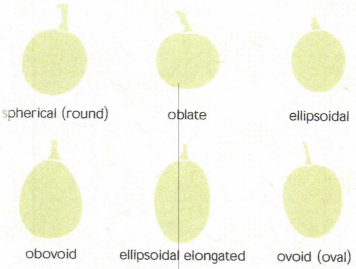
Common grape cluster shapes



Cluster Weight (lb)*	Class
<.25	small
.25 to .33	medium–small
.33 to .50	medium
.50 to .67	medium–large
.67 to .85	large
>.85	very large

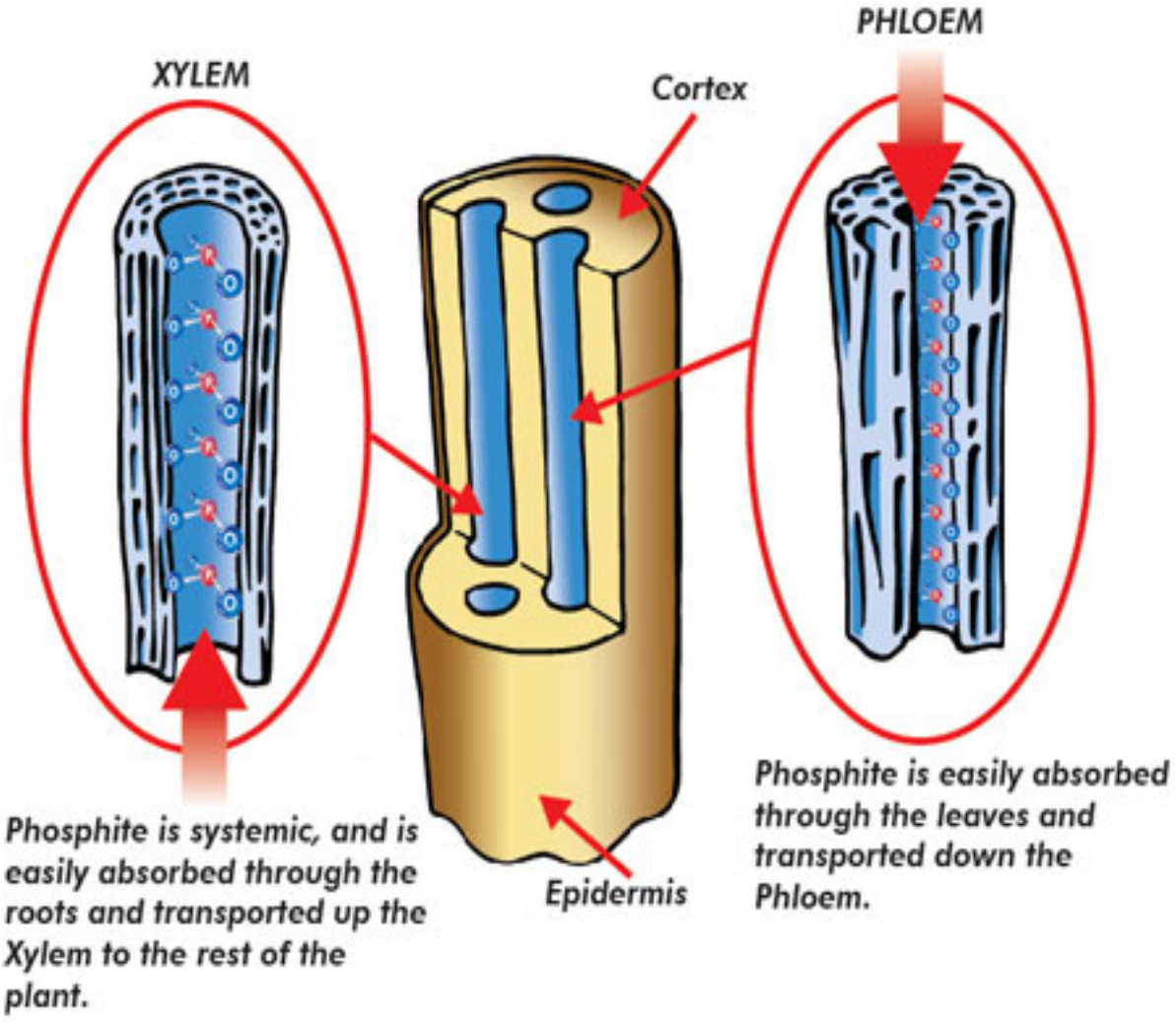
*Average cluster weights are not described in each variety profile due to the variability among clones, rootstocks, soil conditions, districts, cultural practices, and seasonal weather.

Grape berry shapes



Berry Weight (g)	Class
<1.4	small
1.4 to 1.7	medium–small
1.7 to 2.0	medium
2.0 to 2.4	medium–large
2.4 to 3.0	large
>3.0	very large

Food Flow


XYLEM
Cortex
PHLOEM
Phosphite is systemic, and is easily absorbed through the roots and transported up the Xylem to the rest of the plant.
Epidermis
Phosphite is easily absorbed through the leaves and transported down the Phloem.

HARVEST

Berry Development

Stages of berry development

	Stage I	Stage II	Stage III
Flowering →	Green berry growth →	Arrest of green growth →	Veraison

Stages of veraison

HARVEST

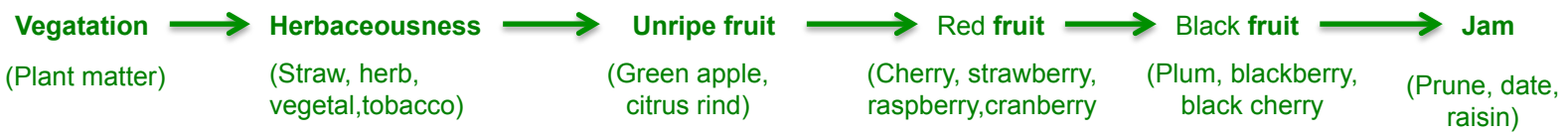
Stage I	Stage II	Stage III	Stage IV
Sugar/water accumulation →	Arrest of phloem transport →	Dehydration →	Raisining
	(Arrest of berry flavorant synthesis)		
		(Deterioration of berry flavorants)	

Berry Ripening Characteristics

- Sugar Levels – Brix
- Acidity (TA)
- pH
- Specific Flavorants

TA decreases as pH increases

How does it taste



Evolution of flavorants in Cabernet Sauvignon

Discuss goals with your winemaker

Brix Testing

- When
  - At visual signs of veraison
  - Weekly, Mornings at the same time
- Sample Size (Berries)
  - 150 – 250+/Acre per harvest/varietal block
- Collection Method
  - Zip-seal “baggy”
  - Select most berries from bottom of clusters (back and front)
  - Shaded clusters and sunny sides of rows
  - Every 5/10 vines
  - Leave berries whole, keep cool

Brix and pH Testing

- Process sample
  - Crush berries
  - Knead the grapes
- Assess berry seeds
  - Bright green changes to light brown
- Maintain records
  - Growing notes

Brix and pH Ranges

	Brix	pH
Red Grapes	23% - 25%	3.3 – 3.5
White Grapes	22.5% - 24.5%	3.1 – 3.3

Discuss goals with your winemaker

Post Harvest

- Irrigate to maintain the foliage for carbohydrate accumulation during the fall.
- 4-8 hours. Drip irrigation

- DO NOT water when the plants are dormant

SOIL HEALTH AND REGENERATIVE FARMING CONCEPTS

Soil Health

There are more microorganisms in a teaspoon of soil than there are humans on earth. Soil is the most diverse environment on the planet.

Soil Health

- Soil's continued capacity to function as a dynamic, living ecosystem that sustains plants and microorganisms, enhances air and water quality.

- *Soil health is the foundation for profitable, productive, sustainable and environmentally sound agriculture.*

- Healthy soil is alive with billions of organisms
  - Provide nutrients for plant growth,
  - Detoxify potential pollutants, store water, and
  - Provide habitat for soil communities to diversify, flourish and keep the system running well.

Soil Health

- Healthy soil contains minerals:
  - Such as calcium, carbon, potassium and nitrogen
  - Water, air and organic matter
- Healthy soil is teaming with:
  - bacteria, fungi, algae, insects, worms and other organisms, as well as plant roots.
- Soil health isn't defined by any one of these constituents, but rather how they all work together to sustain soil and keep it productive year after year.

Regenerative Farming Concepts

- Newly emerging term for conservation agriculture
- Beyond the concept of sustainability
  - Restore our soils
  - Improve productivity
  - Organic inputs
- Low or no-till
- Introducing cover crop system

Regenerative Farming Concepts

- Benefits of adopting
  - Test plots where cover crops are grown are loaded with far more organic matter.
  - Organic matter improves water absorption, making the land more resilient to drier conditions.
  - Healthy soil saves water, since it reduces water evaporation levels by 4 to 5 inches
  - Fields with cover crops also sequester carbon.

BREAK

FALL SOIL PREPARATION

Fall Soil Preparation

- Timing
- Equipment
- Things to Consider
  - Access to property
- Methods

Erosion and Sediment Management

Purpose

- Reduce and slow down runoff
- Stabilize hillsides
- Protect riparian sites and water quality

Napa County

- Erosion control plan >5% grade
- Review county requirements

Methods

- Straw
- Wattles
- Sediment curtains
- Cover crops
- Mulch

COMPOST AND MULCH

MULCHING

Compost and Mulch

Mulch is not tilled in

- Erosion control
- Moisture content improved

Compost

Compost is tilled in to

- improve porosity
- add microorganism diversity
- slow release of nutrients
- apply 3-4 tons /acre

Bio Char

COVER CROPS

Cover Crops

Purpose

- Erosion Control
- Soil health, provides nutrition
- Aeration
- Weed Management

TYPES

- Resident vegetation “weeds”
- Reseeding Winter Annuals
- Perennials
- High Biomass Mixes

INTEGRATED PEST MANAGEMENT (VIRUS UPDATE)

Grape Disorders

Red Blotch

Leafroll

Sharpshooters

Eutypa

Pierce's disease

PRUNING PREPARATION

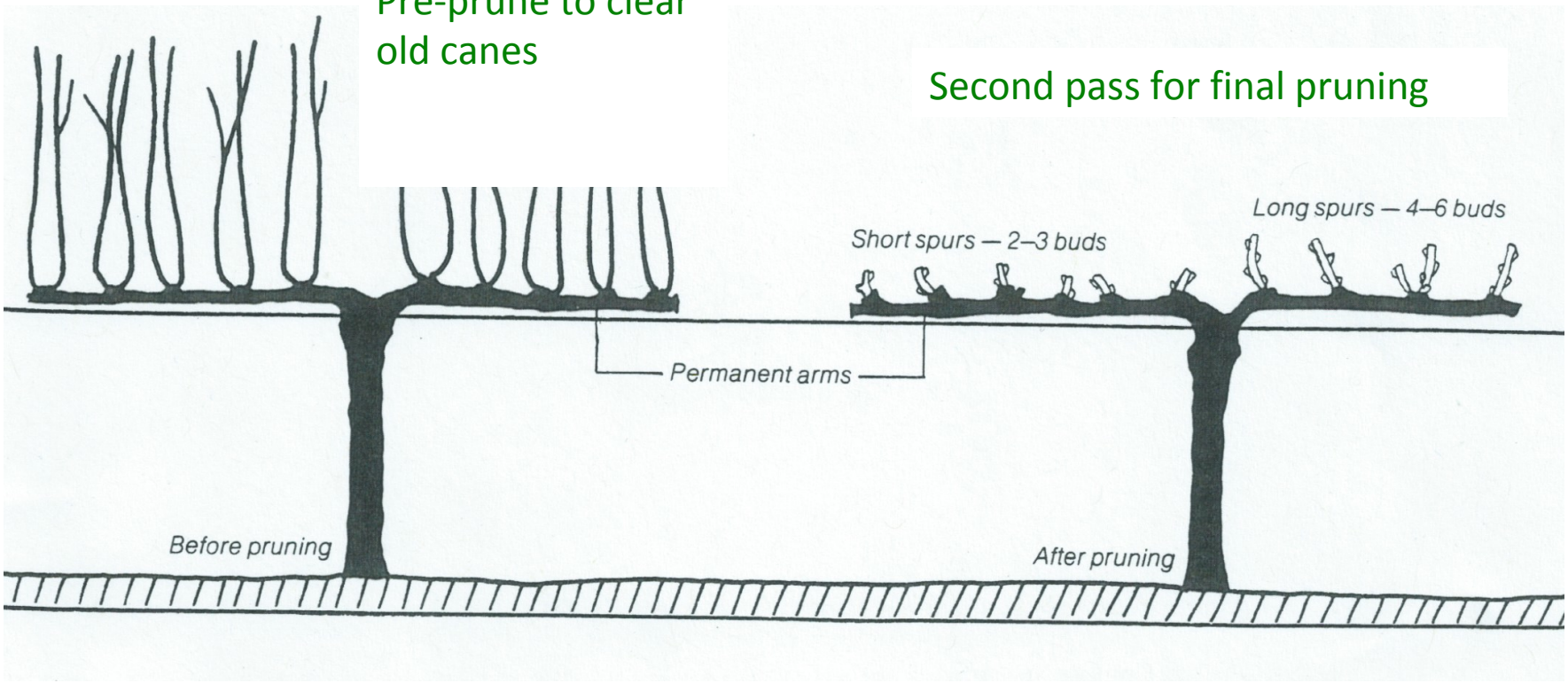
Pruning Preparation

- Purpose
- Benefits
- Method

Pre-Pruning

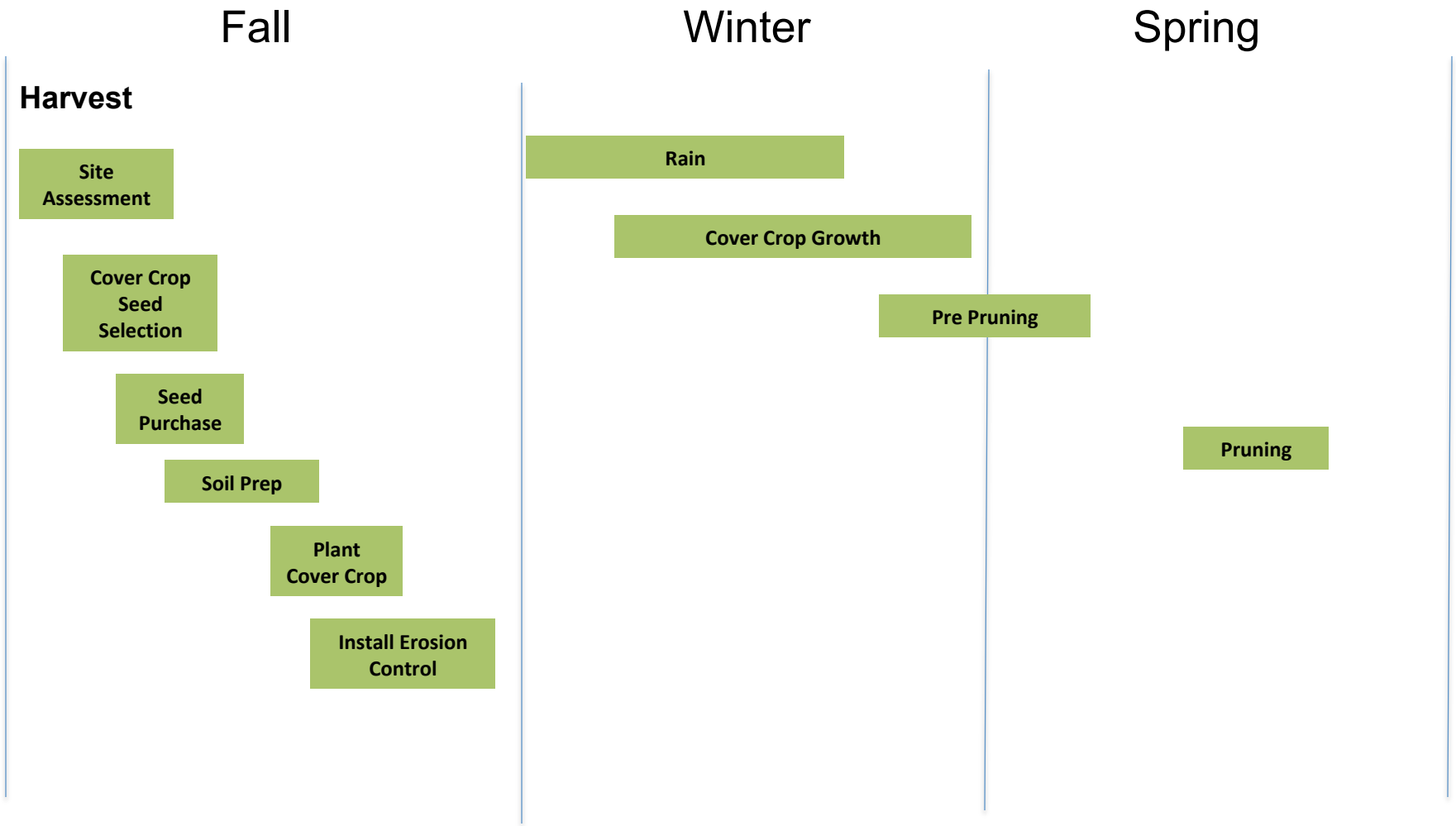
Pre-prune to clear old canes

Second pass for final pruning



Closing Q&A

Home Vineyard Fall-Winter-Spring Timeline



September 2019