

# Keys to Successful Vineyard Establishment

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# Vineyard Establishment

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1. Site selection/Evaluation
2. Land preparation
3. Plant material selection
4. Planting
5. Trellising
6. Training and Pruning

# Plant Material Selection

# Planting Stock Options

1. Cuttings
2. Dormant rootings
3. Dormant rootstock rootings
4. Dormant benchgrafts
5. Green growing benchgrafts
6. Tall benchgrafts



# Number 1 Dormant Benchgraft

- 1. Length:** 14 inches (12- to 13-inch rootstock and 1- to 2-inch scion).
- 2. Caliper of rootstock:** 5/16-inch or more.
- 3. Nodes:** Four or more, counting the top and basal nodes; some rootstocks have a genetic tendency to produce cuttings with longer internodes and may produce cuttings with only three nodes.
- 4. Top growth:** At least 8 inches of mature growth, prior to trimming and scion caliper should be at least 5/32-inch.
- 5. Root growth:** At least three roots with diameter of at least 1/32-inch originating from the basal area of the cutting and distributed radially around the base.
- 6. Graft union:** Well healed and able to withstand modest lateral pressure.
- 7. Overall appearance:** Rootings should be reasonably straight, relatively round, free from physical damage and obvious diseases

















# **Disease Prevention and Management**

- **Use certified virus tested vines**
- **Plant healthy vines with no sign of root deterioration or discoloration in the vascular tissues**
- **Site preparation to reduce soil physical issues**
- **Avoid planting technique problems**
- **Irrigation/water management**

# Bot Canker on Planting Stock









# Planting



















# Planting Problems





# Effect of “J” Rooting on Root Distribution





# Effect of “J” Rooting on Root Distribution

































# **Root Diseases and Vine Declines**

# Black Foot Disease





# Black Foot Disease





# Petri Disease



# **Vine stress can play an important component in disease development**

- **Improper planting holes/technique**
- **Poor drainage**
- **Soil compaction**
- **Irrigation management**
- **Poor nutrition**
- **Heavy crop loads on developing plants**

# **Effect of root length and planting method on vine growth and productivity**

## **Root length**

- 1. Untrimmed benchgrafts**
- 2. Trimmed to 1.5 inches**

## **Planting method**

- 1. Hole**
- 2. Spade**

**Pinot noir on SO4 planted 2013, VSP, 6 x 6 ft spacing**



# Root length





# Planting method













## **Conclusions to date**

- 1. Planting technique and root length can influence initial vine growth**
- 2. Trimming of roots and spade planting both were shown to reduce early vine growth**
- 3. Of the two factors tested reducing root length reduced growth in both the first and second year**
- 4. Reductions in vine growth parameters did not result in lower crop yield in year three and four**







# Root Trimming of Dormant Tall Vines, 2016

	Pruning wt, g	Trunk diameter, mm
Untrimmed	18	12.2
Trimmed	15	11.6
P-value	0.23	0.02



# Plant Material and Training



# Tall Vine Trial (2011-2014)

Treatments (applied in second year)

## 1. “UberVine” dormant potted benchgraft

- a) 0 crop
- b) 1/2 crop
- c) full crop

## 2. Standard dormant potted benchgraft

- a) 2-node spur pruned
- b) trained to a trunk

**Chardonnay on 101-14, 5 x 6.33 ft spacing,  
VSP, planted March 2011**



**July 2, 2012**





**May 3, 2011**







**Second year March 26, 2012**





**Second year  
March 26, 2012**

**trunk**





spur



UV



trunk

End of second year (2012)

(12-18-12)



2014



3-3-14





**2015**



**Standard**



**Ubertvine**

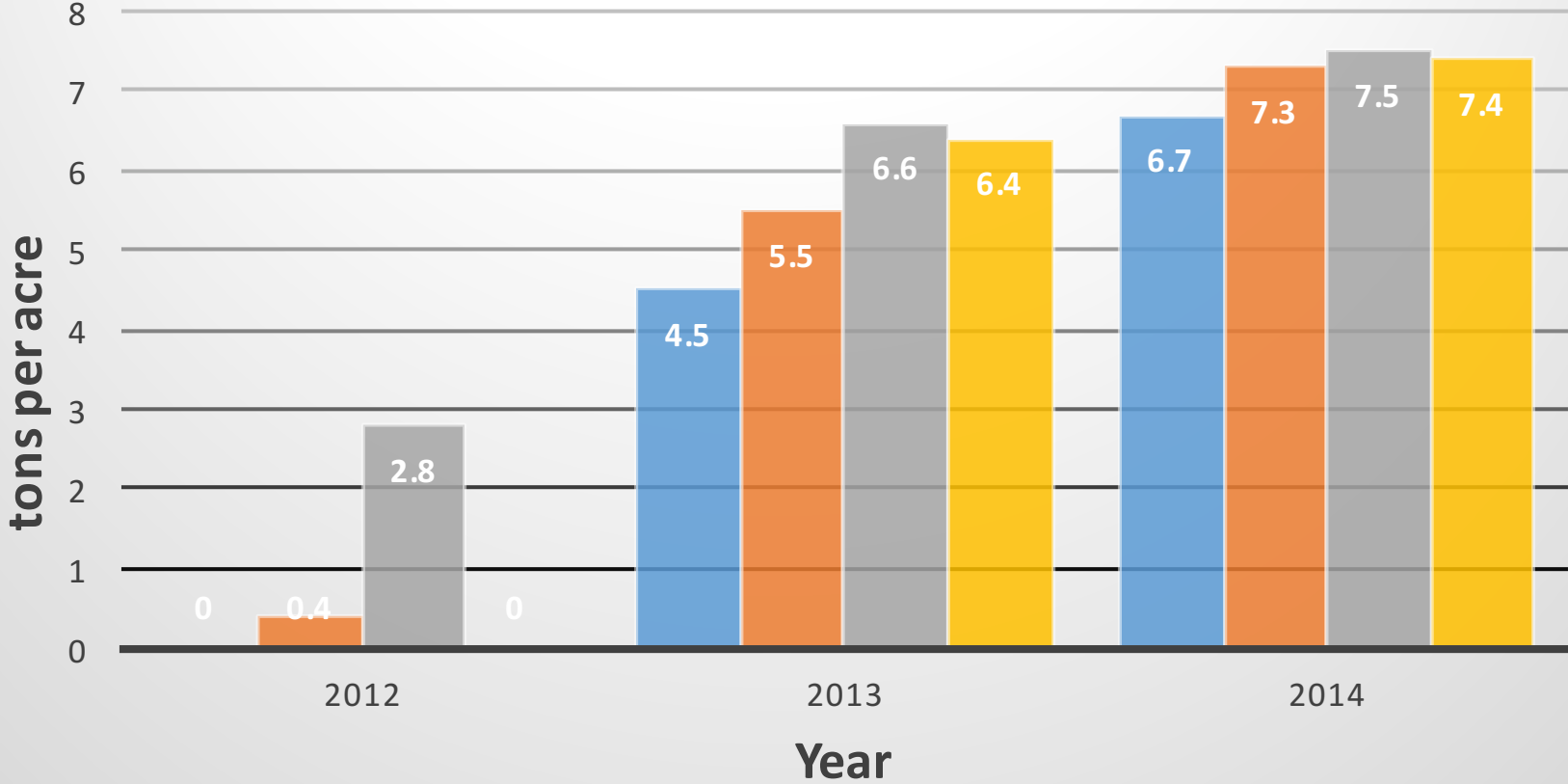


**Trunk**

**(2-25-15)**



# Yield



■ spur ■ trunk ■ UV FC ■ UV OC



# 2014 (Year 4)

Table 5. Effect of plant material and training on vine growth of Chardonnay grapevines, 2014.

Treatment	Shoots per vine	Shoot weight, g	Pruning weight, g	Fruit: pruning wt ratio	Trunk Diameter, mm	Cordon diameter, mm	
						First internode	Last internode
12 in BG pruned to 2 buds	30 b	32 a	0.98 b	4.6 b	26 a	19 c	13 b
12 in BG Pruned to a trunk	32 b	33 a	1.03 b	4.7 b	26 a	21 b	15 a
36 in BG with cordons, 0 crop	39 a	33 a	1.30 a	3.9 a	26 a	25 a	14 b
36 in BG with cordons, 1/2 crop	39 a	35 a	1.36 a	3.7 a	26 a	26 a	14 b
36 in BG with cordons, full crop	39 a	34 a	1.35 a	3.7 a	25 a	25 a	14 b



# Summary

## Cost of plants

Ubervines – \$5.50

Standard – \$3.00

**Additional cost for plants = + \$3028**

## **Additional production**

2012 - + 2.4 tons

2013 - + 1.7 tons

2014 - 0 tons (+0.8)

**+ 4.1 tons @ \$1200/ton = + \$ 4920**



# 2016 Trials

- **Comparing field grown tall vines to potted tall vines and standard benchgrafts**
- **For tall vines comparing untrimmed and trimmed roots**







