

TAILGATE TALK: High Cordon Trellising

Lodi Winegrape Commission, UC Cooperative Extension & Kautz Farms
20 September 2016 – Paul Verdegaal & Joe Valente

Reasons for Pruning

1. Establish and maintain form of the vine
2. Distribute the bearing wood
3. Regulate crop load

Cost vs Benefit

PROS: Higher Yields, Less Labor, Less Canker Disease

CONS: Capital Investment, Maintenance, Higher Inputs

Influencing Factors:

- Regulations
- Labor
- Inflation (Fiscal & Monetary Policy)
- Taxes
- Market demand
- Grape variety

High Cordon, Machine Pruned (HCMP)

Field Trials

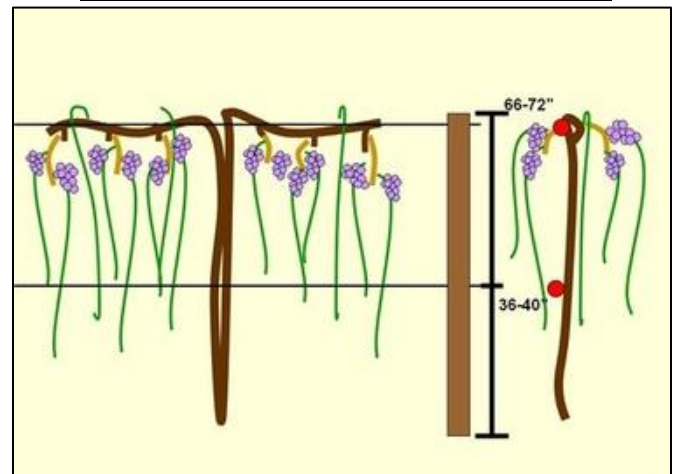
Kautz Farms

Established: 2011
Variety: Cabernet Sauvignon 337
Rootstock: O39-16
Soil: Acampo sandy loam
Irrigation: Drip
Spacing: 6 x 10 ft

Gallo Liberty Vineyard

Established: 2009
Varieties: Cabernet Sauvignon, Merlot, Chardonnay, Pinot grigio, Pinot noir (Syrah & Sauvignon blanc)
Rootstock: 1103 Paulsen
Soil: Tokay fine sandy loam
Irrigation: Drip
Spacing: 7 x 11 ft

Example of High Cordon Trellising:



Source: <https://go.dmacc.edu/programs/viticulture>

Parameters of High Cordon, Machine Pruned Trellising Systems

- 133 Studded T posts every vine
- 10 GA wire
- Spacing 7-8 ft x 10 -11 ft
- Cordon height 60 in (minimum) to 72 in
- Vines trained years 1-3 with shoot thinning (cluster thinning may be needed)
- Hand pruned year 4
- Machine pruned year 5, 8 to 10 inch “box”; Hand touch-up: 3-5 cents per vine
- 50 to 100 HP tractor for hedger/pruner

The Future?

- Mechanization
- Larger scale of operations
- Different variety mix or “new” varieties (e.g. Andy Walker hybrids)
- Small/boutique wineries for direct marketing and/or tourism
 - Traditional varieties, Traditional production; Premium prices
- NOT climate change/global warming/extreme weather

TAILGATE TALK: High Cordon Trellising

Lodi Winegrape Commission, UC Cooperative Extension & Kautz Farms
20 September 2016 – Paul Verdegaal & Joe Valente

Kautz Replicated Trial Juice Data:

1. High Cordon optimized for machine pruning (“HCMP” Row 8)

stats	9-16-2016:	23.4°	6.7 g/L	pH=3.51	-
	Harvest 2015:	23.6°	5.7 g/L	pH=3.77	15.2 tons/acre
	Harvest 2014:	26.7°	6.7 g/L	pH=3.67	14.1 tons/acre

2. Horizontally divided canopy, quad cordon, spur pruned (“HDC Quad” Rows 5 & 17)

stats	9-16-2016:	21.8°	6.5 g/L	pH=3.45	-
	Harvest 2015:	25.5°	4.9 g/L	pH=3.85	14.8 tons/acre
	Harvest 2014:	24.8°	6.4 g/L	pH=3.57	15.0 tons/acre

3. Horizontally divided canopy, cane pruned (“Cane Pruned” Row 11)

stats	9-16-2016:	21.4°	6.3 g/L	pH=3.39	-
	Harvest 2015:	22.8°	5.5 g/L	pH=3.67	13.7 tons/acre
	Harvest 2014:	25.3°	6.6 g/L	pH=3.53	13.0 tons/acre

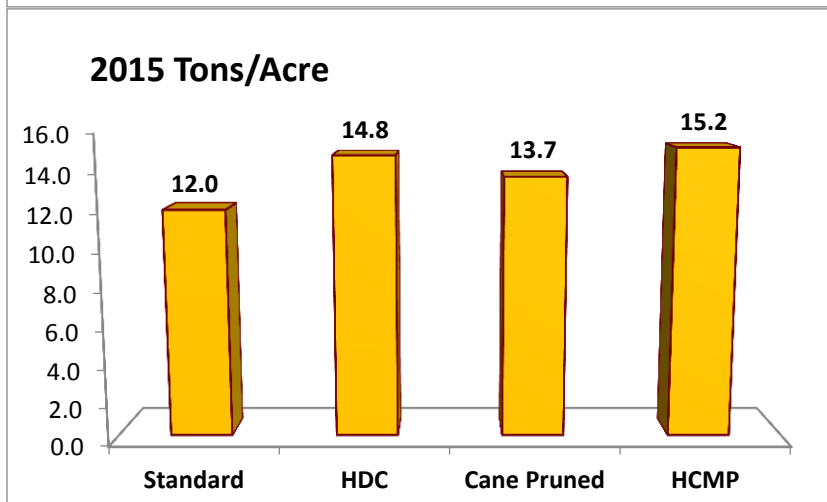
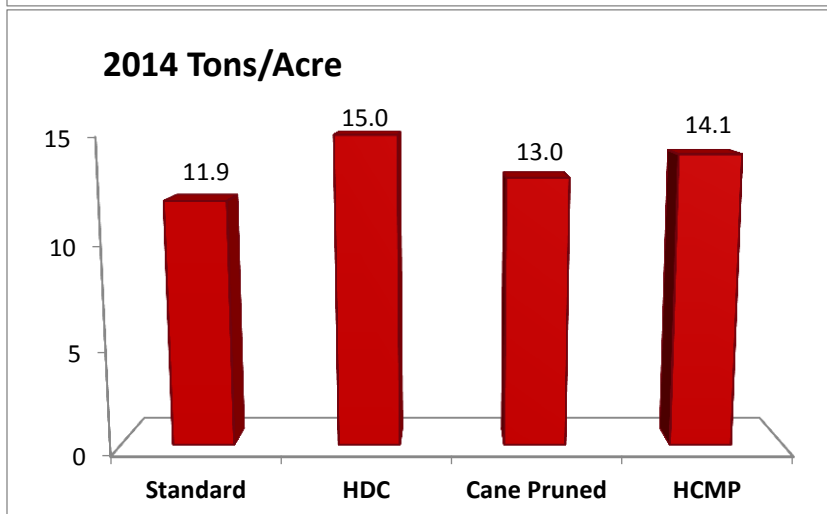
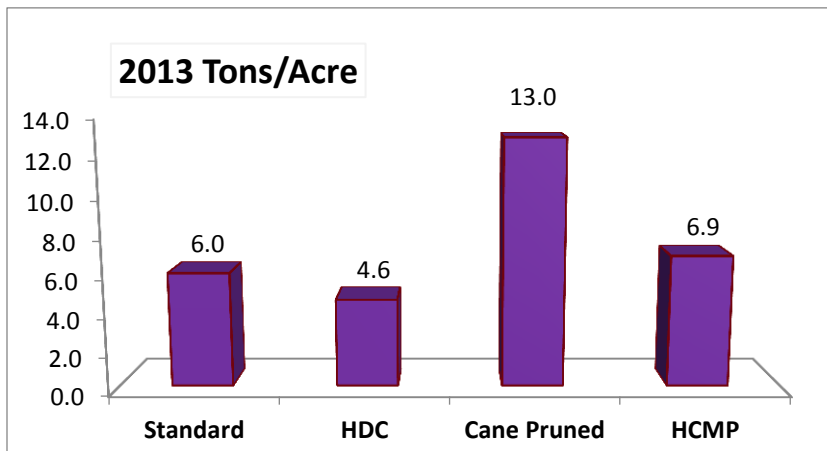
4. Bilateral Cordon, T-top trellis, spur pruned (“Standard” Rows 2 & 14)

stats	9-16-2016:	22.3°	6.4 g/L	pH=3.44	-
	Harvest 2015:	25.5°	5.1 g/L	pH=3.78	12.0 tons/acre
	Harvest 2014:	24.6°	6.5 g/L	pH=3.57	11.9 tons/acre

Notes:

Data Reports.

Kautz Farms Trellising Trial was established in 2011.



LEGEND

Standard = Bilateral Cordon, Spur pruned

HDC = Horizontally Divided Canopy, Quad cordon, Spur pruned

Cane Pruned = Horizontally Divided Canopy, Cane Pruned

HCMP = High Cordon, Machine Pruned

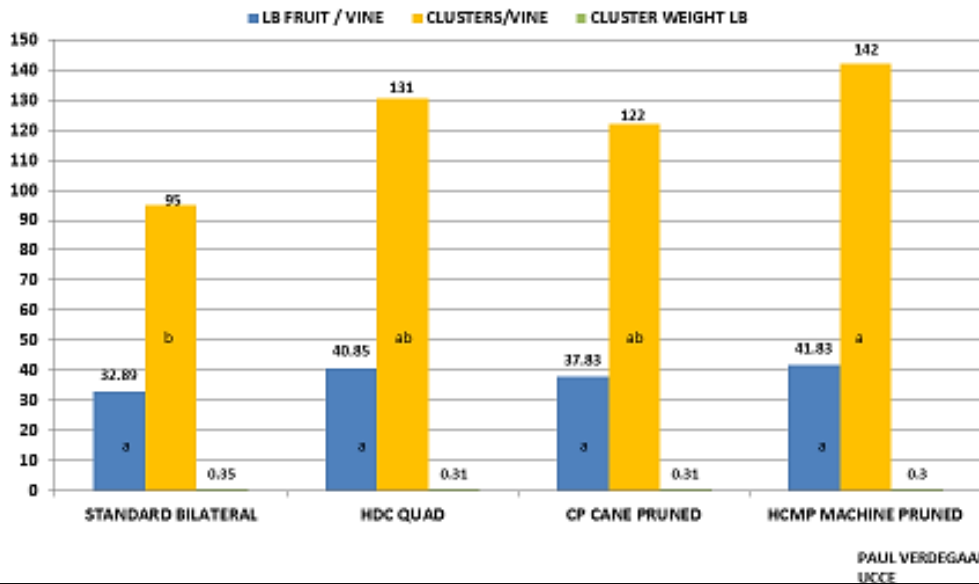
Comparing the 2015 yield in tons per acre to the previous two harvests, it appears that the HDC and HCMP treatments have caught up to the Cane Pruned system in yield. The Cane Pruned vines are still slightly ahead in cumulative yield for the first three harvests with a total of 39.7 tons versus 36.3 tons for the HCMP and 34.4 tons for the HDC, while the Standard Bilateral Cordon total is lowest at 29.9 tons for the three years.

Fruit differences are relatively small between systems and all are well within desirable ranges of harvest ripeness. Another harvest or two may be indicative of long term expectations. Ultimately, wine lots would be instructive.

TRELLIS COMPARISON TRIAL

KAUTZ VINEYARDS

2015



LEGEND

STANDARD

BILATERAL = Bilateral Cordon, Spur pruned

HDC QUAD = Horizontally Divided Canopy, Quad cordon, Spur pruned

CP CANE PRUNED = Horizontally Divided Canopy, Cane Pruned

HCMP MACHINE PRUNED = High Cordon

In 2015, there were no significant differences in the pounds of fruit/vine between the four trials (range = 32.89 – 41.83 lbs).

High Cordon (HCMP) trellising had more clusters/vine (142) than the standard bilateral system (95), but statistically the same clusters/vine as the horizontally divided canopies (131 and 122).

There were no significant differences between cluster weights (range = 0.30 – 0.35 lbs).

Thanks to:

Joe Valente, Kautz Vineyards

John Kautz Farms

Ernie and Jeff Dosio, Pacific AgriLands, Inc.

Gallo Vineyards

Lodi Winegrape Commission LWC

Lodi District Grape Growers Association LDGGA