

The quest to find superior avocado rootstocks (AV07008)

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VC project: Simpson Farm Pty Ltd & Birdwood Nursery



Know-how for Horticulture™



Aim

Identify superior rootstocks that have been excluded from existing Australian rootstock trials

Trial site

- Established in 2004 in Childers, Central Queensland
- Trial extends over 4 ha
- 11 rootstocks with Shepard as scion & 33 rootstocks with Hass as scion
- Five replicated plots of three trees each per rootstock with a guard tree between each plot



Trial site

- Deep well drained red soils with low Pc pressure
- Standard farm management practices



Trial monitoring

- Yields per tree, by mass and fruit number
- Fruit quality assessments after cold storage
- Tree health ratings in July (pre-flowering)
- Graft compatibility rating
- Measure tree vigour



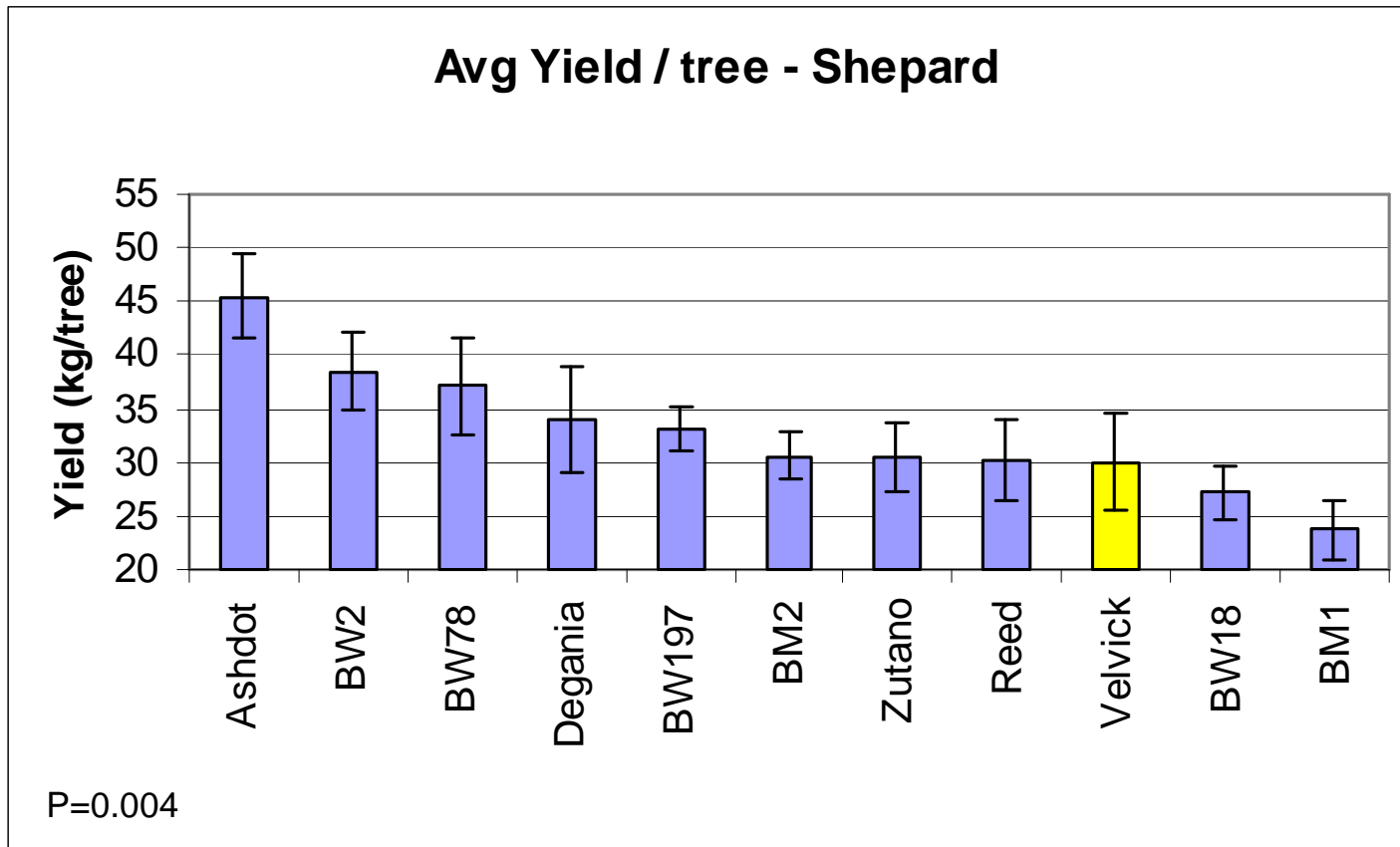
'Shepard'		'Hass'	
Seedling rootstocks	Clonal rootstocks	Seedling rootstocks	Clonal rootstocks
'Ashdot' (Israel)	BM1 (RSA)	'Ashdot' (Israel)	BM1 (RSA)
'Degania' (Israel)	BM2 (RSA)	'Degania' (Israel)	BM2 (RSA)
'Reed' (USA)		'Reed' (USA)	'Duke 7' (USA)
'Zutano' (USA)		'Zutano' (USA)	BC101 (Aus)
BW18 (Aus)		BW127 (Aus)	BC128 (Aus)
BW197 (Aus)		BW128 (Aus)	BC16 (Aus)
BW2 (Aus)		BW140 (Aus)	BC19 (Aus)
BW78 (Aus)		BW16 (Aus)	BC197 (Aus)
'Velvick' (Aus)		BW181 (Aus)	BC62 (Aus)
		BW19 (Aus)	BC7 (Aus)
		BW197 (Aus)	'Velvick' (Aus)
		BW2 (Aus)	
		BW5 (Aus)	
		BW6 (Aus)	
		BW62 (Aus)	
		BW68 (Aus)	
		BW7 (Aus)	
		BW70 (Aus)	
		BW78 (Aus)	
		BW80 (Aus)	
		BW93 (Aus)	
		'Velvick' (Aus)	



Shepard



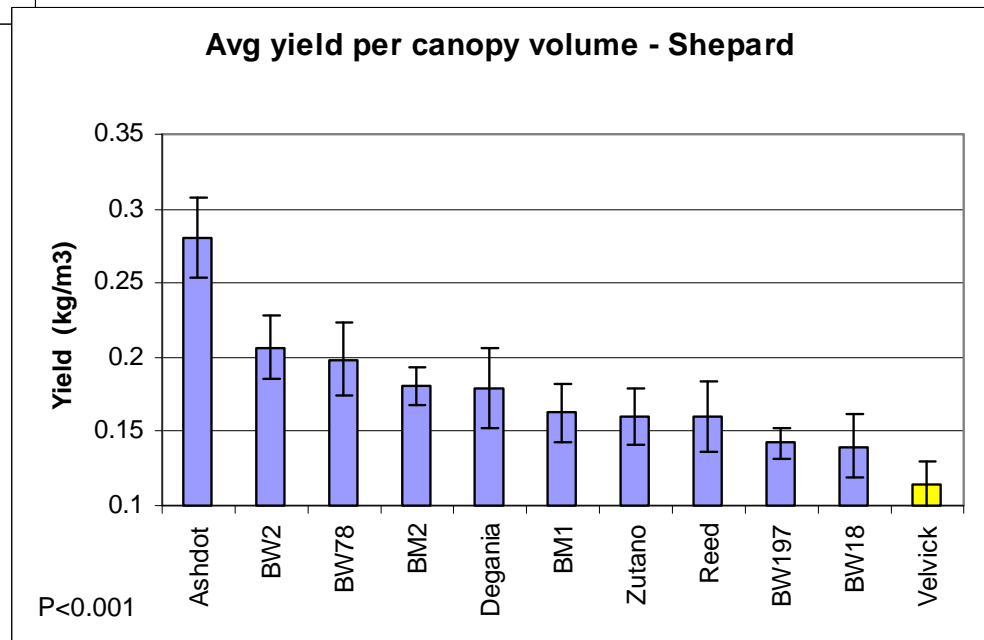
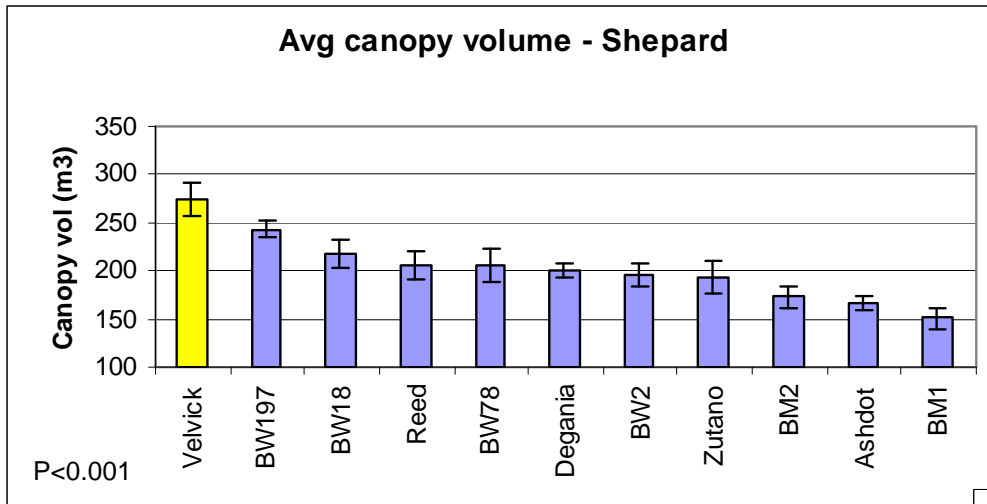
Average yield per tree - 2009



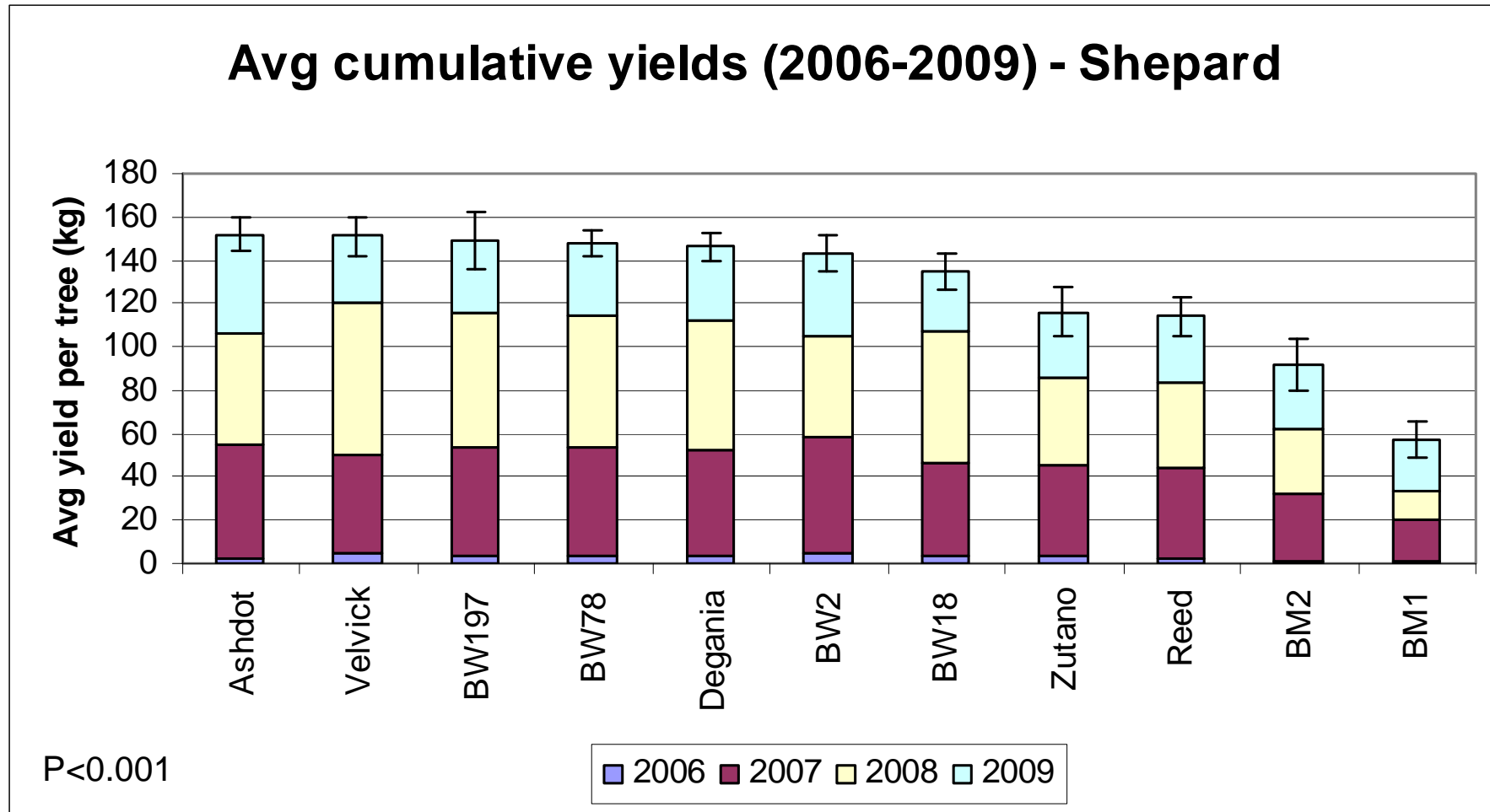
Rootstock	Tons / ha
Ashdot	8.18
BW2	6.93
BW78	6.69
Degania	6.13
BW197	5.96
BM2	5.52
Zutano	5.50
Reed	5.45
Velvick	5.41
BW18	4.90
BM1	4.27

Spacing 11 x 5m: 180 trees / ha

Tree size & effective yield



Cumulative yield (2006-2009)



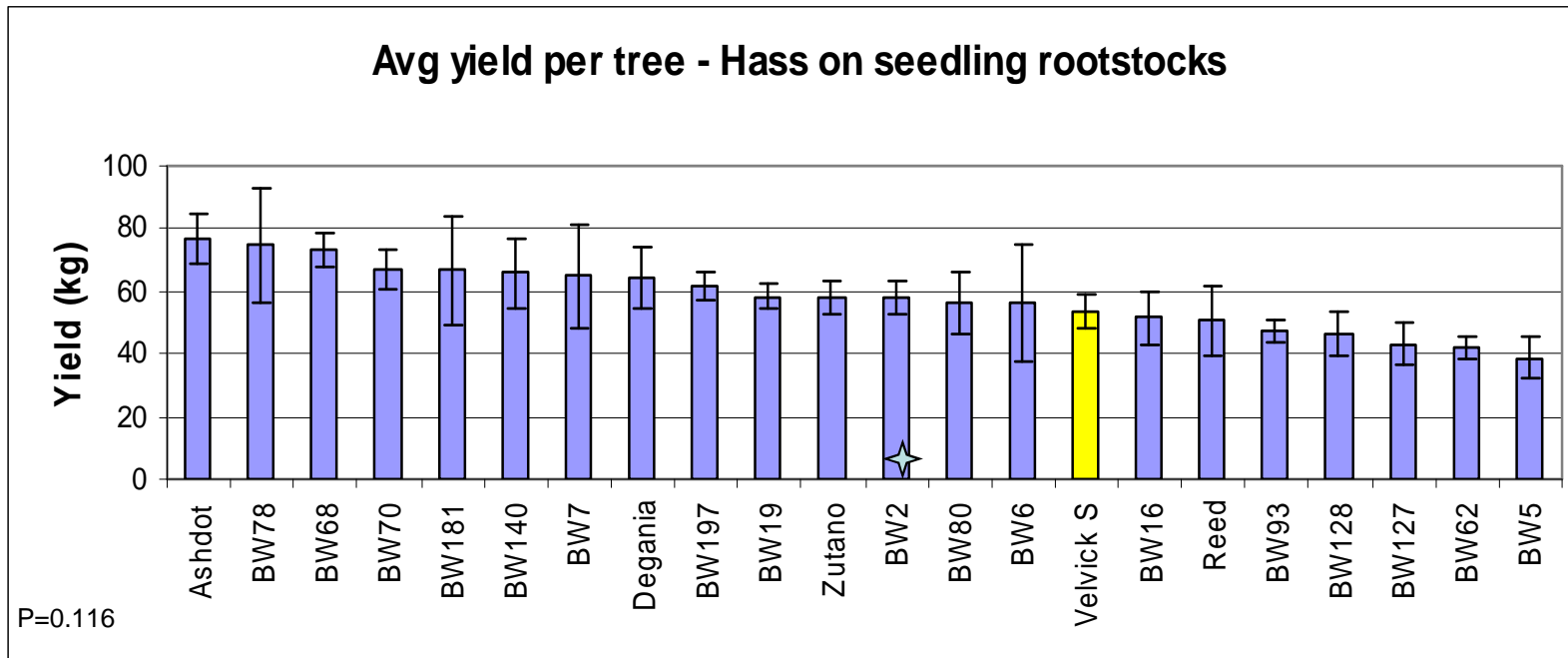
Tree health rating and graft compatibility



Hass



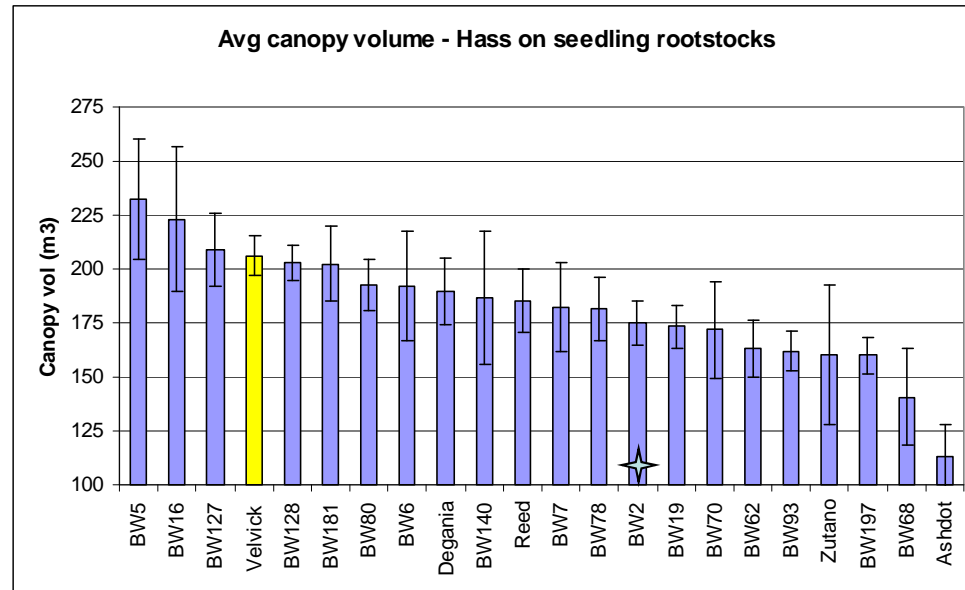
Average yield per tree 2009 – seedling rootstocks



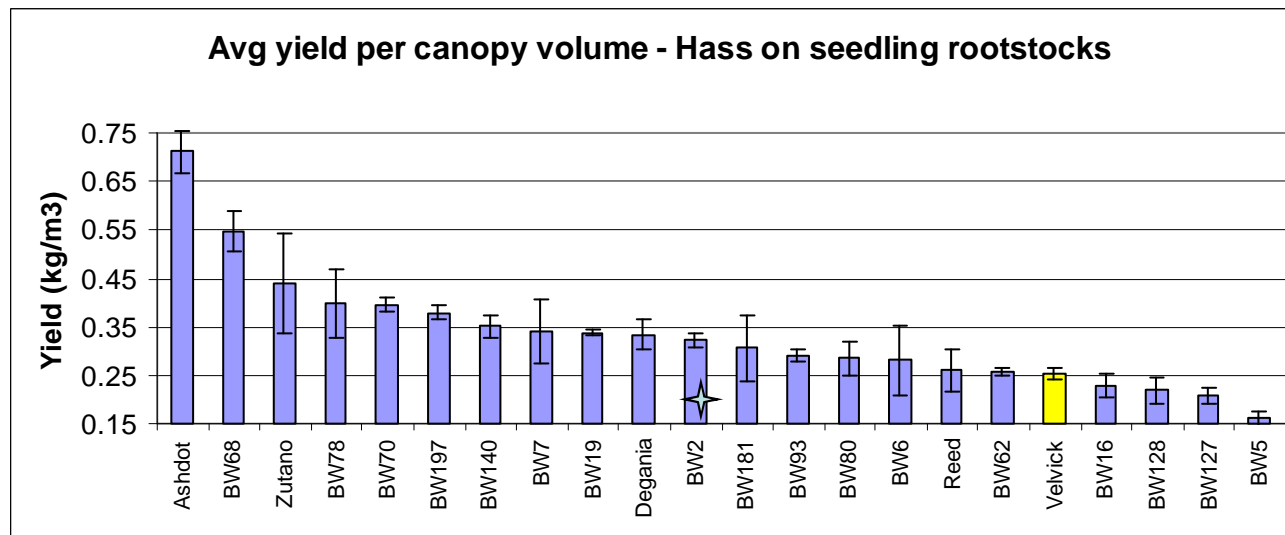
Rootstock	Tons / ha
Ashdot	13.87
BW78	13.45
BW68	13.23
BW70	12.03
BW181	11.99
BW140	11.84
BW7	11.67
Degania	11.55
BW197	11.09
BW19	10.52
Zutano	10.48
BW2	10.43
BW80	10.14
BW6	10.12
Velvick S	9.67
BW16	9.24
Reed	9.09
BW93	8.54
BW128	8.37
BW127	7.76
BW62	7.62
BW5	6.95

Spacing 11 x 5m: 180 trees / ha

Tree size & effective yield – seedling rootstocks

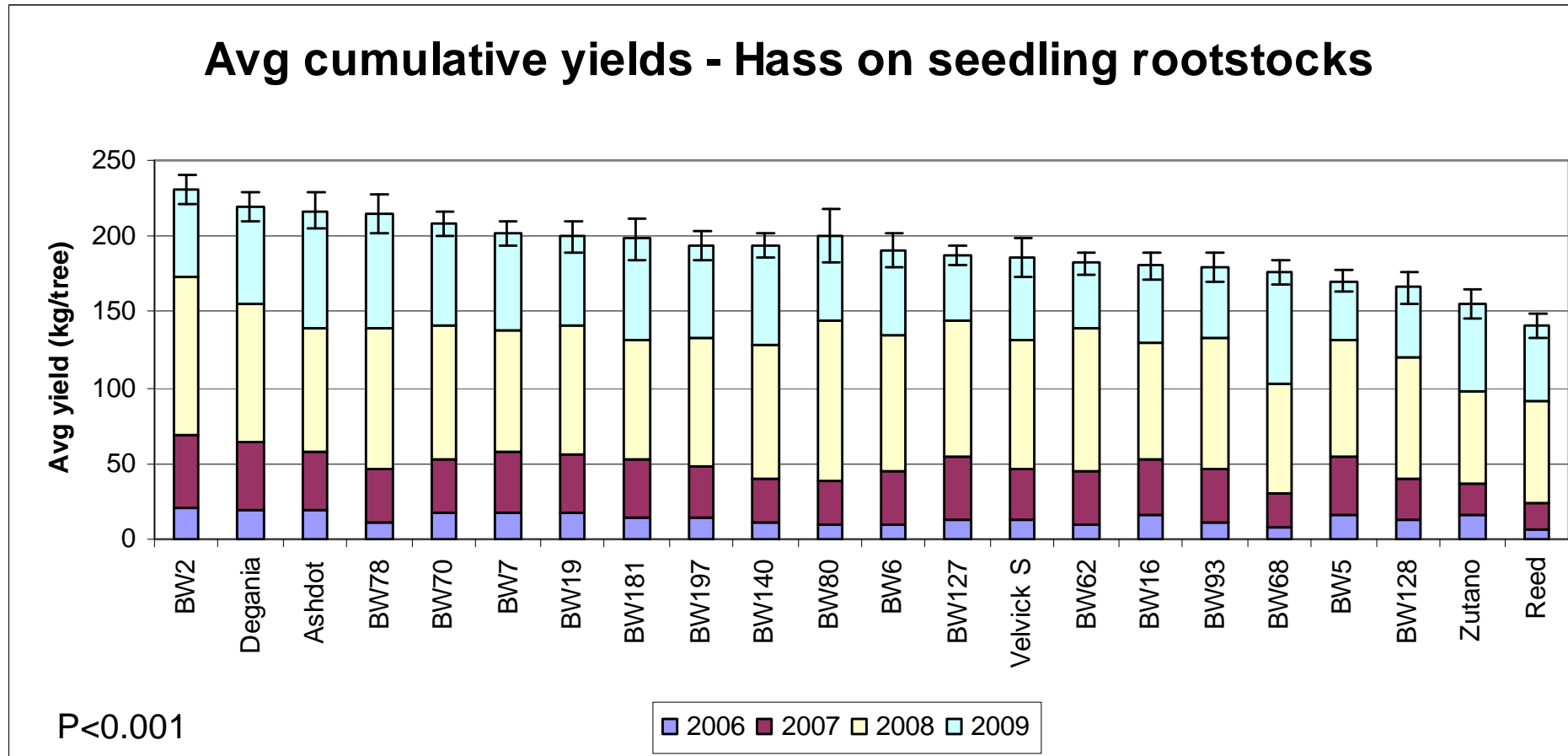


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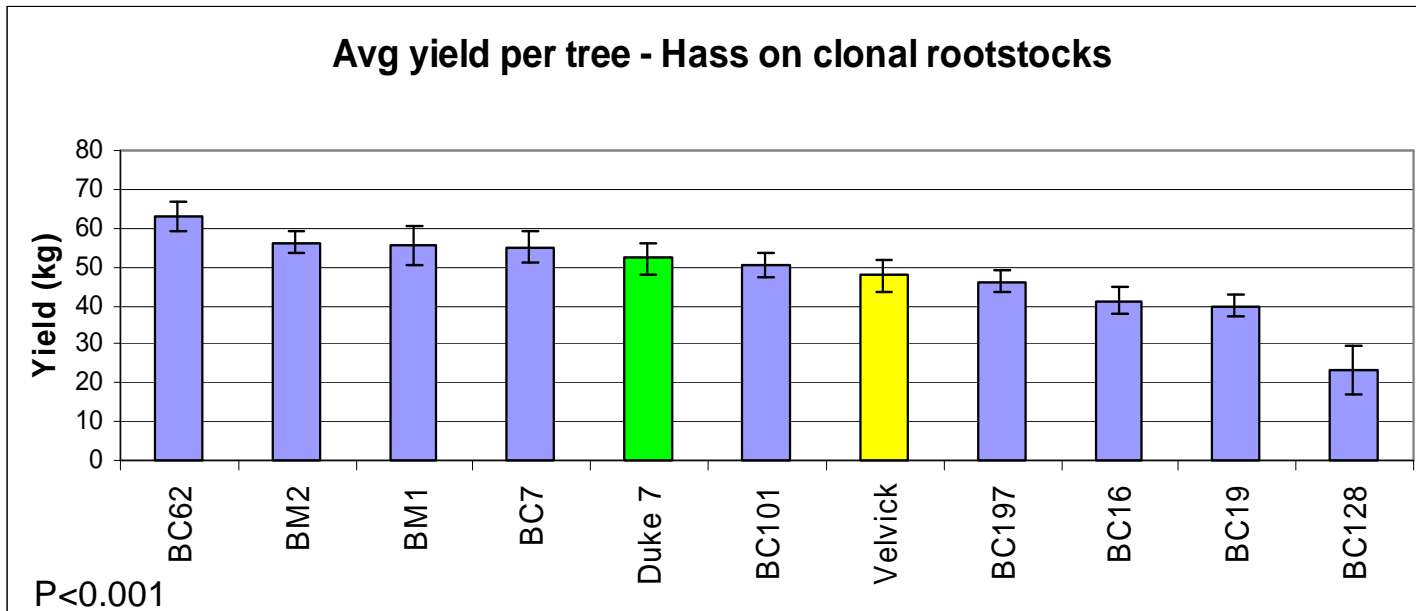


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Cumulative yield (2006-2009) – seedling rootstocks



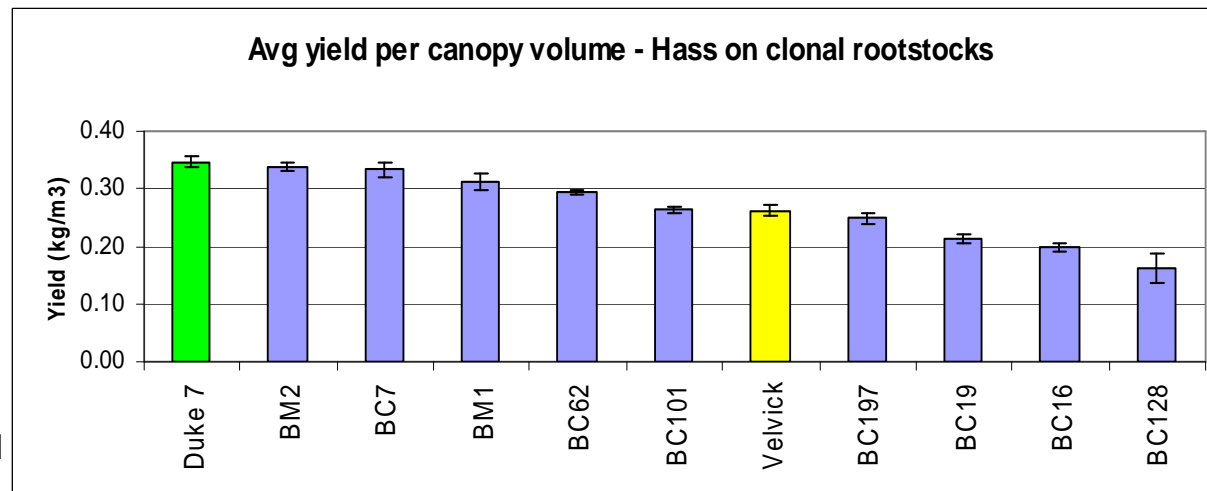
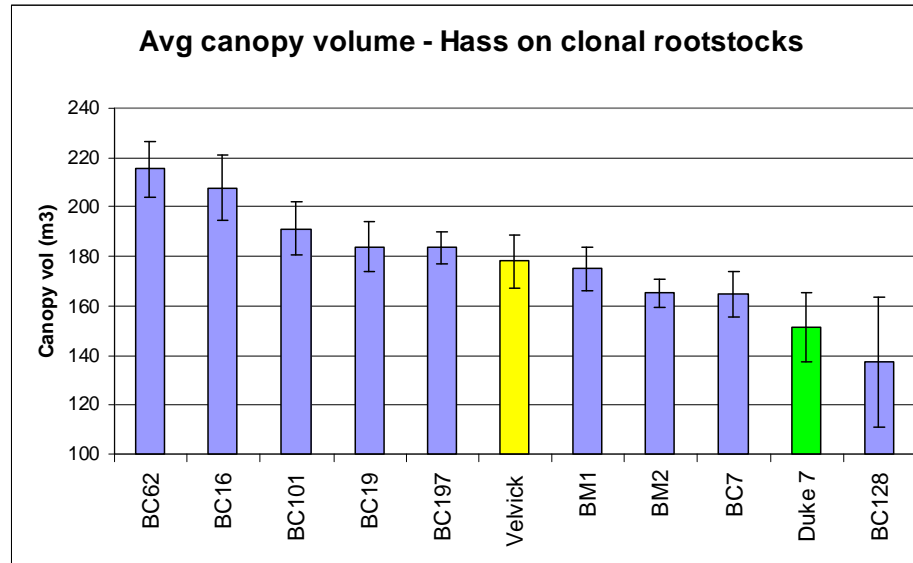
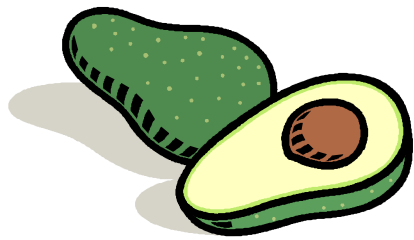
Average yield per tree 2009 – clonal rootstocks



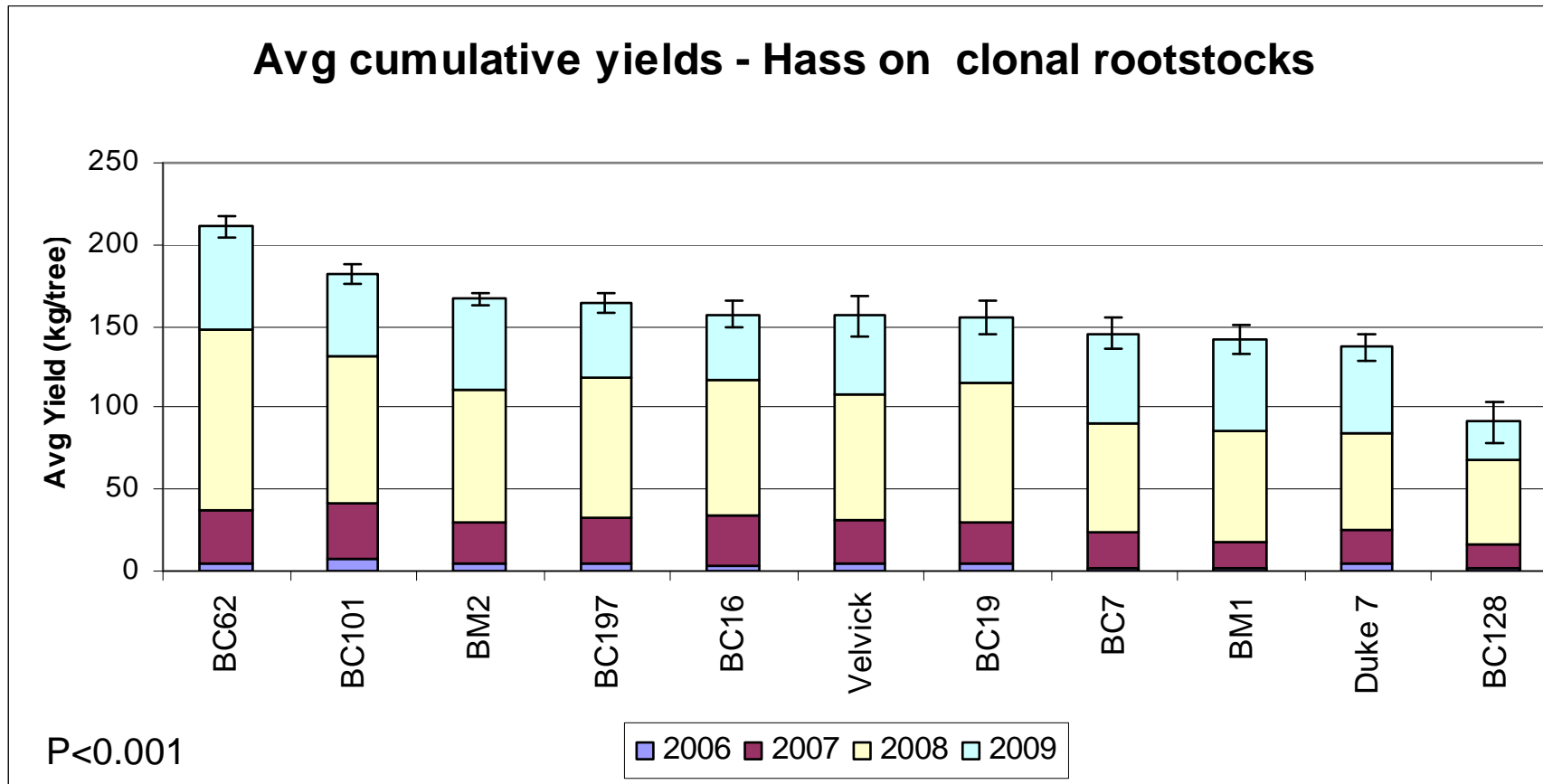
Rootstock	Tons / ha
BC62	11.36
BM2	10.11
BM1	10.01
BC7	9.89
Duke 7	9.39
BC101	9.10
Velvick C	8.56
BC197	8.32
BC16	7.41
BC19	7.20
BC128	4.20

Spacing 11 x 5m: 180 trees / ha

Tree size & effective yield – clonal rootstocks



Cumulative yield (2006-2009) – clonal rootstocks



Tree health rating and graft compatibility



Conclusions

- Seedling rootstocks
 - Ashdot appear to be a dwarfing rootstock with both Hass and Shepard as scion,
 - Ashdot produced the highest yield and was the most productive rootstock
- Clonal rootstocks
 - BC62 has consistently produced the highest yield for the past 4 season and is the most vigorous tree

Acknowledgments

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