



	Paarl		Worcester		Hex Valley		Franschhoek	
	table grapes	wine grapes	table grapes	wine grapes	table grapes	wine grapes	table grapes	wine grapes
area (ha)	1169	12720	639	2898	4231	7	-	1599
yield 2005 (kg/ha)	28889	23497	21742	22928	25661	20712	-	25164
yield 2006 (kg/ha)	33924	22900	15649	24577	28588	22967	-	24669
water use efficiency Sep '04- Apr '05 (kg/m³)	4.5	5.3	2.8	3.3	3.8	3.9	-	4.1
water use efficiency Sep '05- Apr '06 (kg/m³)	4.4	4.8	1.9	3.5	3.7	3.7	-	3.5
water consumption (ET _{act}) Sep '04-Apr '05 (mm)	684	478	818	716	698	543	-	635
water consumption (ET _{act}) Sep '05-Apr '06 (mm)	833	517	909	738	828	643	-	741

Conclusions

The Surface Energy Balance Algorithm for Land (SEBAL) provides spatial information on water consumption (actual evapotranspiration), yield and water use efficiency of table and wine grapes. Water use efficiency expresses the production per unit of water (kg/m³). Water use efficiency of grapes in Western Cape is in general quite good, although it varied considerably between fields, regions and between years.

Variation in water use efficiency is among others explained by the amount of water stored in reservoirs (depending on reservoir capacity and on replenishment in winter) and by the costs of water (e.g. pumping costs). Furthermore the management strategy of the farmer plays an important role, e.g. in Paarl farmers are specialised in high quality wine grapes that need low water inputs while in Worcester wine grapes are mainly used in the brandy industry in which quantity if of higher importance.

Water use efficiency for wine grapes is highest in Paarl, where water consumption is low. In Worcester water consumption of wine grapes is considerably higher, while yields are comparable to those in Paarl, resulting in lower water efficiencies. High water use efficiencies for wine grapes are obtained by low water consumption rates.

Table grapes in Hex Valley, Paarl and Worcester consume similar amounts of water, but production varies considerably. Water use efficiency of table grapes is two times higher in Paarl than in Worcester because a large difference in production rates. Water use efficiency of table grapes is thus mainly determined by the yield; higher yields result in higher water use efficiencies.