

Monthly crop coefficient, Kc

Crops	July	August	September	October	November	December	January	February	March	April	May	June
Almonds		0.41	0.58	0.80	0.90	0.90	0.90	0.90	0.83	0.71		
Apples			0.61	0.73	0.88	0.95	0.95	0.95	0.95	0.90	0.80	
Apricots			0.56	0.68	0.83	0.90	0.90	0.90	0.90	0.83	0.71	
Artichokes - 1st Year	1.00	1.00	0.97	0.50	0.59	0.92	1.00	1.00	1.00	1.00	1.00	1.00
Artichokes - 2nd Year	1.00	0.97		0.54	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Asparagus	0.53	0.50	0.50	0.50	0.75	0.95	0.95	0.95	0.95	0.95	0.95	0.91
Avocados	0.61	0.69	0.78	0.84	0.85	0.85	0.85	0.84	0.81	0.78	0.67	0.60
Banana	1.00	1.00	1.02	1.11	1.19	1.20	1.20	1.20	1.20	1.20	1.09	1.00
Banksia ³	0.69	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.71	0.73	0.74	0.72
Bare Soil	0.36	0.26	0.29	0.18	0.08	0.10	0.07	0.14	0.09	0.19	0.24	0.36
Beans Dry						0.40	0.76	1.15	0.73			
Beans Green			0.50	0.82	1.02							
Beetroot (Beets, table FAO56)							0.50	0.62	1.02	1.03		
Blueberries			0.32	0.57	0.89	1.05	1.05	1.05	1.05	0.90	0.63	
Boronia ³	1.04	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.10	1.11	1.08
Broad Beans	1.01	0.36								0.50	0.66	1.12
Broccoli	1.02								0.70	0.74	0.95	1.05
Brussel Sprouts						0.70	0.70	0.77	0.94	1.05	1.04	0.97
Cabbages	0.99								0.70	0.78	1.00	1.05
Canola	0.93	1.00	0.95	0.56						0.35	0.36	0.60
Cantaloupe					0.50	0.62	0.82	0.80				
Capsicums (Sweet peppers FAO56)				0.60	0.77	1.03	1.05	1.05	1.05	0.97		
Carrots - Summer				0.72	0.98	1.05	1.01					
Carrots - Winter	1.05	1.01								0.70	0.83	1.04
Cauliflowers	1.01								0.70	0.78	0.98	1.05
Celery								0.70	0.73	0.96	1.05	1.04
Cereal (Barley, Oats, Wheat)	1.00	1.15	1.11	0.58							0.30	0.50
Cherries			0.61	0.73	0.88	0.95	0.95	0.95	0.95	0.90	0.80	
Chickpeas	0.98	1.00	0.95	0.56							0.40	0.60
Chinese Cabbage (Canola Kc FAO56) ⁶									0.72	0.98	1.02	
Citrus - No Cover	0.70	0.70	0.69	0.67	0.66	0.65	0.65	0.65	0.65	0.66	0.68	0.69
Citrus - With Cover	0.75	0.75	0.74	0.72	0.71	0.70	0.70	0.70	0.70	0.71	0.73	0.74
Clover Seed	0.40	0.60	0.98	1.15	1.05	0.67						0.40
Coffee	1.10	1.10	1.10	1.10	1.10	1.10	1.05	1.05	1.07	1.10	1.10	1.10
Cotton				0.35	0.60	1.05	1.15	1.11	0.85			
Cowpeas/GreenGram						0.40	0.58	1.03	0.81			
Cucumbers					0.60	0.83	1.00	0.98	0.82			
Date Palms	0.90	0.94	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90
Eggplant				0.60	0.76	1.02	1.05	1.02	0.93			
Faba Beans	0.98	1.15	1.15	0.85	0.41						0.50	0.54
Garlic	1.00	1.00	1.00	1.00	0.86	0.73			0.70	0.81	0.98	1.00
Geraldton Wax ³	1.04	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.10	1.11	1.08
Jojoba ²	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Lentils	0.92	1.10	1.10	0.82	0.41						0.40	0.44
Lettuce - Spring	0.72	0.94	0.98									
Lettuce - Winter	0.98										0.72	0.94
Leucadendron ³	0.69	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.71	0.73	0.74	0.72
Linseed/Flax	1.00	1.10	1.10	1.09	0.77	0.38					0.35	0.49
Lucerne Fodder (SE) ⁶	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Lucerne for Hay	0.90	0.91	0.94	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.90	0.90
Lucerne for Seed (FAO56)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Lucerne for Seed (SE) ⁶	0.75	0.75	0.91	0.95	0.95	0.86	0.50	0.50	0.47	0.25	0.46	0.75
Maize/Corn Grain			0.30	0.40	0.99	1.20	1.13	0.81	0.62			
Millet			0.30	0.62	1.00	0.77	0.33					
Olives	0.50	0.50	0.65	0.66	0.68	0.69	0.70	0.70	0.70	0.70	0.70	0.58
Olives - Reduced Yield ¹	0.50	0.50	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.56
Onions - Dry	1.04	1.05	1.05	1.05	0.92	0.79					0.70	0.82
Onions - Green	0.99	1.00	1.00	1.00							0.70	0.80
Onions - Seed	1.05	1.05	1.05	1.05	0.94	0.83			0.70	0.83	1.03	1.05
Open Water	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Palm Trees	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Parsnips	1.02								0.50	0.56	0.89	1.05
Peaches			0.56	0.68	0.83	0.90	0.90	0.90	0.90	0.83	0.71	
Peaches - Reduced Yield ⁵			0.57	0.47	0.42	0.68	0.90	0.90	0.90	0.83	0.71	
Pears			0.61	0.73	0.88	0.95	0.95	0.95	0.95	0.90	0.79	
Peas Dry	1.15	0.85									0.50	0.80
Peas Fresh	0.69	1.14	1.14									0.50
Pecans			0.56	0.68	0.83	0.90	0.90	0.90	0.90	0.83	0.70	
Perennial Pasture - High Input	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Perennial Pasture - High Input (SE) ⁶	0.40	0.75	1.05	1.05	1.05	1.05	1.05	1.05	1.05	0.96		

Perennial Pasture - Low Input	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
Perennial Pasture - Medium Input	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
Perennial Pasture - Rotated Grazing (SE) ⁶	0.40	0.64	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
Pimelea ³	0.69	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.71	0.73	0.74	0.72	
Pineapples	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Pistachios				0.42	0.70	1.03	1.10	1.07	0.69				
Plums			0.56	0.68	0.83	0.90	0.90	0.90	0.90	0.83	0.71		
Potatoes - Summer							0.50	0.65	1.11	1.14	0.92		
Potatoes - Winter	0.50	0.59	1.06	1.15	1.00	0.76							
Protea ³	0.69	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.71	0.73	0.74	0.72	
Pumpkins				0.50	0.56	0.92	0.99	0.87					
Radishes - Summer			0.73	0.89									
Radishes - Winter										0.70	0.87		
Rhubarb (Beets, table FAO56)	0.99	0.87	0.50	0.50	0.50	0.77	1.00	1.00	1.00	1.00	1.00	1.00	
Rockmelons (Sweet melon FAO56)				0.50	0.68	0.85	0.83	0.67					
Sesame						0.35	0.77	1.10	0.80				
Silverbeet (Beets, table FAO56)						0.59	1.02	0.99					
Sorghum			0.30	0.45	0.94	0.99	0.72						
Soybeans						0.40	0.88	1.15	1.15	0.98	0.60		
Spinach	0.98									0.72	0.93	1.00	
Spring Onion - Summer (Onions, Kc FAO56)			0.70	0.74	0.97								
Spring Onion - Winter (Onions, Kc FAO56)	1.00									0.71	0.87	1.00	
Strawberries	0.85	0.85	0.85	0.79	0.75				0.40	0.44	0.68	0.85	
Sunflower				0.35	0.45	1.02	1.15	0.76					
Sweet Potato				0.54	1.01	1.15	1.12	0.83					
Sweetcorn			0.30	0.62	1.14	1.12							
TableGrapes			0.30	0.42	0.75	0.85	0.85	0.84	0.59				
Tea	0.95	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	
Tomatoes			0.60	0.63	0.96	1.15	1.12	0.90					
Turf - Summer Active (warm season FAO56)			0.81	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85		
Turf - Year Round Active (cool season FAO56)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Turnips										0.50	0.65	1.08	1.00
Walnuts			0.50	0.72	1.10	1.10	1.10	1.10	1.06	0.79			
WaterMelons				0.44	0.87	0.98	0.83						
Winegrapes			0.32	0.55	0.70	0.70	0.70	0.70	0.63	0.51			
Winegrapes - ReducedYield ⁴				0.29	0.39	0.43	0.43	0.43	0.39	0.24	0.16		
Zucchini				0.50	0.56	0.88	0.88						

Unless otherwise stated, all Kc values are taken from FAO56, and fitted to Southern Hemisphere crop calendars.

Allen, R.G., L.S. Pereira, D. Raes, and M. Smith, 1998. *Crop Evapotranspiration; Guidelines for Computing Crop Water Requirements*,

FAO Irrigation and Drainage Paper, 56, Food and Agriculture Organization of the United Nations, Rome

Crop coefficients are suitable for use with evapotranspiration (ET_o) calculated according to FAO56. They are not intended for use with Class A Pan evaporation.

References

¹ Crop co-efficients published by Beede, RH and David A. Goldammer. 1994.

"Chapter 11, Olive Irrigation Management" *Olive Production Manual*, Louise F. Ferguson, GS Sibbett, and GC Martin. California: University of California.

² Kc values are derived from crop factors published by Benzioni, A., 1997.

New Crop Factsheet: Jojoba. West Lafayette, Indiana: Centre for New Crops and Plant Products, Purdue University.

³ Kc values derived from crop factors published by Burke, K. and Parlevliet, G. 2001.

Irrigation of Native Cut Flowers in Western Australia, Department of Agriculture Farmnote No. 03/2002, Department of Agriculture, Perth, Western Australia.

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⁴ Kc values are derived from crop factors provided by McCarthy, M., 2000, Pers. Comm.

⁵ Kc values are derived from crop factors published by Mitchell, P.D. and I. Goodwin, 1996.

Micro-Irrigation of Vines and Fruit Trees, Agmedia, East Melbourne. Victoria.

⁶ Co-efficients arranged according to crop calendars provided by irrigators in the South East of South Australia.

Crop Kc are compiled by the Irrigated Crop Management Service (ICMS), Rural Solutions SA



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