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## APPENDIX - A

## CROP COEFFICIENTS

All the methods discussed in previous chapters provide the method of estimating Reference crop evapotranspiration (ET<sub>0</sub>). The crop coefficients (k<sub>c</sub>) presented here relate the ET<sub>0</sub> to crop evapotranspiration (ET crop).

The k<sub>c</sub> value of a crop varies with its development. Basically, four different development stages can be identified. They are

Initial stage - from germination to early growth when earth surface is not or hardly covered by crop.

Crop development stage - from end of initial stage to obtain full ground cover

Mid season stage - from end of crop development stage to time of start of full maturity.

Late season stage - from end of mid season to full maturity.

Crop coefficient for initial stage could be directly read from the graph given in Figure - A-1. This value is a function of reference crop evapotranspiration (ET<sub>0</sub>) during initial stage and the frequency of irrigation.

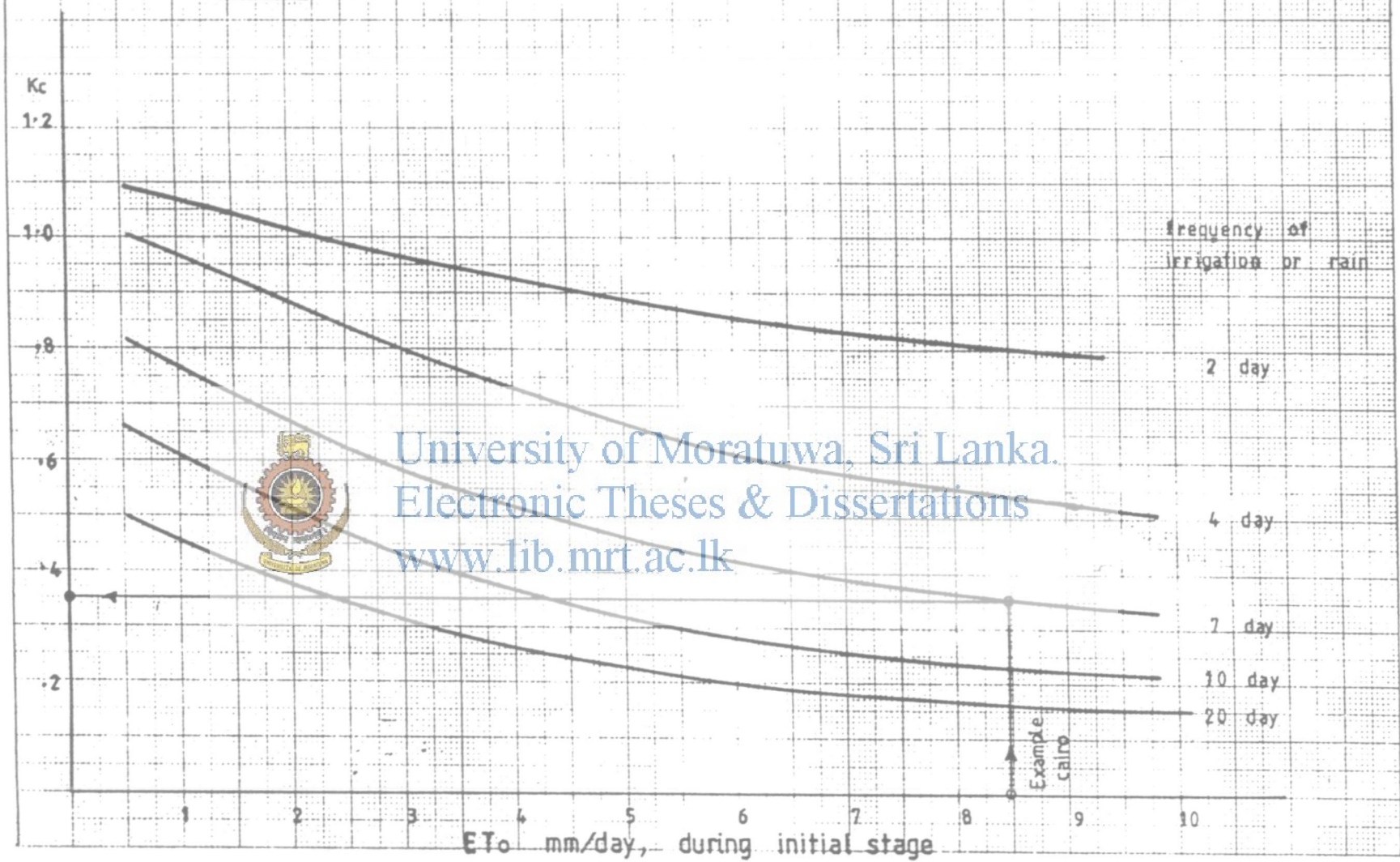
The k<sub>c</sub> value for mid and late seasons could be read from table A-1 which shows the values for different climatic conditions. Linear variations of k<sub>c</sub> could be assumed for crop development and late seasons and the average (k<sub>c</sub>) values can be adopted in computations. The example in Figure A-2 shows the crop coefficients developed for maize at Cairo. This can be used for further clarification.

The length of growing seasons and crop development stages of selected crops and rice are given in table A-2 and A-3. However the available local values should be utilised as far as possible.



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FIG - A 1



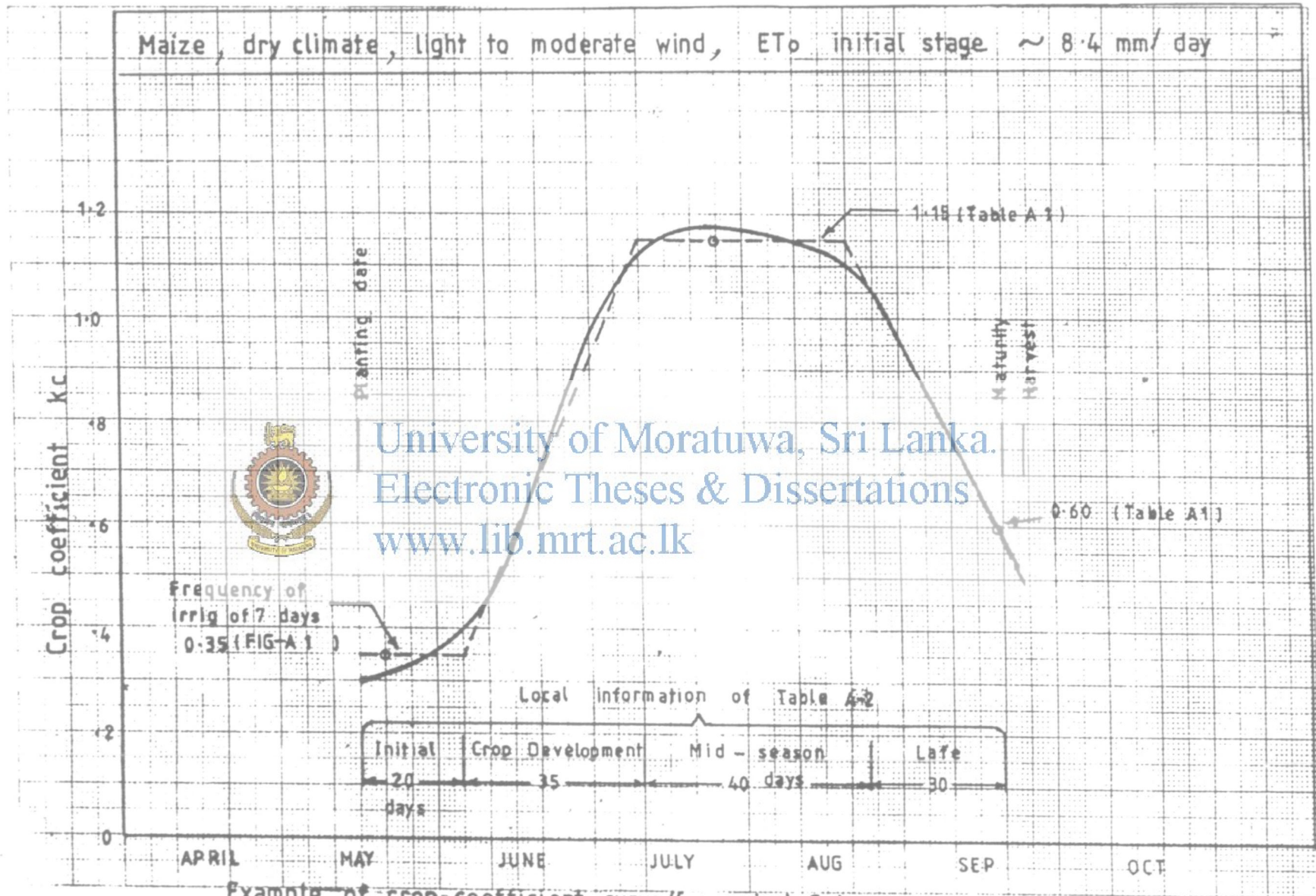
Average kc for initial stage as a function of average ET<sub>0</sub> level (during initial stage) and frequency of irrigation or of significant rain.

Source: Doorenbos and Pruitt (1975)



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FIG - A 2



Example of crop coefficient curve (for maize) Cairo

Source: Doorenbos and Pruitt (1975)

Table- A-1

CROP COEFFICIENT Kc FOR FIELD AND VEGETABLE CROPS FOR  
DIFFERENT STAGES OF CROP GROWTH AND PREVAILING CLIMATIC  
CONDITIONS

Crop	Humidity		RH min > 70 %		RH min < 20 %	
	Wind m/sec		0-5	5-8	0-5	5-8
<u>Crop stage</u>						
All field crops	initial crop dev.2		Use Fig. A - 1 by interpolation			
Artichokes (perennial - clean cultivated)	mid-season	3	.95	.95	1.0	1.05
	at harvest	4	.9	.9	.95	.1
Barley		3	1.05	1.1	1.15	1.2
		4	.25	.25	.2	.2
Beans(green)		3	.95	.95	1.0	1.05
		4	.85	.85	.9	.9
Beans (dry) Pulses		3	1.05	1.1	1.15	1.2
		4	.7	.7	.25	.25
Beets(table)		3	1.0	1.0	1.05	1.1
		4	.9	.9	.95	1.0
Carrots		3	1.0	1.05	1.1	1.15
		4	.7	.75	.8	.85
Castorbeans		3	1.05	1.1	1.15	1.2
		4	.5	.5	.5	.5
Celery		3	1.0	1.05	1.1	1.15
		4	.9	.95	1.0	1.05
Corn(sweet) (maize)		3	1.05	1.1	1.15	1.2
		4	.95	1.0	1.05	1.1
Corn(grain) (maize)		3	1.05	1.1	1.15	1.2
		4	.55	.55	.6	.6
Cotton		3	1.05	1.15	1.2	1.25
		4	.65	.65	.65	.7
Crucifers(cabbage, cauliflower, broccoli, Brussels sprout)		3	.95	1.0	1.05	1.1
		4	.80	.85	.9	.95
Cucumber		3	.9	.9	.95	1.0
	Fresh market	4	.7	.7	.75	.8
	Machine harvest	4	.85	.85	.95	1.0

Table A-1 (continued)

<u>CROP COEFFICIENT Kc FOR FIELD AND VEGETABLE CROPS FOR DIFFERENT STAGES OF CROP GROWTH AND PREVAILING CLIMATIC CONDITIONS</u>						
Crop	Humidity	RH min > 70%		RH min < 20%		
		Wind m/sec	0-5	5-8	0-5	5-8
<u>Crop stage</u>						
Egg plant (aubergine)	3		.95	1.0	1.05	1.1
	4		.8	.85	.85	.9
Flax	mid-season 3		1.0	1.05	1.1	1.15
	at harvest 4		.25	.25	.2	.2
Grain	3		1.05	1.1	1.15	1.2
	4		.3	.3	.25	.25
Lentil	3		1.05	1.1	1.15	1.2
	4		.3	.3	.25	.25
Lettuce	3		.95	.95	1.0	1.05
	4		.9	.9	.9	1.0
Mellon	3		.95	.95	1.0	1.05
	4		.65	.65	.75	.75
Millet	3		1.0	1.05	1.1	1.15
	4		.3	.3	.25	.25
Oats	3		1.05	1.1	1.15	1.2
	4		.25	.25	.2	.2
Onion (dry)	3		.95	.95	1.05	1.1
	4		.75	.75	.8	.85
(green)	3		.95	.95	1.0	1.05
	4		.95	.95	1.0	1.05
Peanuts (groundnuts)	3		.95	1.0	1.05	1.1
	4		.55	.55	.6	.6
Peas	3		1.05	1.1	1.15	1.2
	4		.95	1.0	1.05	1.1
Peppers(fresh)	3		.95	1.0	1.05	1.1
	4		.8	.85	.85	.9
Potato	3		1.05	1.1	1.15	1.2
	4		.7	.7	.75	.75
Radishes	3		.8	.8	.85	.9
	4		.75	.75	.8	.85
Safflower	3		1.05	1.1	1.15	1.2
	4		.25	.25	.2	.2



Table A-1 (continued)

<u>CROP COEFFICIENT Kc FOR FIELD AND VEGETABLE CROPS FOR</u>					
<u>DIFFERENT STAGES OF CROP GROWTH AND PREVAILING CLIMATIC</u>					
<u>CONDITIONS</u>					
Crop	Humidity	RH min X 70%		RH min X 20%	
	Wind. m/sec	0-5	5-8	0-5	5-8
<u>Crop stage</u>					
Sorghum	3	1.0	1.05	1.1	1.15
	4	.5	.5	.55	.55
Soyabeans	3	1.0	1.05	1.1	1.15
	4	.45	.45	.45	.45
Spinach	3	.95	.95	1.0	1.05
	4	.9	.9	.95	1.0
Squash	3	.9	.9	.95	1.0
	4	.7	.7	.75	.8
Sugarbeet	3	1.05	1.1	1.15	1.2
	4	.9	.95	1.0	1.0
Sunflower	3	1.05	1.1	1.15	1.2
	4	.6	.6	.6	.35
Tomato	3	1.05	1.1	1.2	1.25
	4	.6	.6	.65	.65
Wheat	3	1.05	1.1	1.15	1.2
	4	.25	.25	.2	.2

Many cool season crops cannot grow in dry hot climates. Values of kc are given for latter conditions since they may occur occasionally, and result in the need for higher kc values, especially for tall rough crops.

Source: Doorenbos and Pruitt (1975)

Table A-2

LENGTH OF GROWING SEASON AND CROP DEVELOPMENT STAGES  
OF SELECTED FIELD CROPS; SOME INDICATIONS

<u>Artichokes</u>	Perennial, replanted every 4-7 years; example Coastal California with planting in April, 40/40/250/30 and (360) 1; subsequent crops with crop growth cutback to ground level in late spring each year at end of harvest or 20/40/220/30 and (310).
<u>Barley</u>	Also wheat and oats; varies strongly with variety; wheat central India November planting 15/25/50/30 and (120); semi-arid, 35-45° latitudes early spring sowing and South Korea November planting 20/25/60/30 and (135); wheat in East African highlands at 2500 m altitude sown in July and South Korea 15/30/65/40 and (150).
<u>Beans (green)</u>	February and March planting California desert and Mediterranean 20/30/30/10 and (90); August-September planting California desert, Egypt, Coastal Lebanon 15/25/25/10 and (75)
<u>Beans (dry)</u> <u>Pulses</u>	Continental climates late spring planting 20/30/40/20 and (110); June planting Central California and west Pakistan 15/25/35/20 and (95); longer season varieties 15/25/50/20 and (110).
<u>Beets (table)</u>	Spring planting Mediterranean 15/25/20/10 and (70); early spring planting Mediterranean climates and pre cool season in desert climates 25/30/25/10 and (90).
<u>Carrots</u>	Warm season of semi-arid to arid climates 20/30/30/20 and (100); for cool season up to 20/30/80/20 and (160); early spring planting Mediterranean 25/35/40/20 and (120) up to 30/40/60/20 and (150) for late winter planting.
<u>Castorbeans</u>	Semi-arid and arid climates, spring planting 25/40/65/50 and (180).
<u>Celery</u>	Pre-cool season planting semi-arid 25/40/95/20 and (180), cool season 30/55/105/20 and (210); humid mediterranean mid season 30/40/45/15 and (125).
<u>Corn (maize) (sweet)</u>	Philippines, early March planting (late dry season; 20/20/30/10 and (70); late spring planting Mediterranean 20/25/25/10 and (80); late cool season planting desert climates 20/30/30/10 and (90); early cool season planting desert climates 20/30/50/10 and (110).
1/ 40/40/250/30 and (360) stands for respectively initial, crop development, mid-season and late season crop development stages in days and (360) for total growing period from planting to harvest in days.	

Table A-2 (continued)LENGTH OF GROWING SEASON AND CROP DEVELOPMENT STAGES  
OF SELECTED FIELD CROPS: SOME INDICATIONS

<u>Corn (maize)</u> (grains)	Spring planting East African highlands 30/50/60/40 and (180); late cool season planting, warm desert climates 25/40/45/30 and (140); June planting sub-humid Nigeria, early October India 20/35/40/30 and (125); early April planting Sevilla Spain 30/40/50/30 and (150).
<u>Cotton</u>	March planting Egypt, April-May planting Pakistan, September planting South Arabia 30/50/55/45 and (180).
<u>Crucifers</u>	Wide range in length of season due to varietal differences; spring planting Mediterranean and continental climates 20/30/20/10 and (80); late winter planting Mediterranean 25/35/25/10 and (95); autumn planting coastal Mediterranean 30/35/90/40 and (195).
<u>Cucumber</u>	June planting Egypt, August-October California desert 20/30/40/15 and (105); spring planting semi-arid and cool season arid climates, low deserts, 25/35/50/20 and (130) Lanka.
<u>Egg plant</u>	Warm winter desert climates 30/40/40/20 and (130); late spring-early summer planting Mediterranean 30/45/40/25 and (140).
<u>Flax</u>	Spring planting cold winter climates 25/35/50/40 and (150); pre-cool season planting Arizona low desert 30/40/100/50 and (220).
<u>Grain</u>	Spring planting Mediterranean 20/30/60/40 and (150); October November planting warm winter climates; Pakistan and low deserts 25/35/65/40 and (165)
<u>Lentil</u>	Spring planting in cold winter climates 20/30/60/40 and (150); pre-cool season planting warm winter climates 25/35/70/40 and (170).
<u>Lettuce</u>	Spring planting Mediterranean climates 20/30/15/10 and (75). and late winter planting 30/40/25/10 and (105); early cool season low desert climates from 25/35/30/10 and (100); late cool season planting, low deserts 35/50/45/10 and (140).
<u>Melons</u>	Late spring planting Mediterranean climates 25/35/40/20 and (110); mid-winter planting low desert climates 30/45/65/20 and (160).
<u>Millet</u>	June planting Pakistan 15/25/40/25 and (105); central plains U.S.A. spring planting 20/30/55/35 and (140).

Table A-2 (continued)

LENGTH OF GROWING SEASON AND CROP DEVELOPMENT STAGES OF  
SELECTED FIELD CROPS; SOME INDICATIONS

<u>Oats</u>	See Barley.
<u>Onion(dry)</u>	Spring planting Mediterranean climates 15/25/70/40 and (150); pre warm winter planting semi-arid and arid desert climates 20/35/110/45 and (210).  Green - Resp. 25/30/10/5 and (70) and 20/45/20/10 and (95).
<u>Peanuts (groundnuts)</u>	Dry season planting West Africa 25/35/45/25 and (130); late spring planting Coastal plains of Lebanon and Israel 35/45/35/25 and (140).
<u>Peas</u>	Cool maritime climates early summer planting 15/25/35/15 and (90); Mediterranean early spring and warm winter desert climates planting 20/25/35/15 and (95); late winter Mediterranean planting 25/30/30/15 and (100).
<u>Peppers</u>	Fresh-Mediterranean early spring and continental early summer planting 30/35/40/20 and (125); cool coastal continental climates mid-spring planting 25/35/40/20 and (120); pre-warm winter planting desert climates 30/40/110/30 and (210).
<u>Potato (Irish)</u>	Full planting warm winter desert climates 25/30/30/20 and (105); late winter planting arid and semi-arid climates and late spring early summer planting continental climate 25/30/45/30 and (130); early mid spring planting central Europe 30/35/50/30 and (145); slow emergence may increase length of initial period by 15 days during cold spring.
<u>Radishes</u>	Mediterranean early spring and continental summer planting 5/10/15/5 and (35); coastal Mediterranean late winter and warm winter desert climates planting 10/10/15/5 and (40).
<u>Safflower</u>	Central California early mid spring planting 20/35/45/25 and (125) and late winter planting 25/35/55/30 and (145); warm winter desert climates 35/55/60/40 and (190).
<u>Sorghum</u>	Warm season desert climates 20/30/40/30 and (120); mid-June planting Pakistan, May in mid-west U.S.A. and Mediterranean 20/35/40/30 and (125); early spring planting warm arid climates 20/35/45/30 and (130).
<u>Soyabeans</u>	May planting central U.S.A. 20/35/60/25 and (140). May-June planting California desert 20/30/60/25 and (135); Philippines late december planting, early dry season-dry: 15/15/40/15 and (85) vegetables: 15/15/30/- and (60).

Table A-2 (continued)

LENGTH OF GROWING SEASON AND CROP DEVELOPMENT STAGES OF  
SELECTED FIELD CROPS: SOME INDICATIONS

<u>Spinach</u>	Spring planting Mediterranean, 20/20/15/5 and (60), Sep-Oct. and late winter planting Mediterranean 20/20/25/5 and (70); warm winter desert climates 20/30/40/10 and (100).
<u>Squash</u> (winter) pumpkin	Late winter planting Mediterranean and warm winter desert climates 20/30/30/15 and (95); August planting California desert 20/35/30/25 and (110); early June planting maritime Europe 25/35/35/25 and (120).
<u>Squash</u> (zucchini) crookneck	Spring planting Mediterranean 25/35/25/15 and (100+); early summer Mediterranean and maritime Europe 20/30/25/15 and (90+); winter planting warm desert 25/35/25/15 and (100).
<u>Sugarbeet</u>	Coastal Lebanon, mid-November planting 45/75/80/30 and (230), early summer planting 25/35/50/50 and (160); early spring planting Uruguay 30/45/60/45 and (180); late winter planting warm winter desert 35/60/70/40 and (205).
<u>Sugarbeet</u>	Coastal Lebanon, mid-november planting 45/75/80/30 and (230), early summer planting 25/35/50/50 and (160); early spring planting Uruguay 30/45/60/45 and (180); late winter planting warm winter deserts 35/60/70/40 and (205).
<u>Sunflower</u>	Spring planting Mediterranean 25/35/45/25 and (130); early summer planting California desert 20/35/45/25 and (125).
<u>Tomato</u>	Warm winter desert climates 30/40/40/25 and (135) and late autumn 35/45/70/30 and (150); spring planting Mediterranean climates 30/40/45/30 and (145).
<u>Wheat</u>	See Barley.

Source: Doorenbos and Pruitt (1975)

Table A-3

<u>kc VALUES FOR RICE</u>						
	<u>Planting</u> <u>period</u>	<u>Harvest</u> <u>period</u>	<u>First</u> <u>month</u>	<u>Second</u> <u>month</u>	<u>Mid</u> <u>season</u>	<u>Last</u> <u>3-4</u> <u>weeks</u>
<u>Humid Asia</u>						
Wet season (monsoon)	June-July	Nov-Dec				
light to moderate wind			1.1	1.1	1.05	0.95
strong wind			1.15	1.15	1.1	1.0
Dry season <sup>/*</sup>	Dec-Jan	mid-May				
light to moderate wind			1.1	1.1	1.25	1.0 <sup>/*</sup>
strong wind			1.15	1.15	1.35	1.05
<u>Humid Australia</u>						
Wet season	Dec-Jan	Apr-May				
light to moderate wind			1.1	1.1	1.05	.95
strong wind			1.15	1.15	1.1	1.0
<u>Humid S. America</u>						
Wet season	Nov-Dec	Apr-May				
light to moderate wind			1.1	1.1	1.05	.95
strong wind			1.15	1.15	1.1	1.0
<u>Europe (Spain, southern France and northern Italy)</u>						
Dry season	May-June	Sep to early Oct				
light to moderate wind			1.1	1.1	1.2	.95
strong wind			1.15	1.15	1.3	1.0
<u>U.S.A</u>						
Wet summer (southern states)						
light to moderate wind	May	Sep-Oct	1.1	1.1	1.1	.95
strong wind			1.15	1.15	1.15	1.00
Dry summer (Calif.)						
	late Apr to early May	late Sept to early Oct				
light to moderate wind			1.1	1.1	1.25	1.0
strong wind			1.15	1.15	1.35	1.05

<sup>/\*</sup> Only when Rhmin > 70%, kc values for wet season are to be used.

Source: Doorenbos and Pruitt (1975)

## APPENDIX - B

MEASURED CROP WATER REQUIREMENT FOR SOYA BEANS  
USING LYSIMETERS

Station - Mahailuppallama

Season - Yala, 1985

Growth stages of soya -

S1 - First 14 days after germination

S2 - Next 25 days after S1

S3 - Next 35 days after S2

S4 - Balance 14 days after S3



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Moisture levels in root zone

T1 - Field capacity

T2 - 25 % depletion

T3 - 50 % depletion

T4 - 75 % depletion

## Actual Evapotranspiration (mm/day)

	soya				Buffalo grass
	T1	T2	T3	T4	T1
S1	6.58	5.65	4.94	4.46	7.73
S2	7.47	7.49	7.11	5.00	6.46
S3	6.63	5.91	5.48	4.67	5.56
S4	4.80	4.50	4.20	3.80	4.50

578.12	536.2	497.5	404.09	- Total depth of water Evapotranspired (mm)
1051.7	926.7	819.1	450	- Total depth of water supplied (mm)
2.15	2.01	1.84	1.82	- Yield ( T /Ha )

Source - Agricultural Research Station Mahailuppallama, Sri-Lanka.



## APPENDIX - C

## WIND SPEED AND RELATIVE HUMIDITY DATA

Wind speed and Relative Humidity for each month from year 1979 to 1985 corresponding to stations Mahalluppallama, Batticaloa and Peradeniya are presented in Table - C1 to C6.



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Table - C1STATION - MAHAILLUPPALLAMA

WIND SPEED AT 2m HEIGHT  
(km / m)

Year	1985	1984	1983	1982	1981	1980	1979	AVERAGE VALUE
<u>MONTH</u>								
JANUARY	75.86	78.35	106.96	112.52	74.62	70.89	100.74	88.56
FEBRUARY	63.43	68.40	88.30	108.35	82.09	86.80	93.28	84.66
MARCH	69.65	58.45	93.28	97.01	98.25	82.08	88.30	83.86
APRIL	97.02	64.42	86.19	92.54	78.44	71.76	92.75	83.30
MAY	149.25	107.71	108.21	110.69	137.13	140.54	194.02	135.36
JUNE	233.82	201.36	161.68	231.33	257.94	240.04	276.56	229.24
JULY	172.80	152.23	151.73	-	187.80	269.27	291.03	204.15
AUGUST	174.12	157.21	175.36	201.48	243.77	281.08	260.41	213.34
SEPTEMBER	159.20	122.39	162.56	184.07	-	228.85	174.99	172.00
OCTOBER	118.15	101.36	113.18	75.12	111.32	124.00	95.76	105.55
NOVEMBER	75.86	52.48	55.96	65.92	42.28	46.01	53.43	56.00
DECEMBER	79.60	-	77.11	88.05	96.30	58.45	67.41	77.82

Table - C2

## STATION - BATTICALOA

WIND SPEED AT 2m HEIGHT

( km / m )

Year	1985	1984	1983	1982	1981	1980	1979	AVERAGE VALUE
<u>MONTH</u>								
JANUARY	221.07	198.66	255.86	261.27	201.75	285.23	-	237.30
FEBRUARY	-	186.52	169.28	205.61	213.34	254.31	208.71	206.29
MARCH	166.19	143.00	184.74	190.93	234.21	202.52	201.75	189.04
APRIL	147.64	132.72	184.74	175.54	173.15	163.87	189.38	166.72
MAY	151.50	145.09	177.01	150.73	153.82	166.19	178.79	160.44
JUNE	135.27	128.54	147.33	144.55	150.73	140.60	185.52	147.51
JULY	136.04	123.98	147.64	149.18	145.32	146.09	171.60	145.69
AUGUST	132.95	138.44	189.17	152.20	145.32	153.82	186.29	156.89
SEPTEMBER	137.59	145.24	140.76	153.82	141.45	173.15	165.42	151.06
OCTOBER	126.77	145.32	166.96	140.68	162.33	165.42	162.33	152.83
NOVEMBER	166.96	153.74	174.67	146.87	166.96	159.23	160.01	161.20
DECEMBER	213.34	201.75	197.88	268.61	229.89	198.66	206.39	216.64



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Table - C3

STATION - PERADENIYA  
WIND SPEED AT 2m HEIGHT  
 (km / m)

<u>Year</u>	<u>1985</u>	<u>1984</u>	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>AVERAGE VALUE</u>
<u>MONTH</u>								
JANUARY	208.8	146.4	276.0	256.8	170.4	-	199.2	162.02
FEBRUARY	201.6	144.0	127.2	146.4	182.4	-	134.4	120.58
MARCH	108.0	84.0	103.2	122.4	180.0	-	100.0	89.97
APRIL	98.4	84.0	103.2	93.6	88.8	-	04.0	68.64
MAY	110.4	105.6	112.8	91.2	105.6	-	103.2	81.01
JUNE	146.4	141.6	144.0	156.0	165.6	-	156.0	117.18
JULY	117.6	122.4	124.8	144.0	129.6	177.6	105.6	101.76
AUGUST	134.4	127.2	139.2	136.8	151.2	136.8	69.6	98.85
SEPTEMBER	129.6	124.8	129.6	134.4	122.4	110.4	62.4	89.84
OCTOBER	105.6	96.0	98.4	88.8	88.8	93.6	24.0	65.72
NOVEMBER	79.2	88.8	64.8	110.4	91.2	93.6	-	68.02
DECEMBER	175.2	120.0	132.0	220.8	196.8	115.2	-	123.68



Table - C4

## STATION - MAHAILLUPPALLAMA

RELATIVE HUMIDITY

Year	1985	1984	1983	1982	1981	1980	1979	AVERAGE VALUE
<u>MONTH</u>								
JANUARY	83.13	86.05	78.64	75.15	78.19	76.48	77.50	79.30
FEBRUARY	80.30	88.01	66.85	61.60	73.32	70.04	74.65	73.53
MARCH	74.88	75.75	63.0	63.06	70.97	73.00	66.97	69.66
APRIL	72.82	82.42	71.8	73.41	80.54	79.78	73.18	76.27
MAY	73.37	77.11	77.50	82.46	80.83	77.94	75.86	77.86
JUNE	78.95	75.93	79.36	82.92	78.66	78.26	72.46	78.07
JULY	77.66	78.85	73.37	-	78.99	74.72	72.84	76.07
AUGUST	73.69	73.84	74.44	73.96	77.30	74.08	73.41	74.38
SEPTEMBER	76.72	73.46	75.25	69.33	-	71.65	80.60	74.50
OCTOBER	79.88	78.83	76.51	85.18	79.12	83.92	81.30	80.67
NOVEMBER	86.94	89.69	82.77	89.47	81.39	86.66	90.05	86.79
DECEMBER	86.84	-	90.00	86.78	82.64	83.65	86.85	86.12



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Table - C5

STATION - PERADENIYARELATIVE HUMIDITY

Year	1985	1984	1983	1982	1981	1980	1979	AVERAGE VALUE
<u>MONTH</u>								
JANUARY	75.19	79.01	81.82	61.85	69.30	68.75	74.80	72.96
FEBRUARY	70.82	83.07	54.38	53.13	61.40	57.08	69.10	64.14
MARCH	74.60	73.46	51.61	63.44	60.22	60.29	67.02	64.37
APRIL	71.45	84.84	60.40	73.31	87.78	74.98	77.33	75.73
MAY	74.00	72.39	72.18	76.79	76.83	74.55	74.21	74.42
JUNE	88.21	80.84	76.74	85.83	76.31	80.98	75.77	80.67
JULY	86.24	82.82	77.68	79.39	81.31	81.04	80.27	81.25
AUGUST	75.15	74.38	79.22	76.71	76.39	83.83	69.83	76.50
SEPTEMBER	72.80	76.48	78.47	69.81	80.59	78.88	83.90	77.27
OCTOBER	80.50	74.85	74.66	79.71	77.17	78.45	80.45	77.97
NOVEMBER	81.89	80.29	73.26	81.37	67.64	80.72	85.08	78.60
DECEMBER	73.21	78.40	78.12	77.31	73.59	75.12	76.11	75.98

Table - C6STATION - BATTICALOARELATIVE HUMIDITY (%)

<u>Year</u>	1985	1984	1983	1982	1981	1980	1979	AVERAGE VALUE
<u>MONTH</u>								
JANUARY	83.98	89.08	80.81	79.58	83.00	78.12	-	82.42
FEBRUARY	-	86.40	76.93	79.74	80.17	78.21	82.12	80.59
MARCH	80.40	82.30	73.58	83.87	79.20	76.21	77.72	79.04
APRIL	76.80	84.35	72.70	76.45	78.41	79.42	78.03	78.02
MAY	72.20	78.50	73.75	75.09	75.20	76.70	77.60	75.57
JUNE	67.57	73.51	71.60	72.60	71.90	69.60	68.70	70.78
JULY	70.94	73.23	71.30	70.56	73.04	66.80	68.90	70.68
AUGUST	70.80	72.52	73.00	73.51	69.10	71.87	66.50	71.04
SEPTEMBER	72.24	74.51	73.76	72.71	77.99	77.61	77.64	75.49
OCTOBER	76.65	79.68	74.03	81.35	79.31	79.37	82.17	78.93
NOVEMBER	81.96	86.19	83.05	88.58	79.36	85.67	86.32	84.44
DECEMBER	84.98	83.39	89.56	92.30	81.80	86.17	86.17	86.34

## APPENDIX - D

## PAN EVAPORATION DATA

Tables D1 to D3 present the measured pan evaporation for stations Mahailluppallama, Unnichchi and Peradeniya.



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Table - D1STATION - MAHAILLUPPALLAMAMEASURED PAN EVAPORATION ( mm/day )TYPE OF PAN - CLASS 'A'

<u>Year</u>	1983	1982	1981	1980	1979
<u>MONTH</u>					
JANUARY	112.26/30	128.06/31	129.34/31	132.84/31	163.4/31
FEBRUARY	137.38/28	158.06/27	105.76/17	170.8/29	155.4/28
MARCH	171.18/27	162.24/28	207.96/31	222.74/31	171.24/31
APRIL	180.54/30	158.74/30	119.42/23	158.02/30	184.98/30
MAY	172/31	148.66/31	124.68/21	186.58/31	192.16/31
JUNE	162.62/30	126.18/30	162.55/28	175.24/30	218.94/30
JULY	193.62/31	171.76/31	155.16/28	226.52/31	236.96/31
AUGUST	65.48/11	88.9/16	168.70/29	246.06/31	240.22/31
SEPTEMBER	164.81/30	116/30	123.70/28	148.06/21	162.02/30
OCTOBER	124.8/18	143.21/31	91.0/22	156.44/31	177.34/31
NOVEMBER	104.58/29	109.26/29	8.14/3	80.60/30	113.83/30
DECEMBER	82.28/25	74.56/31	105.46/31	88.46/31	96.9/31

Source: Agricultural Research Station Peradeniya, Sri-Lanka

Table - D2STATION - UNNICHCHIMEASURED PAN EVAPORATION (in /day )TYPE OF PAN - CLASS 'A'

<u>Year</u>	1952	1953	1954	1955	1956	1957	1958
<u>MONTH</u>							
JANUARY	4.48/31	4.33/31	4.54/31	5.16/31	4.18/31	5.43/31	5.20/31
FEBRUARY	5.12/29	4.53/28	4.83/28	3.74/28	5.02/29	4.12/28	5.22/28
MARCH	6.81/31	5.53/31	5.82/31	5.98/31	5.83/31	6.37/31	5.53/31
APRIL	6.12/30	5.83/30	5.59/30	6.07/30	7.12/30	5.76/30	6/30
MAY	7.63/31	6.31/31	6.6/31	6.48/31	9.43/31	6.26/31	6.12/31
JUNE	9.01/30	6.36/30	7.24/30	7.6/30	8.02/30	6.26/30	6.35/30
JULY	7.96/31	6.00/31	7.23/31	7.97/31	7.31/31	6.15/31	6.26/31
AUGUST	7.62/31	6.09/31	7.05/31	6.35/31	7.38/31	8.96/31	5.94/31
SEPTEMBER	8.82/30	5.85/30	6.15/30	6.44/30	7.05/30	8.06/30	6/30
OCTOBER	7.7/31	5.46/31	6.07/31	6.8/31	5.3/31	6.47/31	5.68/31
NOVEMBER	5.12/30	5.92/30	4.48/30	5.27/30	4.78/30	5.19/30	5.42/30
DECEMBER	4.61/31	4.49/31	3.81/31	3.94/31	4.23/31	4.53/31	5.16/31

Source: Department of Irrigation, Sri-Lanka.

Table - D2 (contd)

## STATION - UNNICHCHI

MEASURED PAN EVAPORATION (in / day)TYPE OF PAN - CLASS ' A '

Year	1959	1960	1961	1962	1963	1964	1965	AVERAGE VALUE
<u>MONTH</u>								(mm/day)
JANUARY	3.81/31	3.99/31	4.6/31	3.16/31	6.63/31	2.98/31	4.53/31	3.68
FEBRUARY	4.9/28	2.67/29	4.75/28	4.11/28	3.1/28	3.36/29	4.96/28	3.87
MARCH	6.55/31	5.66/31	5.77/31	5.51/31	5.24/31	3.33/31	5.39/31	4.64
APRIL	5.85/30	5.98/30	6.73/30	5.9/30	5.88/30	6.14/30	5.59/30	5.11
MAY	6.62/31	6.85/31	7.59/31	3.95/31	6.02/31	5.72/31	6.09/31	5.36
JUNE	6.49/30	6.73/30	6.03/30	3.89/30	6.3/30	5.11/30	6.35/30	5.73
JULY	9.16/31	6.83/31	6.46/31	3.89/31	7.37/31	6.77/31	6.14/31	5.58
AUGUST	9.01/31	7.37/31	7.28/31	4.65/31	6.05/31	6.49/31	5.79/31	5.65
SEPTEMBER	7.61/30	7.12/30	6.08/30	5.89/30	4.18/30	6.03/30	6.06/30	5.52
OCTOBER	6.6/31	6.54/31	6.34/31	3.75/31	3.91/31	5.72/31	5.75/31	4.80
NOVEMBER	4.31/30	5.31/30	4.00/30	3.50/30	5.12/30	5.2/30	5.42/30	4.17
DECEMBER	4.12/31	4.82/31	4.55/31	3.59/31	5.08/31	5.12/31	4.96/31	3.68

Source: Department of Irrigation, Sri-Lanka.

Table - D3STATION - PERADENIYAMEASURED PAN EVAPORATION (mm / day)TYPE OF PAN - CLASS 'A'

Year	1985	1984	1983	1982	1981	1980	1979
<u>MONTH</u>							
JANUARY	4.9	3.2	5.1	5.7	4.1	4.5	3.7
FEBRUARY	3.7	2.8	5.9	6.2	5.3	5.9	4.8
MARCH	4.3	4.0	6.1	5.4	5.4	5.4	5.2
APRIL	4.4	3.5	5.7	5.0	3.4	3.7	4.0
MAY	3.7	4.2	4.9	4.1	3.4	4.1	3.9
JUNE	2.4	2.9	3.6	3.6	3.2	3.1	3.8
JULY	2.8	3.3	3.3	3.2	2.9	3.2	2.9
AUGUST	3.5	3.8	3.2	3.8	2.6	3.2	3.7
SEPTEMBER	3.8	4.8	2.9	3.9	3.5	3.5	2.4
OCTOBER	3.4	3.3	3.6	3.2	3.1	3.1	2.9
NOVEMBER	3.7	3.2	2.9	3.0	3.1	1.9	2.2
DECEMBER	4.2	2.9	3.3	3.6	3.6	2.9	3.5

Source: Agricultural Research station Peradeniya, Sri-Lanka.

## APPENDIX - E

## AGRO METEOROLOGICAL DATA

Agro Meteorological data for stations Mahalluppallama, Batticaloa and Peradeniya are tabulated in Table E1 to E21.



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Table - E1STATION - PERADENIYA

YEAR - 1979

ALTITUDE - 487.62m above M.S.L.

LATITUDE - 7°N

MONTH	N	n	Ra	TEMPERATURE °C		TEMPERATURE °C		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.72	7.9	13.75	29.1	20.0	22.05	25.39	199.2
FEBRUARY	11.86	7.9	14.65	29.3	21.2	21.97	26.21	134.4
MARCH	12.0	7.9	15.35	31.2	19.2	22.10	26.70	100.8
APRIL	12.24	7.2	15.50	31.6	20.5	24.07	27.15	64.8
MAY	12.42	7.1	15.20	30.6	21.1	23.77	27.34	103.2
JUNE	12.52	5.9	14.85	29.0	21.7	23.34	26.62	156.0
JULY	12.42	4.6	15.00	27.8	21.7	22.59	25.13	105.6
AUGUST	12.34	6.8	15.30	29.1	21.1	22.83	27.04	69.6
SEPTEMBER	12.10	3.9	15.30	26.2	19.0	22.50	24.50	62.4
OCTOBER	11.92	5.9	14.90	26.2	20.6	23.54	26.11	24.0
NOVEMBER	11.78	3.3	14.05	25.8	20.7	22.59	24.44	-
DECEMBER	11.68	6.0	13.50	27.2	20.6	22.09	25.23	-

N - Maximum possible sun shine hours.

n - Measured bright sun shine hours.

Ra - Extra - Terrestrial radiation in mm / day.

U - Mean velocity of wind at 2m height in km/day.

Source: Department of Meteorology,  
Sri Lanka

Table - E2

## STATION - PERADENIYA

YEAR - 1980

ALTITUDE - 487.62 m above M.S.L

LATITUDE - 7° N

MONTH	N	n	Ra	TEMPERATURE C <sup>0</sup>		TEMPERATURE C <sup>0</sup>		U (km/day)
				MAXI	MINI	WET BULB	DAY BULB	
JANUARY	11.72	7.8	13.75	29.0	18.0	21.04	25.24	-
FEBRUARY	11.86	9.6	14.65	31.2	18.6	20.68	26.79	-
MARCH	12.0	8.0	15.35	29.4	19.3	21.09	27.47	-
APRIL	12.24	5.4	15.5	39.1	21.3	23.49	26.91	-
MAY	12.42	6.3	15.2	31.5	22.2	24.21	27.76	-
JUNE	12.52	3.7	14.85	26.9	21.0	22.73	25.17	-
JULY	12.42	4.2	15.0	26.8	21.9	22.86	25.30	177.6
AUGUST	12.34	5.9	15.3	26.8	21.3	23.24	25.28	136.8
SEPTEMBER	12.10	6.4	15.3	28.2	20.6	22.92	25.69	110.4
OCTOBER	11.92	5.1	14.9	26.9	20.2	23.00	25.84	93.6
NOVEMBER	11.78	3.3	14.05	26.4	20.7	22.72	25.20	93.6
DECEMBER	11.68	5.9	13.5	27.4	18.8	21.91	25.19	115.2

N - Maximum possible sunshine hours

n - Measured bright sunshine hours

Ra - Extra-terrestrial radiation in mm/day

U - Mean velocity of wind at 2m height in km/day.

Source: Department of Meteorology,  
Sri Lanka

Table - E3STATION - PERADENIYA

YEAR - 1981

ALTITUDE - 487.62m above M.S.L

LATITUDE - 7° N

MONTH	N	n	Ra	TEMPERATURE C <sup>0</sup>		TEMPERATURE C <sup>0</sup>		U Km/day
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.72	7.9	13.75	28.5	16.8	20.75	24.83	170.4
FEBRUARY	11.86	7.5	14.65	30.3	17.5	20.93	26.38	182.4
MARCH	12.0	7.7	15.35	31.1	21.3	22.71	28.66	180.0
APRIL	12.24	5.2	15.5	28.3	20.6	25.47	27.00	88.8
MAY	12.42	5.9	15.2	29.3	22.3	24.19	27.30	105.6
JUNE	12.52	4.8	14.85	27.5	21.0	22.56	25.70	165.6
JULY	12.42	4.8	15.0	26.9	21.4	21.95	24.30	129.6
AUGUST	12.34	5.8	15.3	26.7	21.5	22.28	25.39	151.2
SEPTEMBER	12.10	5.2	15.3	26.4	20.7	22.40	24.88	122.4
OCTOBER	11.92	4.7	14.9	27.1	20.9	22.28	25.27	88.8
NOVEMBER	11.78	4.9	14.05	27.0	19.8	22.31	26.83	91.2
DECEMBER	11.68	6.5	13.5	26.9	19.0	21.45	24.93	196.8

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation in mm/day  
 U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
Sri Lanka



Table - E4

STATION - PERADENIYA

YEAR - 1962

ALTITUDE - 487.62m above M.S.L

LATITUDE - 7° N

MONTH	N	n	Ra	TEMPERATURE °C		TEMPERATURE °C		U (Km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.72	8.4	13.75	28.7	18.8	20.39	25.67	256.8
FEBRUARY	11.86	9.6	14.65	31.6	16.7	20.80	27.27	146.4
MARCH	12.0	7.5	15.35	30.7	20.0	22.24	27.50	122.4
APRIL	12.24	7.5	15.5	29.3	21.4	23.43	27.12	93.6
MAY	12.42	5.8	15.2	28.5	21.1	23.38	26.50	91.2
JUNE	12.52	3.6	14.85	27.7	21.9	23.18	24.50	156.0
JULY	12.42	4.5	15.0	27.4	21.5	22.86	25.55	144.0
AUGUST	12.34	5.9	15.3	27.3	20.8	22.58	25.66	136.8
SEPTEMBER	12.10	5.9	15.3	28.0	20.6	22.03	26.16	134.4
OCTOBER	11.92	5.1	14.9	26.3	20.3	22.69	25.32	88.8
NOVEMBER	11.78	4.0	14.05	26.9	20.4	23.04	25.44	110.4
DECEMBER	11.68	4.6	13.5	27.6	20.1	21.41	24.31	220.8

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation in mm/day  
 U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
Sri Lanka

STATION - PERADENIYA

YEAR - 1983

ALTITUDE - 487.62m above M.S.L

LATITUDE - 7°N

MONTH	N	n	Ra	TEMPERATURE C <sup>0</sup>		TEMPERATURE C <sup>0</sup>		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.72	8.1	13.75	28.1	19.1	21.32	23.57	276.0
FEBRUARY	11.86	8.9	14.65	31.8	18.6	20.64	27.00*	127.2
MARCH	12.00	8.7	15.35	33.3	19.2	22.03	28.76	103.2
APRIL	12.24	8.0	15.50	32.7	21.4	23.12	29.10	103.2
MAY	12.42	8.0	15.20	28.6	21.3	23.87	27.79	112.8
JUNE	12.52	6.4	14.85	27.8	22.1	23.56	26.70	114.0
JULY	12.42	6.0	15.00	26.0	21.4	23.05	26.01	124.8
AUGUST	12.34	4.8	15.30	27.0	21.4	23.26	26.00	139.2
SEPTEMBER	12.10	4.7	15.30	27.2	20.5	22.89	25.72	129.6
OCTOBER	11.92	6.8	14.90	26.1	18.9	22.83	26.25	98.4
NOVEMBER	11.78	5.8	14.05	25.0	17.5	21.35	24.87	64.8
DECEMBER	11.68	5.2	13.50	26.9	20.5	22.34	25.19	132.0

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours.  
 Ra - Extra-terrestrial radiation in mm/day  
 U - Mean velocity of wind at 2m height in km/day

source: DEPARTMENT OF METEOROLOGY,  
SRI-LANKA

STATION - PERADENIYA

YEAR - 1984  
 ALTITUDE - 487.62 m above M.S.L  
 LATITUDE - 7° N

MONTH	N	n	Ra	TEMPERATURE C <sup>0</sup>		TEMPERATURE C <sup>0</sup>		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.72	6.1	13.75	27.8	19.5	21.41	24.06	146.4
FEBRUARY	11.86	6.0	14.65	27.9	20.0	21.65	23.74	144.0
MARCH	12.00	3.5	15.35	30.1	19.7	22.44	26.02	84.0
APRIL	12.24	3.5	15.50	29.9	20.6	23.81	25.74	84.0
MAY	12.42	4.4	15.20	30.2	20.9	23.41	27.25	105.6
JUNE	12.52	5.9	14.85	28.5	21.7	23.19	25.68	141.6
JULY	12.42	5.1	15.00	27.7	20.3	22.63	24.79	122.4
AUGUST	12.34	5.3	15.30	27.4	19.9	22.39	25.82	127.2
SEPTEMBER	12.10	5.2	15.30	29.4	19.5	22.80	25.93	124.8
OCTOBER	11.92	4.0	14.90	28.8	19.0	22.16	25.50	96.0
NOVEMBER	11.78	3.7	14.05	29.0	19.4	22.48	25.01	88.8
DECEMBER	11.68	5.0	13.50	25.1	18.3	21.96	24.74	120.0

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation in mm/day  
 U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
 Sri-Lanka

Table - E7

STATION - PERADENIYA

YEAR - 1985  
 ALTITUDE - 487.62 m above M.S.L  
 LATITUDE - 7° N

MONTH	N	n	Ra	TEMPERATURE		TEMPERATURE		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.72	7.4	13.75	29.3	19.3	22.54	25.78	208.8
FEBRUARY	11.86	5.9	14.65	30.4	18.7	22.06	26.03	201.6
MARCH	12.00	6.5	15.35	31.4	20.1	23.21	26.67	108.0
APRIL	12.24	7.7	15.50	31.2	20.3	24.19	28.27	98.4
MAY	12.42	5.9	15.20	30.7	21.3	23.83	27.44	110.4
JUNE	12.52	3.3	14.85	27.4	20.7	23.00	24.46	146.4
JULY	12.42	4.5	15.00	27.8	20.3	23.30	25.02	117.6
AUGUST	12.34	5.5	15.30	28.4	20.8	22.54	25.86	134.4
SEPTEMBER	12.10	6.1	15.30	28.7	20.5	22.38	26.06	129.6
OCTOBER	11.92	5.7	14.90	28.6	20.6	23.00	25.53	105.6
NOVEMBER	11.78	5.5	14.05	28.1	18.7	22.24	24.52	79.2
DECEMBER	11.68	6.2	13.50	28.8	20.1	21.83	25.40	175.2

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation in mm/day  
 U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
 Sri-Lanka

Table - E8

STATION - MAHAILLUPPALLAMA

YEAR - 1979

ALTITUDE - 137 m above M.S.L.

LATITUDE - 8° 5' N

MONTH	N	n	Ra	TEMPERATURE C <sup>0</sup>		TEMPERATURE C <sup>0</sup>		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.67	9.1	13.58	30.5	21.6	23.25	26.25	100.74
FEBRUARY	11.83	9.3	14.49	32.5	22.1	23.55	27.00	93.28
MARCH	12.0	9.83	15.30	33.9	22.2	23.95	28.70	88.30
APRIL	12.26	9.89	15.60	35.1	24.0	25.65	29.45	92.75
MAY	12.50	8.37	15.30	34.0	25.0	25.75	29.15	194.02
JUNE	12.58	8.30	15.01	33.6	25.4	25.50	29.40	276.56
JULY	12.48	8.30	15.10	32.9	25.3	24.80	28.60	291.03
AUGUST	12.36	9.10	15.40	33.4	24.8	28.25	24.10	260.41
SEPTEMBER	12.1	6.92	15.30	32.1	23.9	24.40	27.00	174.99
OCTOBER	11.87	7.60	14.79	32.3	23.3	24.50	27.00	95.76
NOVEMBER	11.71	4.60	13.87	30.0	22.9	24.45	25.75	53.48
DECEMBER	11.61	6.20	13.28	29.7	22.2	23.75	25.50	67.41

N - Maximum possible sun shine hours.

n - Measured bright sun shine hours.

Ra - Extra - Terrestrial radiation.

U - Mean velocity of wind at 2m height in km / day.

Source: Department of Meteorology,  
Sri-Lanka

Table - E9

STATION - MAHAILLUPPALLAMA

YEAR - 1980

ALTITUDE - 137 m above M.S.L

LATITUDE - 8°5' N

MONTH	N	n	Ra	TEMPERATURE °C		TEMPERATURE °C		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.67	8.4	13.58	30.3	19.8	22.35	25.45	70.89
FEBRUARY	11.83	10.40	14.49	32.6	20.0	23.20	27.40	88.80
MARCH	12.0	10.00	15.30	35.1	22.4	25.20	29.00	82.08
APRIL	12.26	8.40	15.60	33.1	24.1	25.65	28.45	71.76
MAY	12.50	8.80	15.30	33.8	25.5	26.00	29.10	140.54
JUNE	12.58	7.40	15.01	32.5	25.3	25.15	28.15	240.04
JULY	12.48	7.68	15.10	33.1	25.0	24.55	28.05	269.27
AUGUST	12.36	8.63	15.40	33.8	24.8	24.60	28.20	281.08
SEPTEMBER	12.10	8.60	15.30	34.1	24.5	24.30	28.25	228.85
OCTOBER	11.87	6.67	14.79	31.2	23.3	24.45	26.55	124.00
NOVEMBER	11.71	6.30	13.87	30.6	22.7	24.39	26.10	46.01
DECEMBER	11.61	6.74	13.28	29.7	21.7	23.55	25.60	58.45

N<sub>i</sub> - Maximum possible sunshine hours

n - Measured bright sunshine hours

Ra - Extra-terrestrial radiation

U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology, Sri-Lanka

Table - E10

STATION - MAHAILLUPPALLAMA

YEAR - 1981  
 ALTITUDE - 137 m above M.S.L  
 LATITUDE - 8°05' N

MONTH	N	n	Ra	TEMPERATURE °C		TEMPERATURE °C		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.67	9.2	13.58	30.0	19.8	22.5	25.35	74.62
FEBRUARY	11.83	9.32	14.49	31.6	20.1	22.7	26.30	82.08
MARCH	12.0	9.73	15.3	34.5	23.3	24.75	28.95	98.25
APRIL	12.26	8.53	15.60	33.3	24.2	25.9	28.60	78.44
MAY	12.48	7.91	15.30	32.5	25.0	25.8	28.45	137.13
JUNE	12.58	8.16	15.01	31.7	24.6	24.5	27.40	259.94
JULY	12.48	6.78	15.10	32.4	24.3	24.5	27.35	187.80
AUGUST	12.36	8.34	15.40	32.5	24.3	24.4	27.50	243.77
SEPTEMBER	12.10	-	15.30	-	-	-	-	-
OCTOBER	11.87	6.71	14.79	32.0	23.0	24.0	26.80	111.31
NOVEMBER	11.71	5.95	13.87	30.7	22.4	23.75	26.10	42.28
DECEMBER	11.61	6.40	13.28	29.5	20.7	22.90	25.10	96.30

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation  
 U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
 Sri-Lanka

Table - E11

STATION - MAHAILLUPPALLAMA

YEAR - 1982

ALTITUDE - 137 m above M.S.L

LATITUDE - 8° 5' N

MONTH	N	n	Ra	TEMPERATURE		TEMPERATURE		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.67	8.9	13.58	30.50	19.70	22.15	25.5	112.52
FEBRUARY	11.83	10.2	14.49	33.20	19.20	22.15	27.75	108.35
MARCH	12.0	9.1	15.3	35.0	22.0	24.3	29.95	97.01
APRIL	12.26	8.79	12.26	34.50	24.2	25.4	29.15	92.53
MAY	12.48	7.9	15.30	33.10	24.0	25.75	28.15	110.69
JUNE	12.58	6.87	15.01	31.30	24.8	25.25	27.55	231.33
JULY	12.48	-	-	-	-	-	-	-
AUGUST	12.36	8.3	15.40	34.0	24.6	24.2	28.35	201.48
SEPTEMBER	12.10	8.5	15.30	34.30	24.7	24.15	28.55	184.07
OCTOBER	11.87	7.0	14.79	32.30	23.1	24.85	26.75	75.12
NOVEMBER	11.71	5.38	13.87	30.10	22.8	24.55	25.90	65.91
DECEMBER	11.61	4.4	13.28	28.40	21.6	23.35	24.90	88.05

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation  
 U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
Sri-Lanka



Table - E12

## STATION - MAHAILLUPPALLAMA

YEAR - 1983  
 ALTITUDE - 137 m above M.S.L  
 LATITUDE - 8°5' N  
 Ra

MONTH	N	n	Ra	TEMPERATURE °C		TEMPERATURE °C		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.67	8.5	13.58	30.1	20.4	22.8	25.60	106.96
FEBRUARY	11.83	9.9	14.49	34.0	21.0	23.75	28.50	88.30
MARCH	12.0	9.8	15.30	36.7	22.3	24.7	30.45	93.28
APRIL	12.26	9.0	15.60	37.3	24.7	26.5	31.20	86.19
MAY	12.48	10.0	15.30	34.0	23.1	26.55	29.75	108.20
JUNE	12.58	8.4	15.01	33.6	25.3	26.25	29.15	161.68
JULY	12.48	8.5	15.10	34.7	24.8	25.3	29.05	151.73
AUGUST	12.36	8.1	15.40	34.6	25.3	25.5	29.10	175.36
SEPTEMBER	12.10	6.4	15.30	33.7	24.6	25.05	28.50	162.55
OCTOBER	11.87	7.5	14.79	34.7	23.7	24.90	28.15	113.18
NOVEMBER	11.71	6.2	13.87	31.1	22.0	24.05	26.30	55.96
DECEMBER	11.61	4.7	13.28	29.2	22.4	23.75	25.00	77.11

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation  
 U - Mean velocity of wind at 2 m height in km/day

Source: Department of Meteorology,  
 Sri-Lanka

Table - E13

## STATION - MAHAILLUPPALLAMA

YEAR - 1984  
 ALTITUDE - 137 m above M.S.L  
 LATITUDE - 8° 5' N

MONTH	N	n	Ra	TEMPERATURE		TEMPERATURE		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.67	5.2	13.58	28.9	22.0	23.4	25.15	78.35
FEBRUARY	11.83	4.0	14.49	28.7	22.4	23.55	25.05	68.40
MARCH	12.0	8.4	15.30	32.2	22.3	24.65	28.0	58.45
APRIL	12.26	7.7	15.60	32.5	23.7	25.65	28.05	64.42
MAY	12.50	9.3	15.36	34.5	24.8	26.4	29.65	107.70
JUNE	12.58	8.4	15.01	33.5	24.7	25.1	26.45	201.36
JULY	12.48	6.6	15.10	32.0	23.7	24.15	27.0	152.23
AUGUST	12.36	8.7	15.40	33.9	24.0	24.00	28.15	157.21
SEPTEMBER	12.10	7.7	15.30	33.4	23.4	23.75	27.4	122.39
OCTOBER	11.87	8.5	14.79	31.9	22.4	24.1	26.95	101.36
NOVEMBER	11.71	4.5	13.87	29.6	22.4	24.05	25.35	52.48
DECEMBER	11.61	-	13.28	-	-	-	-	-

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation  
 U - Mean velocity of wind at 2 m height in km/day

Source: Department of Meteorology,  
 Sri-Lanka

Table - E14

STATION - MAHAILLUPPALLAMA

YEAR - 1985

ALTITUDE - 137 m above M.S.L

LATITUDE - 8° 5' N

MONTH	N	n	Ra	TEMPERATURE		TEMPERATURE		U ( km/day )
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.67	7.84	13.58	29.8	21.3	23.3	25.45	75.86
FEBRUARY	11.83	7.4	14.49	30.5	21.4	23.65	26.25	63.43
MARCH	12.0	8.8	15.30	33.9	22.9	24.95	28.45	69.65
APRIL	12.26	9.3	15.60	35.5	24.4	25.7	29.7	97.02
MAY	12.50	8.4	15.36	34.0	24.9	25.3	29.05	149.25
JUNE	12.58	6.7	15.01	31.4	24.4	24.4	27.25	233.82
JULY	12.48	8.5	15.10	32.2	24.2	24.45	27.65	172.88
AUGUST	12.36	8.2	15.40	33.1	24.4	24.45	28.1	174.12
SEPTEMBER	12.10	7.7	15.30	33.0	24.1	24.6	27.8	159.20
OCTOBER	11.87	7.8	14.79	31.9	23.2	24.25	26.95	118.15
NOVEMBER	11.71	6.4	13.87	29.4	21.8	23.8	25.45	75.86
DECEMBER	11.61	6.7	13.28	29.2	21.8	23.5	25.15	79.60

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra - terrestrial radiation  
 U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
Sri-Lanka

Table - E15

STATION - BATTICALOA

YEAR - 1979

ALTITUDE - 2.73 m above M.S.L.

LATITUDE - 7<sup>0</sup>43' N

MONTH	N	n	Ra	TEMPERATURE C <sup>0</sup>		TEMPERATURE C <sup>0</sup>		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	-	-	-	-	-	-	-	-
FEBRUARY	11.84	8.98	14.54	28.9	24.1	24.9	27.30	208.71
MARCH	12.0	9.61	15.31	30.2	24.5	25.3	28.40	201.75
APRIL	12.25	9.54	15.57	31.9	25.9	26.7	29.85	189.38
MAY	12.46	8.56	15.27	32.6	26.1	26.75	30.15	178.79
JUNE	12.56	8.47	14.95	34.6	26.7	26.05	31.10	185.52
JULY	12.46	8.52	15.07	34.0	26.0	25.40	30.25	171.60
AUGUST	12.35	9.22	15.37	34.2	29.9	24.90	30.15	186.29
SEPTEMBER	12.10	6.95	15.30	31.4	24.8	25.10	28.20	165.42
OCTOBER	11.89	8.22	14.82	30.4	24.7	25.85	28.30	162.33
NOVEMBER	11.73	4.88	13.94	29.1	24.1	25.20	27.00	160.01
DECEMBER	11.63	5.67	13.56	28.8	24.1	24.80	26.60	206.39

N - Maximum possible sun shine hours.

n - Measured bright sun shine hours.

Ra - Extra- Terrestrial radiation.

U - Mean velocity of wind at 2m height in km/day.

Source: Department of Meteorology,  
Sri-Lanka

Table - E16

## STATION - BATTICALOA

YEAR - 1980  
 ALTITUDE - 2073 m above M.S.L.  
 LATITUDE - 7°43' N

MONTH	N	n	Ra	TEMPERATURE °C		TEMPERATURE °C		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.69	7.2	13.64	28.2	24.2	23.80	26.8	285.23
FEBRUARY	11.84	10.17	14.54	28.9	23.8	24.20	27.15	254.31
MARCH	12.0	10.49	15.31	30.8	24.4	25.20	28.55	202.52
APRIL	12.25	6.97	15.57	31.9	25.7	26.40	29.30	163.87
MAY	12.46	8.94	15.27	33.6	26.7	27.15	30.70	166.19
JUNE	12.56	8.29	14.95	35.4	26.6	26.10	30.85	140.68
JULY	12.46	7.79	15.07	35.0	26.2	25.35	30.55	146.09
AUGUST	12.35	7.98	15.37	33.6	25.8	25.50	29.65	153.82
SEPTEMBER	12.10	8.39	15.30	32.6	25.4	25.85	29.15	173.15
OCTOBER	11.89	6.65	14.82	31.1	24.6	25.45	28.30	165.42
NOVEMBER	11.73	6.31	13.94	29.2	24.2	25.40	27.30	159.23
DECEMBER	11.63	7.08	13.56	28.5	23.7	24.80	26.60	198.66

N - Maximum possible sunshine hours

n - Measured bright sunshine hours

Ra - Extra-terrestrial radiation

U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
Sri-Lanka.

Table - E17

## STATION - BATTICALOA

YEAR - 1981  
 ALTITUDE - 2.73 m above M.S.L  
 LATITUDE - 7°43' N

MONTH	N	n	Ra	TEMPERATURE C <sup>0</sup>		TEMPERATURE C <sup>0</sup>		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.69	8.24	13.64	27.90	22.90	23.80	26.00	201.75
FEBRUARY	11.84	8.77	14.54	28.60	23.40	24.15	26.80	213.34
MARCH	12.0	9.50	15.31	30.50	25.70	25.85	28.75	234.21
APRIL	12.25	8.73	15.57	31.70	25.60	26.35	29.40	173.15
MAY	12.46	8.23	15.27	33.50	26.10	26.75	30.55	153.82
JUNE	12.56	7.97	14.95	34.50	25.40	26.15	30.50	150.73
JULY	12.46	6.79	15.07	32.50	24.60	25.30	29.10	145.32
AUGUST	12.35	8.90	15.37	34.30	24.70	25.25	30.05	145.32
SEPTEMBER	12.10	6.57	15.30	31.60	24.20	25.30	28.35	141.45
OCTOBER	11.89	7.00	14.82	31.20	24.00	25.30	28.15	162.33
NOVEMBER	11.73	6.46	13.94	29.80	23.40	24.60	27.40	166.96
DECEMBER	11.63	6.91	13.56	28.40	22.70	24.10	26.50	229.89

N -Maximum possible sunshine hours

n -Measured bright sunshine hours

Ra -Extra-terrestrial radiation

U -Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
Sri-Lanka

STATION - BATTICALOA

YEAR - 1982  
 ALTITUDE - 2.73 m above M.S.L.  
 LATITUDE - 7°43' N

MONTH	N	n	Ra	TEMPERATURE °C		TEMPERATURE °C		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.69	8.5	13.64	28.0	22.90	23.50	26.20	261.27
FEBRUARY	11.84	10.1	14.54	28.80	21.90	23.90	26.60	205.61
MARCH	12.0	8.62	15.31	30.20	23.60	25.15	27.95	190.93
APRIL	12.25	8.88	15.57	32.20	25.20	26.40	29.75	175.54
MAY	12.46	7.9	15.27	32.7	25.00	26.30	29.85	150.73
JUNE	12.56	7.0	14.95	34.10	25.10	26.00	30.20	144.55
JULY	12.46	8.12	15.07	33.70	24.80	25.70	29.90	149.18
AUGUST	12.35	7.51	15.37	32.50	24.90	25.65	29.40	152.28
SEPTEMBER	12.10	7.35	15.30	33.40	24.30	25.30	29.15	153.82
OCTOBER	11.89	6.32	14.82	30.70	23.50	25.45	28.00	140.68
NOVEMBER	11.73	5.2	13.94	28.90	23.20	25.45	26.95	146.87
DECEMBER	11.63	4.76	13.56	28.60	23.30	25.60	26.55	268.61

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation  
 U - Mean velocity of wind at 2m height, in km/day

Source: Department of Meteorology,  
 Sri-Lanka

Table - E19

STATION - BATTICALOA

YEAR - 1983  
 ALTITUDE - 2.73m above M.S.L  
 LATITUDE - 7° 43' N

MONTH	N	n	Ra	TEMPERATURE		TEMPERATURE		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.69	7.76	13.64	28.40	22.80	24.10	26.65	255.86
FEBRUARY	11.84	10.05	14.54	29.80	22.30	24.30	27.45	169.28
MARCH	12.00	9.59	15.31	31.10	23.50	25.00	28.70	184.74
APRIL	12.25	9.38	15.57	32.40	24.90	26.10	30.00	184.74
MAY	12.46	9.37	15.27	33.40	25.60	26.75	30.80	177.01
JUNE	12.56	8.60	14.95	34.30	25.30	26.10	30.50	147.33
JULY	12.46	7.20	15.07	33.70	25.20	25.85	30.25	147.64
AUGUST	12.35	7.37	15.37	33.70	25.00	26.00	30.00	189.17
SEPTEMBER	12.10	7.10	15.30	32.70	24.20	25.45	29.15	140.76
OCTOBER	11.89	7.30	14.82	32.30	23.80	25.30	28.95	166.96
NOVEMBER	11.73	6.80	13.94	29.50	23.40	24.75	27.00	174.67
DECEMBER	11.63	5.30	13.56	28.50	23.80	24.80	26.40	197.88

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation  
 U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
 Sri-Lanka



Table - E20STATION - BATTICALOA

YEAR - 1984  
 ALTITUDE - 2.73 m above M.S.L  
 LATITUDE - 7°43' N

MONTH	N	n	Ra	TEMPERATURE °C		TEMPERATURE °C		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.69	4.2	13.64	27.8	23.60	24.6	26.00	198.66
FEBRUARY	11.84	4.10	14.54	28.0	23.8	24.4	26.15	186.52
MARCH	12.00	8.40	15.31	29.9	24.10	25.35	27.75	143.00
APRIL	12.25	7.1	15.57	31.20	25.0	26.35	28.50	132.72
MAY	12.46	9.2	15.27	32.50	26.1	26.85	30.10	145.09
JUNE	12.56	8.3	14.95	34.60	25.5	25.15	30.50	128.54
JULY	12.46	7.2	15.07	32.1	24.5	24.95	28.70	123.98
AUGUST	12.35	8.7	15.37	32.9	25.0	25.20	29.20	138.44
SEPTEMBER	12.10	7.9	15.30	31.4	24.2	24.85	28.40	145.24
OCTOBER	11.89	7.7	14.82	31.0	24.3	25.40	28.20	145.32
NOVEMBER	11.73	4.7	13.94	28.2	23.8	24.85	26.65	153.74
DECEMBER	11.63	5.3	13.56	28.2	23.4	23.95	26.10	201.75

N - Maximum possible sunshine hours

n - Measured bright sunshine hours

Ra - Extra-terrestrial radiation

U - Mean velocity of wind at 2m height in km/day

Source: Department of Meteorology,  
Sri-Lanka

Table - E21

## STATION - BATTICALOA

YEAR - 1985  
 ALTITUDE - 2,73 m above M.S.L  
 LATITUDE - 7°43' N

MONTH	N	n	Ra	TEMPERATURE C <sup>0</sup>		TEMPERATURE C <sup>0</sup>		U (km/day)
				MAXI	MINI	WET BULB	DRY BULB	
JANUARY	11.69	7.04	13.64	28.30	24.10	24.60	26.70	221.07
FEBRUARY	11.84	-	14.54	-	-	-	-	-
MARCH	12.00	8.43	15.31	30.20	24.70	25.55	28.25	166.19
APRIL	12.25	9.00	15.57	31.60	25.70	26.45	29.75	147.64
MAY	12.46	8.35	15.27	33.40	25.80	26.15	30.45	151.50
JUNE	12.56	7.10	14.95	23.30	25.10	24.95	29.70	135.27
JULY	12.46	7.96	15.07	32.40	24.80	24.70	28.90	136.04
AUGUST	12.35	8.31	15.37	33.00	24.80	25.00	29.25	132.95
SEPTEMBER	12.10	7.50	15.30	32.20	24.60	24.95	28.85	137.59
OCTOBER	11.89	7.31	14.82	31.00	24.50	25.25	28.59	126.77
NOVEMBER	11.73	6.15	13.94	29.20	23.70	24.50	26.90	166.96
DECEMBER	11.63	6.27	13.56	27.90	23.90	24.55	26.50	213.34

N - Maximum possible sunshine hours  
 n - Measured bright sunshine hours  
 Ra - Extra-terrestrial radiation  
 U - Mean velocity of wind at 2m height in mm/day

Source: Department of Meteorology,  
 Sri-Lanka