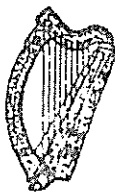


METEOROLOGICAL SERVICE



AGROMETEOROLOGICAL BULLETIN

SEPTEMBER 1984

The Weather of September

A mild southwesterly airflow with accompanying active frontal troughs on 1st and overnight on 2nd was succeeded by a period of brighter and fresher conditions and a northwesterly airflow. A ridge of high pressure dominated on 5th/6th. A slow decline of the ridge enabled weak frontal troughs to pass over the country on 7th/8th and a moderate northwesterly airflow set in on 9th with heavy showers. As the general airflow backed to westerly, further weak rainbelts affected parts of the country on 10th/11th.

Under the varying influence of a ridge of high pressure over northwest Europe and troughs moving in from the west, conditions were changeable over Ireland from 12th to 17th, and some rainbelts or showers affected the country from time to time during the period. As the high declined, a west to northwest airflow set in on 18th; conditions to 22nd were unsettled with spells of rain while cooler northerly winds with showers occurred on 23rd/24th.

A ridge of high pressure on 25th was succeeded by a weak pressure pattern over the area as troughs drifted to the south of the country; southern regions received most rainfall and winds over the country as a whole were light variable. From 29th, freshening southwest winds and further rainbelts affected the country.

Monthly Amounts of Precipitation were near normal except in the southeast, where they were well above normal.

Amounts varied between 73% of normal at Carlow (Oak Park) and 144% at Rosslare. Rainfall was well distributed through the month and wettest days generally were 1st, 3rd, 9th, 13th, 16th/17th, 20th/21st, 27th and 29th.

Cumulative soil moisture deficits were reduced substantially during the month; most areas developed water surpluses but end of month deficits at Oak Park were still 58mm. Major spells of weather favourable to the spread of potato blight occurred from 1st to 3rd, and 11th to 16th.

Mean Monthly Air Temperature was near normal generally, varying from 0.7°C above at Kilkenny to 0.6°C below at Belmullet. Soil temperatures (100mm) at Birr decreased from a mean of 16.6°C for the 5-day period 1st-5th to a minimum of 11.6°C in the period 21st-25th but recovered somewhat over the last pentade. Light ground frost occurred at some stations on 15th, 20th, 25th/26th and 29th/30th.

Mean Duration of Bright Sunshine was below normal almost everywhere varying from 71% at Valentia Observatory to 102% at Rosslare. Global radiation varied from 86% of average at Birr to 107% at Dublin Airport.

Strong Winds with gale gusts occurred on 3rd/4th, 8th/9th, 20th/21st, 23rd and 29th.

Summary Temperature and rainfall were generally near normal but sunshine was below normal.

The data contained in this Bulletin are Provisional. Some of the material in Table 1 will be published in its final form later in the Monthly Weather Report; final values of Solar Radiation at stations in Table 2 will be published in the Annual Summary of Solar Radiation.

TABLE 1 (CONTINUED)

SEPTEMBER 1984

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND													
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR										GROUND		SOIL (10cm)		MEAN DAILY (HRS.)	% OF AVERAGE	MEAN SPEED (ms ⁻¹)	DAYS WITH GALE GUSTS	P.E. (PENMAN) (mm)											
						MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFFERENCE FROM AVERAGE	LOWEST MIN.	DATE	DAYS WITH AIR FROST	DEGREE DAYS ABOVE 4.4°C	% OF AVERAGE	DEGREE DAYS ABOVE 10.0°C	% OF AVERAGE	LOWEST "GRASS-MIN"	DATE	DAYS WITH GROUND FROST						MEAN DAILY	DIFFERENCE FROM AVERAGE									
Glenties Co. Donegal	1-10	N/A	-	N/A	N/A	N/A	N/A	N/A	-	N/A	N/A	N/A	-	N/A	-	N/A	N/A	-	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	11-20	N/A	-	N/A	N/A	N/A	N/A	N/A	-	N/A	N/A	N/A	-	N/A	-	N/A	N/A	-	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-		
	21-END	N/A	-	N/A	N/A	N/A	N/A	N/A	-	N/A	N/A	N/A	-	N/A	-	N/A	N/A	-	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-		
	MONTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	N/A	N/A	-	N/A	-	N/A	N/A	-	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-		
Malin Head Co. Donegal	1-10	44.6	-	7	6	16.3	11.8	14.1	-	10.5	7	0	97	-	41	-	7.4	7	0	14.5	-	1.80	-	8.3	5	-	-	-	-	-	-	-	-		
	11-20	41.6	-	10	8	15.7	10.9	13.3	-	8.4	20	0	89	-	34	-	6.1	18	0	13.7	-	2.70	-	7.8	4	-	-	-	-	-	-	-	-	-	
	21-END	29.1	-	8	6	14.1	8.7	11.4	-	6.3	30	0	70	-	19	-	3.8	21	0	11.4	-	4.48	-	8.4	7	-	-	-	-	-	-	-	-	-	
	MONTH	115.3	114	25	20	15.4	10.5	12.9	-0.1	6.3	30	0	256	100	93	100	3.8	21	0	13.2	+0.1	2.99	81	8.1	16	56	-	-	-	-	-	-	-	-	
Casement Aerodrome Co. Dublin	1-10	33.0	-	5	3	17.5	10.9	14.2	-	6.5	5	0	98	-	44	-	2.4	5	0	15.1	-	2.79	-	5.5	4	-	-	-	-	-	-	-	-	-	
	11-20	16.0	-	8	5	17.3	9.6	13.5	-	2.9	20	0	91	-	39	-	-1.0	20	1	14.3	-	3.52	-	5.4	0	-	-	-	-	-	-	-	-	-	
	21-END	22.0	-	7	6	15.1	6.4	10.7	-	3.4	29	0	64	-	19	-	-0.7	26	1	11.4	-	4.54	-	4.9	4	-	-	-	-	-	-	-	-	-	
	MONTH	71.0	103	20	14	16.6	9.0	12.8	-0.2	2.9	20	0	253	99	101	98	-1.0	20	2	13.6	-	3.62	88	5.3	8	46	-	-	-	-	-	-	-	-	
Dublin Airport Co. Dublin	1-10	33.5	-	4	3	17.2	11.6	14.4	-	7.5	5	0	100	-	45	-	5.3	5	0	16.0	-	2.79	-	4.5	1	-	-	-	-	-	-	-	-	-	
	11-20	14.9	-	6	5	17.4	10.5	14.0	-	5.2	20	0	96	-	42	-	2.9	20	0	15.0	-	3.79	-	4.2	1	-	-	-	-	-	-	-	-	-	-
	21-END	26.3	-	8	5	15.2	7.9	11.6	-	6.1	21	0	72	-	22	-	1.5	26	0	12.4	-	5.31	-	4.5	2	-	-	-	-	-	-	-	-	-	-
	MONTH	74.7	102	18	13	16.6	10.0	13.3	+0.1	5.2	20	0	267	100	109	101	1.5	26	0	14.4	+0.4	3.96	93	4.4	4	49	-	-	-	-	-	-	-	-	
Kinsealy Co. Dublin	1-10	35.9	-	5	4	17.6	11.4	14.5	-	7.2	5	0	101	-	46	-	2.5	5	0	-	-	2.81	-	3.6	-	-	-	-	-	-	-	-	-	-	
	11-20	15.1	-	7	5	18.0	10.7	14.3	-	5.4	20	0	99	-	45	-	2.7	20	0	-	-	3.93	-	3.5	-	-	-	-	-	-	-	-	-	-	
	21-END	27.6	-	6	4	15.7	7.3	11.5	-	4.2	26	0	71	-	22	-	-0.2	26	1	-	-	5.08	-	4.1	-	-	-	-	-	-	-	-	-	-	
	MONTH	78.6	111	18	13	17.1	9.8	13.4	-	4.2	26	0	271	-	114	-	-0.2	26	1	-	-	3.94	-	3.7	-	46	-	-	-	-	-	-	-	-	
Galway Co. Galway	1-10	59.1	-	7	7	17.3	12.0	14.7	-	7.5	5	0	103	-	48	-	3.0	5	0	16.0	-	3.71	-	5.2	2	-	-	-	-	-	-	-	-	-	
	11-20	30.0	-	7	7	17.2	10.9	14.1	-	5.5	15	0	97	-	43	-	3.0	15	0	15.1	-	3.54	-	4.8	2	-	-	-	-	-	-	-	-	-	-
	21-END	33.4	-	7	5	14.3	6.8	10.6	-	4.0	30	0	62	-	15	-	-1.3	30	1	11.7	-	3.99	-	4.5	3	-	-	-	-	-	-	-	-	-	
	MONTH	122.5	110	21	19	16.3	9.9	13.1	-0.2	4.0	30	0	261	-	106	-	-1.3	30	1	14.3	-	3.75	94	4.8	7	44	-	-	-	-	-	-	-	-	
Killarney (Muckross House) Co. Kerry	1-10	33.4	-	8	5	17.3	11.5	14.4	-	5.2	5	0	100	-	45	-	0.5	5	0	-	-	1.31	-	-	-	-	-	-	-	-	-	-	-	-	
	11-20	43.3	-	7	7	17.0	11.5	14.3	-	4.0	15	0	99	-	44	-	0.1	15	0	-	-	2.21	-	-	-	-	-	-	-	-	-	-	-	-	
	21-END	30.6	-	7	6	14.5	7.7	11.1	-	2.5	25	0	67	-	18	-	-1.6	25	2	-	-	2.81	-	-	-	-	-	-	-	-	-	-	-	-	
	MONTH	107.3	79	22	18	16.3	10.2	13.2	-	2.5	25	0	266	-	108	-	-1.6	25	2	-	-	2.11	-	-	-	-	-	-	-	-	-	-	-	-	

NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 1 (CONTINUED)

SEPTEMBER 1984

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND				
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR							GROUND			SOIL (10cm)				MEAN DAILY (HRS.)	% OF AVERAGE	MEAN SPEED (ms ⁻¹)	DAYS WITH GALE GUSTS	P.E. (FENMAN) (mm)		
						MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFFERENCE FROM AVERAGE	LOWEST MIN.	DATE	DAYS WITH AIR FROST	DEGREE DAYS ABOVE 4.4°C	% OF AVERAGE	DEGREE DAYS ABOVE 10.0°C	% OF AVERAGE	LOWEST "GRASS-MIN"	DATE	DAYS WITH GROUND FROST						MEAN DAILY	DIFFERENCE FROM AVERAGE
Cahiriveen (Valentia Obsy.) Co. Kerry	1-10	25.2	-	6	5	18.0	11.8	14.9	-	6.0	6	0	105	-	50	-	4.0	6	0	16.3	-	2.93	-	5.3	2	-
	11-20	36.6	-	9	7	16.8	11.4	14.1	-	6.0	15	0	97	-	42	-	4.3	15	0	15.2	-	2.20	-	5.0	2	-
	21-END	44.2	-	9	7	14.7	7.6	11.1	-	4.0	25	0	67	-	18	-	1.4	25	0	12.3	-	2.80	-	5.1	2	-
	MONTH	106.0	83	24	19	16.5	10.2	13.4	-0.4	4.0	25	0	269	96	110	93	1.4	25	0	14.6	+0.1	2.64	71	5.1	6	39
Ardfert (Liscahane) Co. Kerry	1-10	23.2	-	6	5	18.1	11.6	14.9	-	5.0	5	0	105	-	51	-	N/A	N/A	-	-	3.22	-	-	-	-	-
	11-20	33.0	-	8	7	17.2	11.4	14.3	-	5.6	15	0	99	-	45	-	-2.2	15	1	-	-	2.18	-	-	-	-
	21-END	27.5	-	7	7	14.7	7.9	11.3	-	2.7	25	0	69	-	20	-	-4.4	25	2	-	-	3.40	-	-	-	-
	MONTH	83.7	-	21	19	16.7	10.3	13.5	-	2.7	25	0	273	-	115	-	N/A	N/A	-	-	2.93	-	-	-	-	-
Lullymore Co. Kildare	1-10	26.5	-	5	5	16.9	10.8	13.8	-	4.4	5	0	94	-	41	-	-1.5	5	1	-	-	2.49	-	4.0	-	-
	11-20	24.5	-	4	4	17.0	9.4	13.2	-	3.5	20	0	88	-	37	-	-2.5	20	2	-	-	3.04	-	3.8	-	-
	21-END	30.1	-	7	6	14.7	5.6	10.1	-	2.3	26	0	58	-	15	-	-2.0	26	2	-	-	4.03	-	4.0	-	-
	MONTH	81.1	94	16	15	16.2	8.6	12.4	-	2.3	26	0	241	-	93	-	-2.5	20	5	-	-	3.19	-	3.9	-	34
Kilkenny Co. Kilkenny	1-10	6.0	-	5	2	18.2	11.3	14.7	-	6.4	5	0	103	-	49	-	1.8	5	0	16.2	-	3.04	-	3.6	2	-
	11-20	19.6	-	5	5	18.7	9.7	14.2	-	4.0	15	0	98	-	46	-	-1.4	15	1	15.1	-	3.66	-	3.1	0	-
	21-END	46.1	-	9	6	15.9	7.1	11.5	-	4.4	25	0	71	-	23	-	-0.7	25	1	12.1	-	4.12	-	3.5	2	-
	MONTH	71.7	87	19	13	17.6	9.4	13.5	+0.7	4.0	15	0	272	107	117	113	-1.4	15	2	14.5	+0.4	3.61	95	3.4	4	46
Mooncoin (Silverspring) Co. Kilkenny	1-10	18.0	-	4	3	18.5	11.3	14.9	-	6.4	10	0	105	-	50	-	-0.5	10	1	-	-	3.09	-	-	-	-
	11-20	24.8	-	7	6	18.3	10.3	14.3	-	5.4	15	0	99	-	46	-	-0.9	15	1	-	-	4.94	-	-	-	-
	21-END	43.4	-	8	6	15.5	7.4	11.4	-	4.6	30	0	70	-	21	-	-0.9	25	1	-	-	5.14	-	-	-	-
	MONTH	86.2	93	19	15	17.4	9.7	13.5	-	4.6	30	0	274	-	118	-	-0.9	15	3	-	-	4.39	-	-	-	-
Ballinamore Co. Leitrim	1-10	34.0	-	8	7	16.2	10.6	13.4	-	6.9	7	0	90	-	37	-	-0.1	5	1	-	-	1.91	-	2.9	-	-
	11-20	38.8	-	10	8	16.4	10.2	13.3	-	3.3	20	0	90	-	37	-	-4.7	20	2	-	-	3.07	-	2.8	-	-
	21-END	38.0	-	7	5	14.3	6.3	10.3	-	2.7	29	0	59	-	14	-	-4.0	26	4	-	-	3.50	-	2.7	-	-
	MONTH	110.8	106	25	20	15.7	9.0	12.4	-	2.7	29	0	239	-	88	-	-4.7	20	7	-	-	2.83	-	2.8	-	31
Ardee (Bohernamoe) Co. Louth	1-10	27.0	-	6	4	18.0	10.6	14.3	-	6.4	5	0	99	-	46	-	-1.1	4	1	-	-	-	-	-	-	-
	11-20	20.5	-	6	3	17.5	9.2	13.3	-	1.9	20	0	90	-	39	-	-0.3	20	1	-	-	-	-	-	-	-
	21-END	32.8	-	7	6	15.4	4.9	10.2	-	-0.4	26	1	60	-	16	-	-0.9	26	1	-	-	-	-	-	-	-
	MONTH	80.3	102	19	13	17.0	8.2	12.6	-	-0.4	26	1	249	-	100	-	-1.1	4	3	-	-	-	-	-	-	-

NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 1 (CONTINUED)

SEPTEMBER 1984

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND		P.E. (PENMAN) (mm)		
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR							GROUND			SOIL (10cm)				MEAN DAILY (HRS.)	% OF AVERAGE	MEAN SPEED (ms ⁻¹)	DAYS WITH GALE GUSTS			
						MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFFERENCE FROM AVERAGE	LOWEST MIN.	DATE	DAYS WITH AIR FROST	DEGREE DAYS ABOVE 4.4°C	% OF AVERAGE	DEGREE DAYS ABOVE 10.0°C	% OF AVERAGE	LOWEST "GRASS-MIN"	DATE	DAYS WITH GROUND FROST						MEAN DAILY	DIFFERENCE FROM AVERAGE
Ballinrobe (Creagh) Co. Mayo	1-10	31.6	-	8	7	17.5	11.5	14.5	-	7.4	5	0	101	-	47	-	1.1	5	0	-	-	5.42	-	2.9	-	-
	11-20	37.6	-	7	5	17.0	10.4	13.7	-	2.4	15	0	93	-	40	-	-1.8	15	2	-	-	3.26	-	3.4	-	-
	21-END	39.0	-	9	7	14.2	5.6	9.9	-	2.2	29	0	57	-	13	-	-1.3	26	3	-	-	2.65	-	2.6	-	-
	MONTH	108.2	92	24	19	16.3	9.2	12.7	-	2.2	29	0	251	-	100	-	-1.8	15	5	-	-	3.11	-	3.0	-	30
Belmullet Co. Mayo	1-10	11.1	-	8	4	17.2	11.8	14.5	-	8.6	6	0	101	-	46	-	3.8	6	0	16.3	-	3.24	-	6.4	3	-
	11-20	40.3	-	8	6	16.3	10.4	13.3	-	4.0	15	0	89	-	36	-	0.8	15	0	14.9	-	2.70	-	6.7	3	-
	21-END	41.5	-	9	8	14.0	6.8	10.4	-	3.2	29	0	60	-	14	-	-0.7	25	3	12.2	-	4.17	-	6.2	3	-
	MONTH	92.9	88	25	18	15.9	9.6	12.7	-0.6	3.2	29	0	251	97	96	97	-0.7	25	3	14.5	+0.7	3.37	88	6.4	9	46
Claremorris Co. Mayo	1-10	33.0	-	6	5	17.4	10.5	13.9	-	5.9	5	0	95	-	42	-	2.4	5	0	15.1	-	2.57	-	4.6	2	-
	11-20	34.3	-	8	8	16.9	9.0	12.9	-	1.5	15	0	86	-	35	-	-1.6	20	2	14.0	-	2.06	-	4.6	2	-
	21-END	38.0	-	9	9	14.0	5.2	9.6	-	1.7	29	0	54	-	12	-	-1.5	29	2	10.8	-	2.37	-	4.1	3	-
	MONTH	105.3	98	23	22	16.1	8.3	12.2	-0.2	1.5	15	0	235	98	89	100	-1.6	20	4	13.3	-0.0	2.33	72	4.4	7	30
Glenamoy Co. Mayo	1-10	19.3	-	8	7	17.3	11.3	14.3	-	6.4	6	0	99	-	44	-	3.5	6	0	-	-	3.18	-	3.4	-	-
	11-20	47.4	-	8	5	16.5	9.9	13.2	-	2.4	15	0	88	-	35	-	-0.4	15	1	-	-	2.82	-	3.3	-	-
	21-END	56.0	-	10	7	13.8	5.8	9.8	-	0.6	29	0	56	-	13	-	-1.3	29	1	-	-	3.72	-	3.0	-	-
	MONTH	122.7	95	26	19	15.9	9.0	12.4	-	0.6	29	0	243	-	92	-	-1.3	29	2	-	-	3.24	-	3.3	-	33
Dunsany (Grange) Co. Meath	1-10	45.3	-	5	4	16.7	10.9	13.8	-	5.5	5	0	94	-	40	-	0.5	5	0	-	-	2.59	-	-	-	-
	11-20	18.0	-	6	4	16.9	8.3	12.6	-	1.5	20	0	82	-	33	-	-1.0	20	1	-	-	3.31	-	-	-	-
	21-END	34.7	-	4	4	N/A	N/A	N/A	-	N/A			N/A	-	N/A	-	N/A		N/A	-	-	N/A	-	-	-	-
	MONTH	98.0	121	15	12	N/A	N/A	N/A	-	N/A			N/A	-	N/A	-	N/A		N/A	-	-	N/A	-	-	-	-
Clones Co. Monaghan	1-10	26.8	-	7	5	16.5	10.5	13.5	-	6.9	5	0	91	-	37	-	2.5	5	0	14.8	-	2.28	-	2.9	1	-
	11-20	23.0	-	10	5	16.6	9.7	13.2	-	3.1	20	0	88	-	36	-	-1.9	20	1	13.9	-	3.48	-	2.9	1	-
	21-END	40.6	-	9	9	14.6	6.2	10.4	-	0.2	26	0	61	-	16	-	-3.2	26	1	11.3	-	3.89	-	2.9	1	-
	MONTH	90.4	106	26	19	15.9	8.8	12.3	+0.0	0.2	26	0	240	100	88	99	-3.2	26	2	13.3	-0.0	3.22	98	2.9	3	34
Birr Co. Offaly	1-10	31.9	-	6	5	17.2	11.1	14.2	-	4.9	5	0	98	-	43	-	1.1	5	0	15.6	-	2.11	-	4.0	2	-
	11-20	22.6	-	7	5	17.0	9.8	13.4	-	3.3	15	0	90	-	38	-	0.4	15	0	14.8	-	3.13	-	4.1	1	-
	21-END	27.0	-	8	7	14.7	6.9	10.8	-	4.8	30	0	64	-	18	-	1.6	29	0	12.0	-	3.75	-	4.1	3	-
	MONTH	81.5	103	21	17	16.3	9.3	12.8	-0.2	3.3	15	0	252	98	99	97	0.4	15	0	14.1	+0.1	3.00	81	4.1	6	40

NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 1 (CONTINUED)

SEPTEMBER 1984

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND		P.E. (PENMAN) (mm)				
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR							GROUND			SOIL (10cm)				MEAN DAILY (HRS.)	% OF AVERAGE	MEAN SPEED (ms ⁻¹)	DAYS WITH GALE GUSTS					
						MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFFERENCE FROM AVERAGE	LOWEST MIN.	DATE	DAYS WITH AIR FROST	DEGREE DAYS ABOVE 4.4°C	% OF AVERAGE	DEGREE DAYS ABOVE 10.0°C	% OF AVERAGE	LOWEST "GRASS-MIN"	DATE	DAYS WITH GROUND FROST						MEAN DAILY	DIFFERENCE FROM AVERAGE		
Dundrum (Knockavilla) Co. Tipperary	1-10	17.7	-	5	5	17.4	11.1	14.3	-	6.4	5	0	99	-	44	-	0.7	5	0	-	-	-	-	-	-	-	-	-
	11-20	37.1	-	8	5	17.3	10.2	13.7	-	4.6	15	0	93	-	40	-	-1.8	15	1	-	-	-	-	-	-	-	-	-
	21-END	30.2	-	7	5	14.8	6.6	10.7	-	3.7	29	0	63	-	17	-	-1.1	30	1	-	-	-	-	-	-	-	-	-
	MONTH	85.0	-	20	15	16.5	9.3	12.9	-	3.7	29	0	255	-	101	-	-1.8	15	2	-	-	-	-	-	-	-	-	-
Dungarvan (Carriglea) Co. Waterford	1-10	36.8	-	5	3	18.5	10.3	14.4	-	6.6	5	0	100	-	47	-	5.2	5	0	-	-	3.38	-	2.2	-	-	-	-
	11-20	33.9	-	7	6	19.1	10.1	14.6	-	5.8	15	0	102	-	49	-	5.0	15	0	-	-	5.06	-	2.2	-	-	-	-
	21-END	60.1	-	8	6	15.6	7.4	11.5	-	3.8	25	0	71	-	23	-	3.8	25	0	-	-	4.66	-	2.5	-	-	-	-
	MONTH	130.8	127	20	15	17.8	9.3	13.5	-	3.8	25	0	274	-	119	-	3.8	25	0	-	-	4.37	-	2.3	-	41	-	-
Mullingar Co. Westmeath	1-10	55.5	-	5	4	16.6	10.6	13.6	-	5.5	5	0	92	-	38	-	2.1	5	0	15.1	-	2.50	-	3.7	1	-	-	-
	11-20	25.5	-	9	6	16.7	9.7	13.2	-	4.1	20	0	88	-	36	-	0.6	20	0	14.5	-	3.18	-	3.5	0	-	-	-
	21-END	25.7	-	8	6	14.5	6.6	10.5	-	4.8	30	0	61	-	16	-	2.8	26	0	11.5	-	4.29	-	3.6	2	-	-	-
	MONTH	106.7	119	22	16	15.9	9.0	12.4	+0.0	4.1	20	0	241	98	89	93	0.6	20	0	13.7	+0.1	3.32	91	3.6	3	37	-	-
J.F.K. Park Co. Wexford	1-10	10.0	-	3	1	17.9	8.5	13.2	-	3.6	5	0	88	-	37	-	-2.5	5	1	-	-	3.26	-	N/A	-	-	-	-
	11-20	25.9	-	7	5	18.1	7.3	12.7	-	3.7	18	0	83	-	34	-	-2.0	15	2	-	-	4.98	-	N/A	-	-	-	-
	21-END	45.9	-	7	6	15.1	4.6	9.9	-	3.0	30	0	56	-	15	-	-3.0	25	4	-	-	5.02	-	N/A	-	-	-	-
	MONTH	81.8	84	17	12	17.0	6.8	11.9	-	3.0	30	0	227	-	86	-	-3.0	25	7	-	-	4.42	-	N/A	-	N/A	-	-
Clonroche Co. Wexford	1-10	20.3	-	3	2	18.2	10.5	14.3	-	7.4	5	0	99	-	45	-	0.1	5	0	-	-	3.96	-	2.3	-	-	-	-
	11-20	18.9	-	5	4	18.0	9.3	13.7	-	6.4	15	0	93	-	40	-	-1.4	19	2	-	-	4.43	-	2.0	-	-	-	-
	21-END	54.8	-	6	5	15.2	6.5	10.9	-	4.7	24	0	65	-	18	-	-1.4	24	4	-	-	5.19	-	2.1	-	-	-	-
	MONTH	94.0	85	14	11	17.1	8.8	13.0	-	4.7	24	0	257	-	104	-	-1.4	19	6	-	-	4.53	-	2.1	-	N/A	-	-
Johnstown Castle Co. Wexford	1-10	15.4	-	3	2	17.7	11.9	14.8	-	7.8	5	0	104	-	49	-	4.5	5	0	-	-	3.80	-	4.0	-	-	-	-
	11-20	32.6	-	7	4	17.6	10.7	14.2	-	7.7	18	0	98	-	43	-	1.9	18	0	-	-	5.23	-	3.7	-	-	-	-
	21-END	59.4	-	6	6	14.5	8.0	11.3	-	6.0	30	0	69	-	19	-	1.6	25	0	-	-	5.15	-	4.4	-	-	-	-
	MONTH	107.4	115	16	12	16.6	10.2	13.4	-	6.0	30	0	271	-	111	-	1.6	25	0	-	-	4.73	-	4.1	-	47	-	-
Rosslare Co. Wexford	1-10	32.3	-	3	1	18.0	12.7	15.4	-	9.5	10	0	110	-	54	-	7.2	10	0	16.7	-	4.27	-	5.7	5	-	-	-
	11-20	28.1	-	6	5	17.7	11.4	14.5	-	8.9	18	0	102	-	46	-	7.1	18	0	15.3	-	5.00	-	5.3	3	-	-	-
	21-END	53.1	-	7	6	15.3	8.6	12.0	-	6.5	24	0	76	-	24	-	4.4	24	0	12.7	-	5.46	-	5.4	5	-	-	-
	MONTH	113.5	144	16	12	17.0	10.9	14.0	+0.3	6.5	24	0	286	102	124	106	4.4	24	0	14.9	+0.0	4.91	102	5.5	13	59	-	-

NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 2 GLOBAL (SOLAR) RADIATION

STATION	PERIOD	AMOUNT
		Joule/cm ²
Malin Head Co. Donegal	1-10	9077
	11-20	8897
	21-end	8946
	Month	26920
Dublin Airport Co. Dublin	1-10	8988
	11-20	9750
	21-end	10019
	Month	28757
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	10415
	11-20	8561
	21-end	7993
	Month	26969
Kilkenny Co. Kilkenny	1-10	9695
	11-20	9718
	21-end	9282
	Month	28695
Belmullet Co. Mayo	1-10	10337
	11-20	8944
	21-end	8827
	Month	28108
Clones Co. Monaghan	1-10	8685
	*9 DAYS *11-20	8740
	21-end	8857
	*29 DAYS *Month	26282
Birr Co. Offaly	1-10	8522
	11-20	9077
	21-end	8643
	Month	26242

Notes on the tables in January issue

TABLE 3 POTENTIAL EVAPOTRANSPIRATION (P.E.) AND SOIL MOISTURE

STATION	PERIOD	P.E. (mm)		SOIL MOISTURE (mm)	
		Amount	Deficit	Accumulated Deficit	Surplus
Carlow (Oak Park) Co. Carlow	1-10	26.7	1	95	-
	11-20	27.7	-	90	5
	21-end	10.3	-	58	32
	Month	64.7	-	-	-
Kinsealy Co. Dublin	1-10	17.2	-	60	30
	11-20	15.8	-	55	5
	21-end	18.2	-	40	15
	Month	51.2	-	-	-
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	11.2	-	0	12
	11-20	17.3	-	0	14
	21-end	9.1	-	0	40
	Month	37.6	-	-	-
Ballinamore Co. Leitrim	10-10	12.4	-	0	48
	11-20	1.4	-	0	28
	21-end	10.9	-	0	36
	Month	24.7	-	-	-
Glenamoy Co. Mayo	1-10	16.1	-	27	3
	11-20	11.3	-	8	19
	21-end	12.0	-	0	62
	Month	39.4	-	-	-
Johnstown Castle Co. Wexford	1-10	30.5	-	81	4
	11-20	26.5	-	60	21
	21-end	27.1	-	19	41
	Month	84.1	-	-	-

TABLE 4 SOIL CLIMATE (MULLINGAR)

BARE SOIL TYPE	PERIOD	MEAN TEMPERATURE (°C at 100mm)			TEMPERATURE GRADIENT (to 200mm)	SOIL WATER POTENTIAL (hPa) (at depths)	
		Max.	Daily	Min.		75mm	200mm
		Peat	1-10	16.2	15.2	14.4	+ 0.8
11-20	15.2		14.3	13.1	+ 0.6	69	69
21-end	12.4		11.5	10.3	+ 1.0	61	64
Mineral	1-10	17.0	15.2	14.0	+ 0.5	71	70
	11-20	17.1	15.0	13.5	+ 0.3	77	75
	21-end	13.5	11.8	10.5	+ 0.6	62	61

special topic

THE 1984 DROUGHT: WHAT IT COST THE GRASS FARMERS

In the June and July Special Topic evaporation and soil moisture were discussed. The August Special Topic dealt with the development of the SMD in 1984 which was compared to the average year. A general statement of the drought effect on crop production was also made. In this article figures on the actual cost of the drought to the grass farmer are given.

At Johnstown Castle a grass growth model has been constructed so that grass growth rates under rotational grazing (using 250 kg N ha^{-1}) can be calculated using daily mean temperature, sunshine hours and rainfall. The accuracy of this model has been tested and proved quite satisfactory for relating animal production to calculated grass supply (1,2).

Using this model cumulative grass growth rates were calculated for 1984 and the average for the 11 years 1972 to 1982. The dry matter losses from drought in 1984 compared to the 11 year average has been estimated. For the six sites examined these losses varied from 4.6% and to 11.8% of normal production up to the end of August (Table 1).

Taking a typical 20 ha farm carrying 50 cows the cost to the farmer may be estimated in terms of the value of the barley required to replace the grass lost by drought. In the normal year the dairy farmer spends 90 punts on meals which are fed in late winter and early spring. In the south east the drought increased the feed bill by 40%.

The model takes no account of soils type so that greater losses would be expected in areas with shallow or sandy soils.

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An Foras Taluntais
Johnstown Castle

REFERENCES

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2. Ryan, M., Brereton, A.J. and Keeffe, W.F. Seasonal Production of Ryegrass Cultivars as Affected by Weather Factors in Spring - Early Summer. Proceedings of the 10th General Meeting of the European Grassland Federation (Ed. H. Riley and A.O. Shjelvag). pp135-139.

Table 1.

Site	1984				
	Yield Reduction (kg/ha)	% of normal production	Total loss 20 ha farm (tonnes)	Replacement cost	Cost/cow (50 cows)
Roches Point	419	5.4	8.4	£1005	£20
Fermoy	536	7.8	10.7	£1286	£26
Johnstown Castle	686	9.9	13.7	£1646	£33
Kilkenny	782	11.8	15.6	£1877	£38
Claremorris	531	8.2	10.6	£1274	£26
Clones	285	4.6	5.7	£685	£14