



Agrometeorological Bulletin

The Weather of September 1989

Summary

1st - 12th : High pressure and mainly dry
13th - 22nd : Unsettled and wet with some strong winds
23rd - end : Rising pressure becoming settled.

Meteorological Situation

An Atlantic high pressure cell dominated until receding towards Scandinavia on 12th; the weather was mainly dry although weak frontal troughs with drizzle and rain affected the country on 1st, 4th (early) and 6th.

Following the high an unsettled spell set in and a series of frontal troughs or warm sector conditions from the Atlantic became prominent; southwest to west winds freshened on occasion, especially on 15th as a very deep low (with origins in hurricane "Gabrielle") swept out of the North Atlantic via the northwest of Scotland. Further weather systems associated with active depression systems affected the country from 18th to 21st, the final low centre passing over the country on 22nd.

The succeeding lows were held to the west of Ireland as high pressure over the continent extended westwards; for a time the west and northwest coastal regions continued to receive spells of drizzle. Finally from 27th high pressure dominated through the end of the month.

Precipitation

Monthly precipitation amounts were well below normal everywhere ranging from 34% of normal at Dublin Airport to 88% of normal at J.F.K park Wexford. The spell from 13th to 22nd was wet — the wettest days were 21st / 22nd. Otherwise the rest of the month tended to be dry. Soil moisture deficits although less than average gave very good ground conditions for harvesting and autumn ploughing throughout the month except in the west and southmidlands for a short spell.

Sunshine and Radiation

Sunshine hours were mostly well below normal. They varied from 70% at Birr to 114% at Caherciveen. Global radiation varied from 114% of normal at Valentia to 89% of normal at Birr.

Temperature

Mean air temperature was mostly above normal but below normal in the extreme west. Values varied from 0.5°C above normal at Dublin Airport and Rosslare to 0.4°C below at Belmullet. Night-time values also tended to be above average.

Wind

Winds were strong with gale to storm gusts on 15th, and 18th to 20th.

NOTE: The data contained in this bulletin are provisional. Some of the material in Table 1 will be published in its final form in the Monthly Weather Report; final values of Global Radiation at stations in Table 2 will be published in the annual Solar Radiation Observations.

Annual
Sub. £ 20.00

TABLE I

SEPTEMBER 1989

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)										BRIGHT SUNSHINE		WIND																										
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	MEAN MAX.		MEAN MIN.		MEAN DAILY		DIFFERENCE FROM AVERAGE		LOWEST MIN.		DATE		DAYS WITH AIR FROST		DEGREE DAYS ABOVE 4.4°C		Z OF AVERAGE		DEGREE DAYS ABOVE 10.0°C		Z OF AVERAGE		LOWEST "GRASS-MIN"		GROUND		SOIL (10cm)		TOTAL NO. OF HOURS		% OF AVERAGE		MEAN SPEED (ms⁻¹)		DAYS WITH GALE GUSTS				
Carlow (Oak Park) Co. Carlow	1-10	0.3	-	1	0	18.0	8.6	13.3	-	3.8	3	0	89	-	37	-	0.0	3	0	-	-	-	40.5	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	11-20	50.4	-	7	7	17.9	8.9	13.4	-	5.7	14	0	90	-	38	-	1.7	17	0	-	-	-	28.1	-	4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	21-END	53.3	-	3	3	16.2	10.5	13.3	-	6.0	29	0	89	-	36	-	2.0	29	0	-	-	-	28.8	-	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	MONTH	104.0	-	11	10	17.4	9.3	13.3	-	3.8	3	0	268	-	111	-	0.0	3	0	-	-	-	97.4	-	2.6	-	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Shannon Airport e Co. Clare	1-10	0.2	-	1	0	17.6	9.9	13.7	-	6.6	9	0	93	-	39	-	2.7	9	0	15.9	-	41.7	-	3.4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	11-20	44.3	-	7	7	17.7	10.5	14.1	-	6.4	11	0	97	-	42	-	1.3	17	0	14.6	-	32.6	-	4.5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	21-END	7.0	-	2	1	16.4	11.1	13.8	-	6.5	30	0	94	-	40	-	0.3	30	0	14.4	-	27.6	-	3.5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	MONTH	51.5	57	10	8	17.2	10.5	13.9	+0.2	6.4	11	0	284	97	121	97	0.3	30	0	14.9	+0.3	101.9	91	3.8	4	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cork Airport e Co. Cork	1-10	0.0	-	0	0	17.2	9.7	13.5	-	8.0	9	0	91	-	36	-	4.5	1	0	15.4	-	52.8	-	4.3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	11-20	49.3	-	6	6	16.7	10.3	13.5	-	7.5	11	0	91	-	38	-	3.3	14	0	14.6	-	25.4	-	6.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	21-END	22.4	-	2	1	15.8	9.9	12.8	-	5.4	30	0	84	-	31	-	3.9	30	0	14.3	-	46.9	-	5.3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	MONTH	71.7	62	8	7	16.6	10.0	13.3	+0.4	5.4	30	0	266	101	105	106	3.3	14	0	14.7	+1.1	125.1	104	5.3	4	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fermoy (Coolnakilla) Co. Cork	1-10	1.6	-	1	1	16.6	9.0	12.8	-	8.0	5	0	84	-	30	-	2.2	6	0	-	-	-	47.6	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	11-20	32.7	-	7	6	16.1	8.4	12.3	-	5.3	14	0	79	-	27	-	1.0	17	0	-	-	-	27.9	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	21-END	28.6	-	4	2	15.4	10.1	12.8	-	6.2	29	0	84	-	31	-	1.2	29	0	-	-	-	29.4	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	MONTH	62.9	-	12	9	16.0	9.2	12.6	-	5.3	14	0	246	-	88	-	1.0	17	0	-	-	-	113.9	-	N/A	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fermoy (Moore Park) Co. Cork	1-10	0.0	-	0	0	17.9	8.7	13.3	-	4.4	3	0	89	-	38	-	-2.0	3	4	-	-	-	50.6	-	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	11-20	N/A	-	N/A	N/A	N/A	7.6	N/A	-	3.7	14	0	N/A	-	N/A	-	-4.5	14	3	-	-	-	N/A	-	N/A	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	21-END	11.6	-	2	1	16.6	10.5	13.5	-	4.0	30	0	91	-	39	-	-2.5	30	2	-	-	-	40.5	-	N/A	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	MONTH	N/A	N/A	N/A	N/A	N/A	8.9	N/A	-	3.7	14	0	N/A	-	N/A	-	-4.5	14	9	-	-	-	N/A	-	N/A	-	N/A	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roches Point e Co. Cork	1-10	0.0	-	0	0	17.5	10.6	14.1	-	9.6	6	0	97	-	41	-	3.0	1	0	16.4	-	54.9	-	4.3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	11-20	33.9	-	7	5	17.3	11.4	14.4	-	8.1	14	0	100	-	44	-	3.2	14	0	15.1	-	31.3	-	6.6	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	21-END	21.8	-	2	2	16.4	10.9	13.7	-	8.0	28	0	93	-	38	-	4.2	30	0	15.1	-	52.6	-	5.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	MONTH	55.7	62	9	7	17.1	11.0	14.0	+0.3	8.0	28	0	289	99	123	103	3.0	1	0	15.5	+1.0	138.8	109	5.3	5	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glencolumbkille Co. Donegal	1-10	12.3	-	7	4	15.4	9.1	12.3	-	6.0	3	0	79	-	26	-	0.5	3	0	-	-	-	N/A	-	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11-20	63.3	-	8	8	16.6	8.4	12.5	-	5.5	11	0	81	-	29	-	1.5	11	0	-	-	-	N/A	-	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	21-END	17.4	-	8	6	15.4	10.0	12.7	-	7.0	26	0	83	-	29	-	2.3	23	0	-	-	-	N/A	-	2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	MONTH	93.0	-	23	18	15.8	9.2	12.5	-	5.5	11	0	243	-	84	-	0.5	3	0	-	-	-	N/A	-	2.9	-	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE I (CONTINUED)

SEPTEMBER 1989

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)												BRIGHT SUNSHINE			WIND
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR			GROUND			SOIL (10cm)			TOTAL NO. OF HOURS	% OF AVERAGE	MEAN SPEED (ms⁻¹)	DAYS WITH GALE GUSTS	P.E. (PENMAN) (mm)		
						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	11.2	-	5	4	15.5	7.7	11.6	-	1.5	9	0	73	-	24	-4.9	9	3	-	-	-
	11-20	46.3	-	8	7	16.1	8.2	12.2	-	1.6	11	0	78	-	27	-5.7	11	3	-	-	-
	21-END	9.5	-	5	4	15.0	8.9	12.0	-	5.2	23	0	76	-	25	-2.1	23	2	-	-	-
	MONTH	67.0	46	18	15	15.5	8.3	11.9	-	1.5	9	0	227	-	75	-5.7	11	0	-	-	-
Malin Head Co. Donegal	1-10	8.3	-	5	1	14.8	10.9	12.9	-	9.3	3	0	85	-	29	-	6.5	3	0	13.9	-
	11-20	26.2	-	9	7	16.5	10.2	13.4	-	8.9	15	0	90	-	34	-	6.9	11	0	13.1	-
	21-END	9.9	-	3	3	15.0	10.2	12.6	-	5.9	26	0	82	-	28	-	3.4	26	0	12.6	-
	MONTH	44.4	44	17	11	15.5	10.4	12.9	-0.1	5.9	26	0	256	95	91	93	3.4	26	0	13.2	+0.1
Casement Aerodrome Co. Dublin	1-10	1.1	-	2	0	16.5	9.1	12.8	-	5.0	3	0	84	-	31	-	2.1	3	0	14.4	-
	11-20	13.6	-	7	5	17.3	9.7	13.5	-	5.2	17	0	91	-	38	-	2.3	17	0	14.0	-
	21-END	35.7	-	2	2	16.2	10.0	13.1	-	3.6	29	0	87	-	35	-	1.3	29	0	13.7	-
	MONTH	50.4	73	11	7	16.7	9.6	13.1	+0.1	3.6	29	0	262	96	104	94	1.3	29	0	14.0	-
Dublin Airport Co. Dublin	1-10	0.7	-	1	0	17.0	10.2	13.6	-	7.7	3	0	92	-	37	-	4.5	3	0	15.7	-
	11-20	8.7	-	7	4	17.3	10.7	14.0	-	6.5	14	0	96	-	42	-	1.8	14	0	14.7	-
	21-END	15.7	-	3	2	16.5	10.6	13.5	-	5.6	29	0	91	-	38	-	2.3	29	0	14.1	-
	MONTH	25.1	34	11	6	16.9	10.5	13.7	+0.5	5.6	29	0	279	100	116	104	1.8	14	0	14.9	+0.9
Kinsealy Co. Dublin	1-10	0.3	-	1	0	17.3	10.3	13.8	-	5.6	3	0	94	-	40	-	-5.8	3	5	-	N/A
	11-20	10.8	-	7	3	17.9	10.1	14.0	-	6.8	14	0	96	-	42	-	-6.1	17	3	-	N/R
	21-END	15.9	-	3	2	17.1	9.7	13.4	-	5.4	29	0	90	-	36	-	-4.2	29	5	-	N/A
	MONTH	27.0	38	11	5	17.4	10.0	13.7	-	5.4	29	0	280	-	118	-	-6.1	17	13	-	N/A
Galway Co. Galway	1-10																				
	11-20																				
	21-END																				
	MONTH																				
Killarney (Muckross House) Co. Kerry	1-10	0.8	-	3	0	17.0	9.0	13.0	-	6.4	5	0	86	-	34	-	4.3	10	0	-	40.9
	11-20	110.1	-	8	7	17.2	9.3	13.2	-	4.6	17	0	88	-	36	-	4.6	17	0	-	22.2
	21-END	6.8	-	3	3	16.0	11.1	13.5	-	4.9	29	0	91	-	38	-	10.5	22	0	-	32.5
	MONTH	117.7	87	14	10	16.7	9.8	13.3	-	4.6	17	0	266	-	108	-	4.3	10	0	-	95.6

TABLE 1 (CONTINUED)

SEPTEMBER 1989

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)										GROUND		SOIL (10cm)		BRIGHT SUNSHINE		WIND				
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR					DATE	DAYS WITH AIR FROST	DEGREE DAYS ABOVE 4.4°C	% OF AVERAGE	DATE	DAYS WITH GROUND FROST	MEAN DAILY	DIFFERENCE FROM AVERAGE	TOTAL NO. OF HOURS	% 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.																
Cahirciveen (Valentia Obsy.) Co. Kerry	1-10	2.8	-	2	1	17.1	10.4	13.7	-	7.7	5	0	93	-	39	-	4.4	5	0	15.7	-	46.4	-	3.6	0	-
	11-20	85.6	-	7	6	17.1	10.0	13.5	-	6.8	12	0	91	-	30	-	4.4	12	0	15.1	-	37.1	-	4.9	5	-
	21-END	2.8	-	4	2	16.5	11.0	13.8	-	5.2	30	0	94	-	40	-	2.2	29	0	14.6	-	43.9	-	4.1	2	-
	MONTH	91.2	71	13	9	16.9	10.5	13.7	+0.1	5.2	30	0	278	95	117	96	2.2	29	0	15.1	+0.6	127.4	114	4.2	7	49
Ardfert (Liscahane) Co. Kerry	1-10	0.6	-	1	0	17.3	8.1	12.7	-	3.4	9	0	83	-	32	-	0.2	9	0	-	-	48.5	-	-	-	-
	11-20	59.0	-	8	7	17.4	9.0	13.2	-	3.2	11	0	88	-	37	-	0.8	17	0	-	-	30.2	-	-	-	-
	21-END	7.4	-	4	3	16.2	10.3	13.3	-	4.0	30	0	89	-	37	-	0.2	29	0	-	-	36.5	-	-	-	-
	MONTH	67.0	-	13	10	17.0	9.2	13.1	-	3.2	11	0	260	-	106	-	0.2	9	0	-	-	115.2	-	-	-	-
Lullymore Co. Kildare	1-10	N/R	-	N/R	N/R	N/R	N/R	N/R	-	N/R	N/R	N/R	N/R	-	N/R	-	N/R	N/R	-	-	-	N/R	-	N/R	-	-
	11-20	N/A	-	N/R	N/R	N/R	N/R	N/R	-	N/R	N/R	N/R	N/R	-	N/R	-	N/R	N/R	-	-	-	N/R	-	N/R	-	-
	21-END	N/R	-	N/R	N/R	N/R	N/R	N/R	-	N/R	N/R	N/R	N/R	-	N/R	-	N/R	N/R	-	-	-	N/R	-	N/R	-	-
	MONTH	N/A	N/A	N/R	N/R	N/R	N/R	N/R	-	N/R	N/R	N/R	N/R	-	N/R	-	N/R	N/R	-	-	-	N/R	-	N/R	-	N/R
Kilkenny Co. Kilkenny	1-10	0.7	-	2	0	17.4	8.2	12.8	-	2.4	3	0	84	-	34	-	-1.9	3	1	15.1	-	38.4	-	2.2	0	-
	11-20	18.0	-	9	3	17.7	9.2	13.4	-	4.2	17	0	90	-	39	-	-0.4	14	1	14.5	-	24.4	-	3.3	4	-
	21-END	17.4	-	4	3	16.2	10.0	13.1	-	4.7	29	0	87	-	35	-	-0.3	29	1	14.3	-	28.5	-	2.2	0	-
	MONTH	36.9	45	15	6	17.1	9.1	13.1	+0.3	2.4	3	0	262	98	107	94	-1.9	3	3	14.6	+0.5	91.3	80	2.6	4	37
Mooncoin (Silverspring) Co. Kilkenny	1-10	0.0	-	0	0	18.4	6.9	12.7	-	1.2	3	0	83	-	35	-	-4.1	3	2	-	-	53.3	-	-	-	-
	11-20	33.6	-	7	5	18.0	8.3	13.2	-	3.1	14	0	88	-	37	-	-2.4	14	3	-	-	30.5	-	-	-	-
	21-END	11.8	-	2	2	16.9	10.8	13.8	-	6.1	30	0	94	-	41	-	-1.2	30	1	-	-	38.7	-	-	-	-
	MONTH	45.4	49	9	7	17.7	8.7	13.2	-	1.2	3	0	266	-	113	-	-4.1	3	6	-	-	122.5	-	-	-	-
Ballinamore Co. Leitrim	1-10	7.7	-	4	3	15.9	7.8	11.9	-	3.9	8	0	75	-	24	-	-7.0	8	1	-	-	27.2	-	2.0	-	-
	11-20	60.3	-	8	8	17.0	7.2	12.1	-	4.0	17	0	77	-	28	-	-3.5	11	1	-	-	32.6	-	2.4	-	-
	21-END	12.0	-	5	4	15.4	8.9	12.1	-	2.1	29	0	76	-	26	-	0.5	29	0	-	-	19.8	-	2.1	-	-
	MONTH	80.0	76	17	15	16.1	8.0	12.0	-	2.1	29	0	229	-	78	-	-7.0	8	2	-	-	79.6	-	2.1	-	28
Ardee (Boharnamoe) Co. Louth	1-10	3.1	-	2	1	18.0	3.8	10.9	-	2.0	9	0	68	-	26	-	1.0	9	0	-	-	-	-	-	-	-
	11-20	26.5	-	7	6	18.5	5.8	12.1	-	2.3	11	0	78	-	32	-	1.0	11	0	-	-	-	-	-	-	-
	21-END	16.8	-	3	2	17.1	9.3	13.2	-	4.9	22	0	88	-	35	-	1.9	22	0	-	-	-	-	-	-	-
	MONTH	46.4	59	12	9	17.9	6.3	12.1	-	2.0	9	0	234	-	93	-	1.0	9	0	-	-	-	-	-	-	-

TABLE I (CONTINUED)

SEPTEMBER 1989

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)												BRIGHT SUNSHINE		WIND	
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR			LOWEST MIN.	DATE	AIR FROST			LOWEST "GRASS-MIN"	GROUND	SOIL (10cm)	TOTAL NO. OF HOURS	% OF AVERAGE	MEAN SPEED (ms⁻¹)	DAYS WITH GALE GUSTS	
						MEAN MAX.	MEAN MIN.	MEAN DAILY			DEGREE DAYS ABOVE 4.4°C	% OF AVERAGE	DEGREE DAYS ABOVE 10.0°C	% OF AVERAGE	MEAN DAILY	DAYS WITH GROUND FROST					
Ballinrobe (Creagh) Co. Mayo	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	-	
Belmullet Co. Mayo	1-10	9.9	-	6	5	15.6	9.7	12.7	-	6.5	10	0	83	-	30	-	1.6	10	0	15.0	-
	11-20	46.2	-	9	7	16.3	9.8	13.0	-	5.4	11	0	86	-	32	-	0.1	11	0	14.1	-
	21-END	5.5	-	7	1	15.3	11.0	13.1	-	6.9	22	0	87	-	32	-	3.8	22	0	14.2	-
	MONTH	61.6	50	22	13	15.7	10.1	12.9	-0.4	5.4	11	0	256	93	94	90	0.1	11	0	14.4	+0.6
Claremorris Co. Mayo	1-10	5.1	-	3	2	16.1	7.5	11.8	-	4.9	8	0	74	-	24	-	0.9	8	0	13.4	-
	11-20	61.0	-	8	7	16.5	7.7	12.1	-	4.4	11	0	77	-	27	-	0.6	14	0	13.0	-
	21-END	4.2	-	4	2	15.6	10.2	12.9	-	5.1	29	0	85	-	32	-	2.0	29	0	13.4	-
	MONTH	70.3	66	15	11	16.1	8.5	12.3	-0.1	4.4	11	0	237	93	83	86	0.6	14	0	13.3	-0.0
Glenamoy Co. Mayo	1-10	9.3	-	4	3	15.3	7.9	11.6	-	3.2	3	0	73	-	23	-	1.1	10	0	-	-
	11-20	51.6	-	7	7	16.3	6.5	11.4	-	1.6	11	0	71	-	23	-	1.8	12	0	-	-
	21-END	13.0	-	4	4	15.3	10.0	12.6	-	7.4	22	0	82	-	28	-	5.8	30	0	-	-
	MONTH	73.9	57	15	14	15.6	8.2	11.9	-	1.6	11	0	226	-	74	-	1.1	10	0	-	-
Dunsany (Grange) Co. Meath	1-10	4.6	-	4	2	15.7	8.2	11.9	-	4.0	3	0	75	-	25	-	-1.3	3	1	-	-
	11-20	24.0	-	8	6	16.8	8.5	12.6	-	4.5	14	0	82	-	31	-	-1.1	14	1	-	-
	21-END	35.9	-	3	2	15.3	9.8	12.5	-	3.9	29	0	82	-	30	-	-0.6	23	1	-	-
	MONTH	64.5	60	15	10	15.9	8.8	12.4	-	3.9	29	0	239	-	86	-	-1.3	3	3	-	-
Clones Co. Monaghan	1-10	9.3	-	4	3	15.8	8.5	12.1	-	4.5	9	0	77	-	26	-	-1.0	9	1	13.3	-
	11-20	32.3	-	7	6	17.0	8.3	12.6	-	5.0	11	0	82	-	32	-	0.1	11	0	13.1	-
	21-END	12.3	-	4	2	15.4	9.0	12.2	-	4.7	29	0	78	-	26	-	0.1	29	0	12.9	-
	MONTH	53.9	63	15	11	16.0	8.6	12.3	+0.0	4.5	9	0	238	94	84	88	-1.0	9	1	13.1	-0.2
Birr Co. Offaly	1-10	3.3	-	4	1	16.6	8.5	12.6	-	5.6	3	0	82	-	30	-	0.6	3	0	14.4	-
	11-20	45.3	-	7	5	17.3	8.9	13.1	-	4.0	11	0	87	-	36	-	1.5	11	0	13.8	-
	21-END	13.6	-	4	2	15.5	9.7	12.6	-	3.1	29	0	82	-	30	-	-0.8	29	1	13.7	-
	MONTH	62.2	79	15	8	16.5	9.0	12.8	-0.2	3.1	29	0	251	93	96	88	-0.8	29	1	14.0	-0.0

TABLE 1 (CONTINUED)

SEPTEMBER 1989

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)												BRIGHT SUNSHINE		WIND	
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR				GROUND				SOIL (10cm)				TOTAL NO. OF HOURS	% OF AVERAGE	MEAN SPEED (ms⁻¹)	DAYS WITH GALE GUSTS
						MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFFERENCE FROM AVERAGE	LOWEST MIN.	DATE	DEGREES ABOVE 4.4°C	DEGREES ABOVE 10.0°C	MEAN DAILY	DAYS WITH GROUND FROST	DEGREES ABOVE 10.0°C	MEAN DAILY				
Dundrum (Knockavilla) Co. Tipperary	1-10	0.7	-	1	0	17.2	8.0	12.6	-	3.8	3	0	82	-	31	-	-1.0	3	1	-	-
	11-20	29.2	-	7	5	17.4	8.4	12.9	-	4.4	17	0	85	-	33	-	1.1	14	0	-	-
	21-END	17.9	-	5	2	16.1	10.1	13.1	-	3.6	30	0	87	-	36	-	0.5	30	0	-	-
	MONTH	47.8	-	13	7	16.9	8.8	12.9	-	3.6	30	0	254	-	100	-	-1.0	3	1	-	-
Dungarvan (Carriglea) Co. Waterford	1-10	0.0	-	0	0	19.3	7.3	13.3	-	0.2	2	0	90	-	41	-	-4.2	4	4	-	-
	11-20	42.2	-	6	6	18.2	9.7	14.0	-	3.9	14	0	96	-	43	-	-3.5	14	2	-	-
	21-END	7.0	-	2	1	18.0	10.2	14.1	-	5.0	30	0	97	-	45	-	-3.1	30	3	-	-
	MONTH	49.2	48	8	7	18.5	9.1	13.8	-	0.2	2	0	283	-	129	-	-4.2	4	9	-	114.3
Mullingar Co. Westmeath	1-10	3.2	-	3	2	16.0	8.1	12.1	-	4.6	3	0	77	-	26	-	2.3	3	0	14.0	-
	11-20	40.8	-	7	7	16.8	7.8	12.3	-	2.8	14	0	79	-	30	-	-0.4	14	1	13.1	-
	21-END	9.6	-	3	2	15.4	9.3	12.4	-	3.0	29	0	80	-	28	-	1.1	29	0	13.2	-
	MONTH	53.6	60	13	11	16.0	8.4	12.2	-0.2	2.8	14	0	236	91	84	82	-0.4	14	1	13.5	-0.1
J.F.K. Park Co. Wexford	1-10	0.0	-	0	0	18.1	8.8	13.5	-	5.7	3	0	91	-	38	-	-3.2	3	5	-	-
	11-20	41.6	-	6	3	17.5	9.9	13.7	-	5.0	14	0	93	-	39	-	1.9	17	0	-	-
	21-END	43.7	-	2	2	16.6	11.1	13.9	-	7.8	23	0	95	-	40	-	4.5	30	0	-	-
	MONTH	65.3	68	8	5	17.4	9.9	13.7	-	5.0	14	0	278	-	117	-	-3.2	3	5	-	-
Clonroche Co. Wexford	1-10	0.0	-	0	0	17.7	9.2	13.5	-	5.1	3	0	91	-	38	-	-2.1	3	2	-	-
	11-20	57.0	-	8	7	17.0	9.4	13.2	-	5.4	14	0	88	-	35	-	-3.5	14	3	-	-
	21-END	14.3	-	2	2	16.7	9.9	13.3	-	5.7	29	0	89	-	36	-	-1.5	29	3	-	-
	MONTH	71.3	65	10	9	17.1	9.5	13.3	-	5.1	3	0	267	-	109	-	-3.5	14	8	-	-
Johnstown Castle Co. wexford	1-10	0.0	-	0	0	17.4	10.3	13.9	-	6.2	3	0	95	-	40	-	-1.2	3	1	-	-
	11-20	28.4	-	8	4	17.1	10.5	13.8	-	7.3	14	0	94	-	40	-	-0.8	14	1	-	-
	21-END	6.6	-	2	2	16.2	10.9	13.5	-	7.0	23	0	91	-	37	-	0.2	23	0	-	-
	MONTH	35.0	38	10	6	16.9	10.6	13.7	-	6.2	3	0	280	-	117	-	-1.2	3	2	-	-
Rosslare Co. Wexford	1-10	0.0	-	0	0	16.9	11.1	14.0	-	8.7	1	0	96	-	41	-	3.0	3	0	16.2	-
	11-20	19.8	-	7	6	17.1	12.0	14.6	-	8.1	14	0	102	-	46	-	5.9	14	0	15.4	-
	21-END	7.8	-	2	2	16.0	12.0	14.0	-	8.6	23	0	96	-	41	-	6.4	23	0	14.8	-
	MONTH	27.6	35	9	8	16.7	11.7	14.2	+0.5	8.1	14	0	294	100	127	105	3.0	3	0	15.5	+0.6

TABLE 2 GLOBAL RADIATION

STATION	PERIOD	AMOUNT MJ/m ²
Malin Head Co. Donegal	1-10	119.50
	11-20	96.53
	21-end	63.63
	Month	279.66
Dublin Airport Co. Dublin	1-10	122.95
	11-20	87.57
	21-end	68.32
	Month	278.84
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	136.28
	11-20	102.92
	21-end	100.14
	Month	339.34
Kilkenny Co. Kilkenny	1-10	129.74
	11-20	89.14
	21-end	81.24
	Month	300.12
Belmullet Co. Mayo	1-10	106.97
	11-20	92.79
	21-end	66.10
	Month	265.86
Clones Co. Monaghan	1-10	99.59
	11-20	99.26
	21-end	61.73
	Month	260.58
Birr Co. Offaly	1-10	110.40
	11-20	92.05
	21-end	68.41
	Month	270.86

Notes on the tables in January issue

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

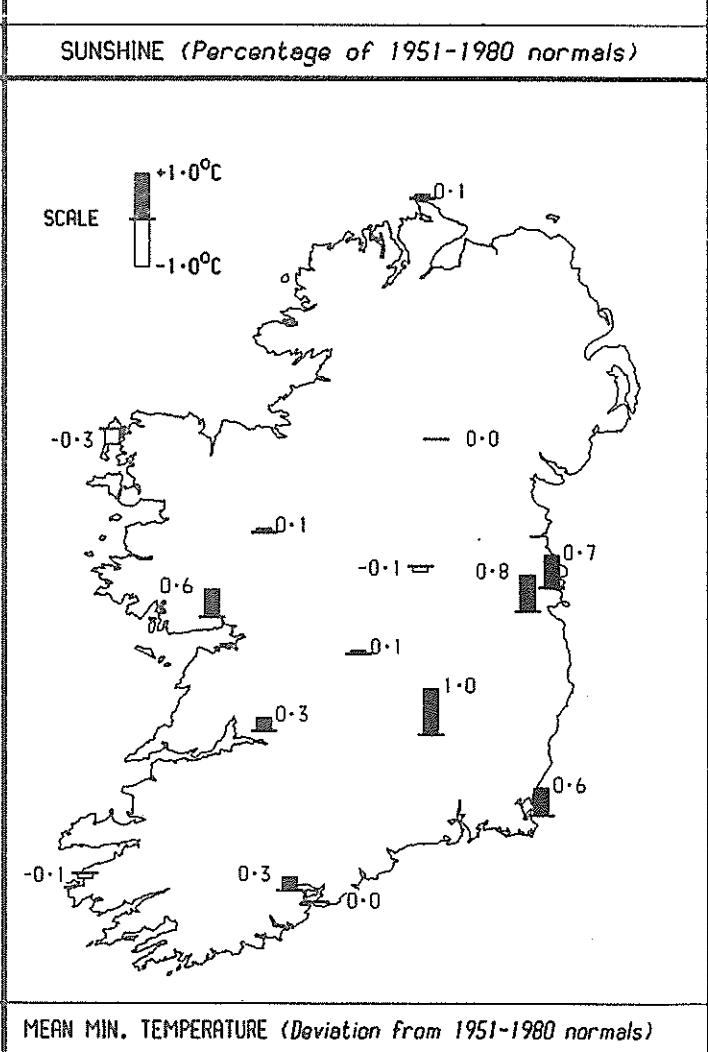
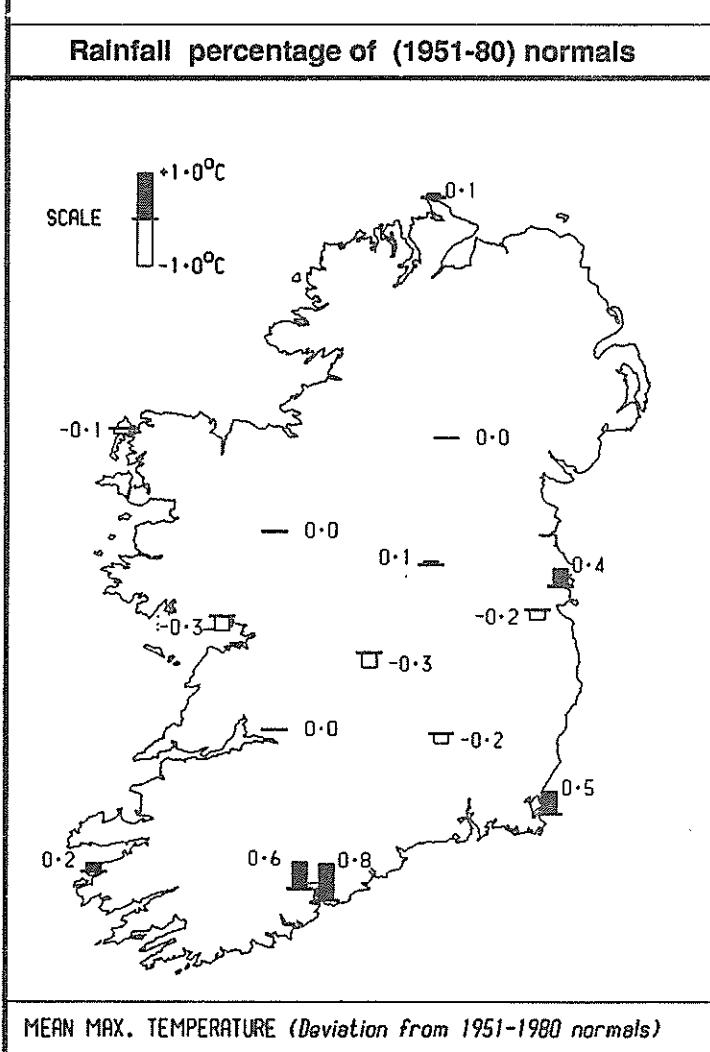
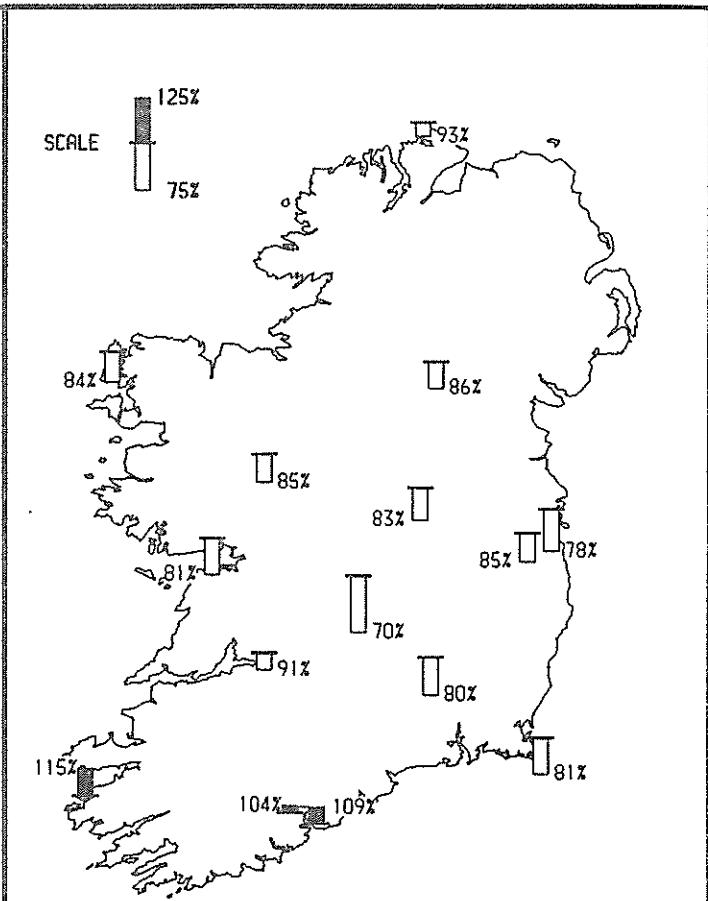
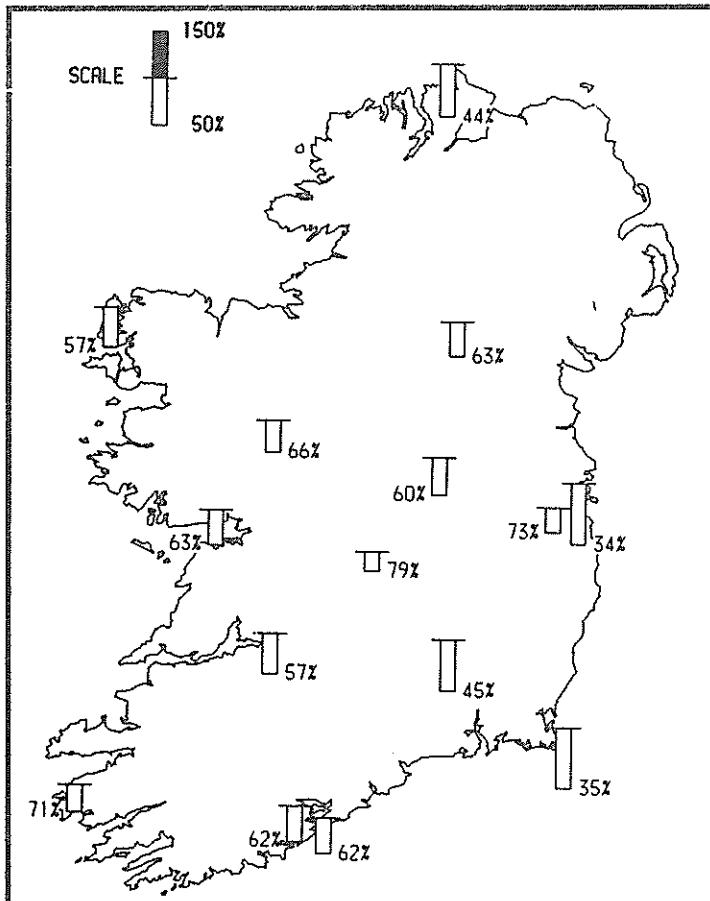
STATION	PERIOD	P.E.(mm) SOIL MOISTURE (mm)			
		Amount	Deficit	Accumulated Deficit	Surplus
Carlow (Oak Park) Co. Carlow	1-10	18.2	18	40	--
	11-20	30.5	--	17	23
	21-end	20.0	--	0	33
	Month	--	--	--	--
Kinsealy Co. Dublin	1-10	23.7	18	67	--
	11-20	22.4	2	69	--
	21-end	14.1	--	61	8
	Month	--	--	--	--
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	10.9	8	8	--
	11-20	18.5	--	0	56
	21-end	3.4	--	0	4
	Month	--	--	--	--
Ballinamore Co. Leitrim	1-10	13.2	5	15	--
	11-20	32.1	--	0	28
	21-end	(-0.4)	--	0	12
	Month	--	--	--	--
Glenamoy Co. Mayo	1-10	6.4	--	0	3
	11-20	39.9	--	0	12
	21-end	7.7	--	0	5
	Month	--	--	--	--
Johnstown Castle Co. Wexford	1-10	23.6	16	73	--
	11-20	20.6	--	55	18
	21-end	8.8	--	54	1
	Month	--	--	--	--

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	15.7	14.1	11.9	.58	96.8	94.8
	11-20	14.8	13.1	10.7	.44	123.1	137.6
	21-end	14.5	13.4	11.5	.42	64.5	72.2
Mineral	1-10	16.7	13.9	11.6	.01	315.2	197.6
	11-20	15.9	13.2	10.6	.20	448.1	361.5
	21-end	15.3	13.2	11.5	.25	108.7	88.7

September 1989

Differences from average



P R E C I P I T A T I O N V A L U E S F O R
S e p t e m b e r 1 9 8 9

MARKREE (CO. SLIGO)					LETTERKENNY (CO. DONEGAL)				
PERIOD	AMOUNT	% OF AVERAGE	RAIN DAYS NO.	WET DAYS NO.	AMOUNT	% OF AVERAGE	RAIN DAYS NO.	WET DAYS NO.	
1 - 10	10.9		4	3	6.8		5	2	
11 - 20	34.2		7	6	36.7		8	5	
21 - END	13.9		4	4	10.5		4	2	
MONTH	59.0	54	15	13	54.0	52	17	9	

Outlook for October 18th - 27th

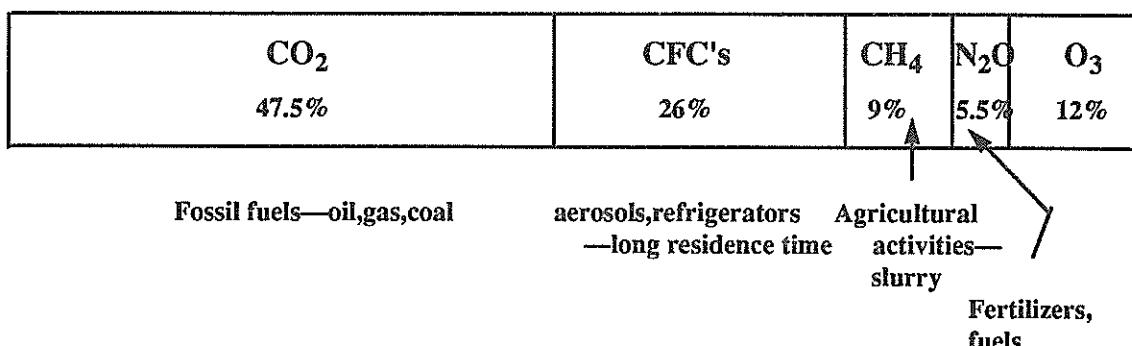
Deep low pressure will dominate in the east Atlantic for next five days giving a very distributed spell of weather . Strong to gale force southwest winds will become extremely high at times to 23rd. Remaining mild but wet or squally showers particularly over 20th / 21st.

CLIMATE CHANGE

T.Keane, Meteorological Service

- o Certain gases such as carbon dioxide (CO_2) are transparent to incoming shortwave radiation from the sun but absorb infrared radiation emitted by the earth's surface.
- o The primary source for CO_2 emission into the atmosphere is the combustion of fossil fuels - oil, gas and coal and changing land use such as deforestation and intensive agriculture. An increase of CO_2 could lead to a decrease in the amount of heat escaping from the earth, and thus to a global warming. This is known as the greenhouse effect.
- o Other greenhouse gases are chlorofluorocarbons (CFC's), methane (CH_4), Nitrous Oxide (N_2O) and Ozone (O_3). The effect of these is comparable to that due to Carbon dioxide as shown as follows:

Contribution to Climate Change from changes in concentration in Atmospheric Gases



Likely Global Consequences within 50 years

- o Almost unanimous agreement that a substantial warming will occur.
- o There is uncertainty as to the amount of warming; estimates range from 1.5°C to 4.5°C .
- o Climate models predict largest warming at high latitudes.

Positive Aspects

- o Plant Growth: increased potential for yield because of increased CO_2 . A doubling of CO_2 could lead to 10% increase in wheat yields.
- o Increased forest productivity from increased biomass turnover rates.

Negative Aspects

- o Small changes in average climate can result in relatively large shifts in the frequency of climatic extremes such as drought, frost, rain, storms.
- o Rise in sea levels of between 25 cm and 165 cm due to thermal expansion of ocean water and melting of glaciers and sea ice.
- o Warmer than average temperature will be detrimental to wheat and maize yields in the core production regions of the world in continental North America and Europe.

(continued in the next Bulletin)