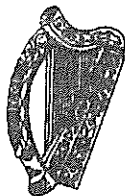


# METEOROLOGICAL SERVICE



OCTOBER 1987

## AGROMETEOROLOGICAL BULLETIN

### The Weather of October

Blocking high pressure over Europe, lows over Biscay and deepening troughs from the west or southwest were the dominant features of the month. A high over Scandinavia and a low centred in Biscay effected a southeasterly continental airflow over Ireland from 1st to 4th. With the decline of the high an active frontal trough moved up from the south on the 5th and a series of troughs from the west ( with strong winds on 9th/10th ) gave a mixture of frontal rainbelts and showery conditions. In the meantime a threatening wave depression was approaching Biscay where it deepened rapidly and moved up over England on 16th causing widespread chaos and damage there and in the event missing Ireland. However, a succeeding depression tracking up by the west of Ireland gave widespread rain and strong southerly winds on 17th/18th.

The blocking European high pressure again came into prominence on 19th/20th as a wave developed in a slack trough over Ireland; widespread rain was particularly heavy over eastern areas on 21st and in northern areas early on the 22nd. High pressure again extended westwards but yielded to troughs from the northwest on 25th, these troughs being again slow to clear eastern areas on 26th/27th. Subsequently an active depression remained to the southwest of Ireland and to the west of Biscay; an easterly airflow was strongest in the southwest and west regions and ensuing rainbelts were also more active in these areas. By the 31st the low had retreated as high pressure advanced from the west.

#### Precipitation:

Monthly precipitation was above normal everywhere and well above normal in the north, east and southeast. Amounts varied from 190% of normal at Kinsealy to 100% at Kilkenny. The wettest day generally was the 21st but for most of the country most days were wet days ( around 1.0mm of precipitation ) to 21st, the 25th/26th and 30th being also very wet. Soil conditions for traffic had deteriorated considerably.

#### Temperature:

Mean air temperature was well below normal , varying from 2.2°C below at Belmullet to 1.3°C below in Dublin Airport and Rosslare. While the maximum values were well down, the minimum values were particularly low, i.e up to 4.5°C below normal at Moore Park. Soil temperatures varied from 2.0°C below normal at Shannon Airport to 1.2°C below at Cork Airport . Dates of days with airfrost were 10th/11th, 23rd/24th and 28th.

#### Sunshine and Radiation:

Sunshine hours were above normal and well above in the north varying from 158% at Malin head to 96% at Dublin Airport. Global radiation varied from 96% of normal at Dublin Airport and Birr to 87% at Kilkenny.

#### Wind:

Gales occurred on 7th/8th and strong winds with gale gusts also occurred on 6th, 9th/10th, 16th 18th, 25th and in coastal areas on a number of other days.

#### Summary:

Wet and cold but sunny.

TABLE 1

OCTOBER

1987

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 <sup>-1</sup> )	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					
Carlow (Oak Park) Co. Carlow	1-10	23.5	-	7	7	14.0	5.7	9.8	-	0.0	5	0	57	-	16	-	-3.5	10	2	-	-	35.5	-	N/A	-	-
	11-20	36.8	-	8	5	12.4	3.6	8.0	-	-0.7	11	1	39	-	7	-	-4.8	11	1	-	-	42.9	-	N/A	-	-
	21-END	22.3	-	6	4	11.0	4.0	7.5	-	-1.2	24	3	39	-	4	-	-4.4	23	4	-	-	29.5	-	N/A	-	-
	MONTH	82.6	107	21	16	12.4	4.4	8.4	-	-1.2	24	4	135	-	27	-	-4.8	11	7	-	-	107.9	-	N/A	-	N/A
Shannon Airport Co. Clare	1-10	36.8	-	8	8	14.5	8.2	11.3	-	2.9	10	0	70	-	22	-	-2.7	10	1	11.2	-	29.5	-	4.6	3	-
	11-20	51.2	-	10	9	11.9	5.5	8.7	-	2.7	11	0	44	-	5	-	-2.7	11	1	8.6	-	25.6	-	3.6	2	-
	21-END	16.2	-	6	4	11.9	5.7	8.8	-	-0.3	24	1	51	-	7	-	-3.9	24	6	8.5	-	34.0	-	3.7	2	-
	MONTH	104.2	124	24	21	12.7	6.5	9.6	-1.6	-0.3	24	1	164	74	34	58	-3.9	24	8	9.4	-2.0	89.1	105	4.0	7	24
Cork Airport Co. Cork	1-10	36.4	-	8	7	13.4	7.6	10.5	-	1.2	10	0	62	-	18	-	-0.5	10	1	11.6	-	33.5	-	6.4	4	-
	11-20	63.0	-	9	7	11.3	4.8	8.0	-	3.3	11	0	37	-	4	-	-1.0	14	3	8.8	-	32.5	-	5.3	3	-
	21-END	48.1	-	5	5	11.0	4.9	8.0	-	1.5	23	0	42	-	3	-	-4.8	28	5	8.3	-	46.1	-	5.5	4	-
	MONTH	147.5	123	22	19	11.9	5.8	8.8	-1.7	1.2	10	0	141	71	25	48	-4.8	28	9	9.5	-1.2	112.1	121	5.7	11	22
Fermoy (Coolnakilla) Co. Cork	1-10	53.4	-	9	7	12.5	6.5	9.5	-	0.5	8	0	53	-	12	-	-2.0	10	1	-	-	31.7	-	4.4	-	-
	11-20	52.9	-	9	6	10.8	3.9	7.3	-	1.7	11	0	31	-	3	-	-2.2	11	6	-	-	31.5	-	3.4	-	-
	21-END	32.5	-	6	5	10.3	4.2	7.3	-	1.3	24	0	34	-	1	-	-2.0	24	5	-	-	40.8	-	4.8	-	-
	MONTH	138.8	-	24	18	11.2	4.9	8.0	-	0.5	8	0	118	-	16	-	-2.2	11	12	-	-	104.0	-	4.2	-	10
Fermoy (Moore Park) Co. Cork	1-10	42.4	-	7	7	13.8	7.1	10.5	-	-1.0	10	1	62	-	17	-	-6.6	10	1	-	-	35.6	-	N/A	-	-
	11-20	43.8	-	10	7	11.9	2.6	7.2	-	0.0	11	0	34	-	5	-	-4.5	11	6	-	-	35.5	-	N/A	-	-
	21-END	19.1	-	6	5	11.5	2.4	7.0	-	-4.5	24	5	37	-	5	-	-8.5	24	7	-	-	37.6	-	N/A	-	-
	MONTH	105.3	114	23	19	12.4	4.0	8.2	-	-4.5	24	6	133	-	28	-	-8.5	24	14	-	-	108.7	-	N/A	-	N/A
Roches Point Co. Cork	1-10	34.8	-	7	6	14.1	9.3	11.7	-	3.5	10	0	73	-	24	-	0.6	10	0	12.2	-	37.1	-	7.5	5	-
	11-20	52.5	-	8	7	12.3	6.2	9.3	-	4.6	11	0	49	-	7	-	-0.4	15	2	9.4	-	36.6	-	6.3	6	-
	21-END	20.5	-	6	3	11.8	6.5	9.2	-	2.6	24	0	53	-	8	-	-1.4	28	4	9.2	-	45.9	-	6.2	6	-
	MONTH	107.8	121	21	16	12.7	7.3	10.0	-1.5	2.6	24	0	175	76	39	57	-1.4	28	6	10.2	-1.5	119.6	127	6.6	17	28
Glencolumbkille Co. Donegal	1-10	56.4	-	7	6	13.1	6.8	10.0	-	4.0	9	0	56	-	12	-	-1.5	10	1	-	-	N/A	-	4.5	-	-
	11-20	54.7	-	9	9	11.3	5.5	8.4	-	2.4	11	0	41	-	4	-	1.4	16	0	-	-	N/A	-	3.5	-	-
	21-END	86.4	-	10	6	10.6	4.9	7.8	-	2.3	24	0	38	-	2	-	-1.5	23	4	-	-	N/A	-	3.9	-	-
	MONTH	197.5	-	26	21	11.7	5.7	8.7	-	2.3	24	0	135	-	18	-	-1.5	10	5	-	-	N/A	-	4.0	-	N/A

NOTES ON THE TABLES IN JANUARY ISSUE



TABLE 1 (CONTINUED)

OCTOBER 1987

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 <sup>-1</sup> )	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
Cahirciveen (Valentia Obsy.) Co. Kerry	1-10	59.7	-	8	7	14.5	8.8	11.6	-	4.1	9	0	72	-	24	-	1.0	10	0	12.4	-	29.3	-	5.9	7	-
	11-20	65.9	-	9	9	12.3	5.2	8.7	-	0.1	15	0	45	-	6	-	-2.6	15	2	9.3	-	22.9	-	5.0	4	-
	21-END	75.8	-	9	8	12.5	5.2	8.9	-	-0.6	24	1	52	-	10	-	-2.9	24	3	9.1	-	40.1	-	5.2	4	-
	MONTH	201.4	142	26	24	13.1	6.4	9.7	-2.1	-0.6	24	1	169	72	39	51	-2.9	24	5	10.2	-1.6	92.3	113	5.3	15	26
Ardfert (Liscahane) Co. Kerry	1-10	48.9	-	7	6	14.3	7.7	11.0	-	1.4	10	0	67	-	20	-	-1.6	10	1	-	-	30.2	-	-	-	-
	11-20	52.7	-	9	8	12.1	4.9	8.5	-	0.6	15	0	43	-	6	-	-4.0	15	6	-	-	25.9	-	-	-	-
	21-END	19.1	-	9	6	12.1	5.2	8.7	-	-0.2	24	1	49	-	8	-	-4.5	24	6	-	-	31.4	-	-	-	-
	MONTH	120.7	-	25	20	12.8	5.9	9.4	-	-0.2	24	1	158	-	33	-	-4.5	24	13	-	-	87.5	-	-	-	-
Lullymore Co. Kildare	1-10	25.7	-	8	5	12.8	5.7	9.3	-	0.5	10	0	50	-	12	-	-5.5	10	2	-	-	34.4	-	4.1	-	-
	11-20	54.8	-	8	4	12.1	3.1	7.6	-	-2.1	11	1	36	-	6	-	-9.1	11	5	-	-	40.5	-	3.5	-	-
	21-END	23.2	-	4	3	10.5	2.8	6.7	-	-3.0	24	3	33	-	3	-	-8.3	24	6	-	-	30.8	-	3.2	-	-
	MONTH	103.7	126	20	12	11.8	3.8	7.8	-	-3.0	24	4	119	-	21	-	-9.1	11	13	-	-	105.7	-	3.6	-	12
Kilkenny Co. Kilkenny	1-10	24.3	-	7	6	14.3	6.9	10.6	-	-1.1	10	1	64	-	21	-	-6.6	10	1	11.2	-	33.1	-	3.4	2	-
	11-20	40.1	-	8	7	12.6	2.9	7.8	-	-1.0	11	1	38	-	7	-	-5.7	11	6	8.5	-	37.0	-	2.5	1	-
	21-END	18.4	-	6	4	11.6	3.3	7.5	-	-2.5	24	3	41	-	5	-	-8.1	24	5	7.8	-	35.5	-	2.5	1	-
	MONTH	82.8	100	21	17	12.8	4.4	8.6	-1.8	-2.5	24	5	143	72	33	51	-8.1	24	12	9.1	-1.5	105.6	123	2.8	4	17
Mooncoin (Silverspring) Co. Kilkenny	1-10	42.4	-	9	5	14.4	7.6	11.0	-	0.7	10	0	67	-	21	-	-3.8	10	1	-	-	36.5	-	-	-	-
	11-20	56.7	-	10	7	12.6	2.7	7.6	-	-0.1	11	1	37	-	7	-	-4.0	14	7	-	-	37.3	-	-	-	-
	21-END	28.6	-	6	4	11.7	3.2	7.5	-	-2.5	28	4	42	-	6	-	-6.4	28	6	-	-	37.9	-	-	-	-
	MONTH	127.7	132	25	16	12.9	4.5	8.7	-	-2.5	28	5	146	-	35	-	-6.4	28	14	-	-	111.7	-	-	-	-
Ballinamore Co. Leitrim	1-10	32.5	-	7	6	12.8	5.9	9.4	-	1.9	10	0	51	-	11	-	-1.3	10	3	-	-	32.8	-	2.4	-	-
	11-20	57.7	-	9	7	11.6	2.2	6.9	-	-3.1	11	2	31	-	4	-	-6.2	11	5	-	-	32.7	-	2.1	-	-
	21-END	40.6	-	5	3	10.5	2.2	6.4	-	-3.0	24	5	30	-	2	-	-6.0	28	4	-	-	27.0	-	2.1	-	-
	MONTH	130.8	119	21	16	11.6	3.4	7.5	-	-3.1	11	7	113	-	18	-	-6.2	11	12	-	-	92.5	-	2.2	-	9
Ardee (Boharnamoe) Co. Louth	1-10	19.8	-	7	5	14.3	5.1	9.7	-	3.1	10	0	54	-	13	-	N/A		N/A	-	-	-	-	-	-	-
	11-20	16.8	-	4	3	14.1	3.2	8.7	-	-2.2	11	1	47	-	13	-	N/A		N/A	-	-	-	-	-	-	-
	21-END	59.9	-	5	3	11.9	5.1	8.5	-	-2.7	23	2	49	-	7	-	-5.0	23	2	-	-	-	-	-	-	-
	MONTH	96.5	118	16	11	13.4	4.5	9.0	-	-2.7	23	3	149	-	33	-	N/A		N/A	-	-	-	-	-	-	-

NOTES ON THE TABLES IN JANUARY ISSUE





TABLE 2 GLOBAL RADIATION

STATION	PERIOD	AMOUNT MJ/m <sup>2</sup>
Malin Head Co. Donegal	1-10	75.01
	11-20	65.51
	21-end	50.22
	Month	190.74
Dublin Airport Co. Dublin	1-10	63.85
	11-20	67.29
	21-end	49.27
	Month	180.41
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	76.31
	11-20	55.46
	21-end	64.25
	Month	196.02
Kilkenny Co. Kilkenny	1-10	78.52
	11-20	74.46
	21-end	62.87
	Month	215.85
Belmullet Co. Mayo	1-10	69.62
	11-20	61.82
	21-end	51.16
	Month	182.60
Clones Co. Monaghan	1-10	71.66
	11-20	67.97
	21-end	48.89
	Month	189.52
Birr Co. Offaly	1-10	75.14
	11-20	64.34
	21-end	52.52
	Month	185.26

Notes on the tables in January issue

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

STATION	PERIOD	SOIL MOISTURE (mm)			
		P.E.(mm) Amount	Deficit	Accumulated Deficit	Surplus
Carlow (Oak Park) Co. Carlow	1-10	8.9	-	0	15
	11-20	19.5	-	0	18
	21-end	-2.5	-	0	25
	Month	25.9	-	-	-
Kinsealy Co. Dublin	1-10	7.5	-	0	15
	11-20	27.8	-	0	36
	21-end	1.7	-	0	35
	Month	37.0	-	-	-
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	1.9	-	0	78
	11-20	-6.2	-	0	73
	21-end	5.6	-	0	76
	Month	1.3	-	0	-
Ballinamore Co. Leitrim	1-10	1.8	-	0	31
	11-20	Overflow	-	Overflow	-
	21-end	Overflow	-	Overflow	-
	Month	N/A	-	-	-
Glenamoy Co. Mayo	1-10	6.9	-	0	35
	11-20	10.5	-	0	28
	21-end	5.3	-	0	64
	Month	22.7	-	0	-
Johnstown Castle Co. Wexford	1-10	11.4	-	0	50
	11-20	20.9	-	0	59
	21-end	7.8	-	0	36
	Month	40.1	-	-	-

- 7 -

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	11.6	10.27	8.8	.86
	11-20	9.0	7.9	5.9	.85	56.2	58.0
	21-end	9.0	6.8	5.7	.90	65.6	66.5
Mineral	1-10	12.3	10.1	8.3	.46	73.1	81.3
	11-20	10.2	8.1	5.3	.48	47.6	50.7
	21-end	9.3	6.9	5.3	.46	63.9	67.5

# special topic

## THE POTATO BLIGHT SEASON 1987

Weather conditions conducive to the spread of potato blight are monitored by the Meteorological Service using a computer model. Accumulations of effective blight hours (EBH) ( see special topic page, Agmet Bulls April/May, 1984 and July 1987) are derived from hourly meteorological reports. Accumulations in 1987

( May to September ) were below average in the midlands and mid-west regions. In the west, northwest, southwest and southeast accumulations varied from above to well above average.

In the figure is depicted the season as it evolved at four representative stations. **Claremorris:** After an early accumulation in EBH totals in May the remainder of the season reflected average development although an accelerated accumulation occurred between 8th and 18th of August followed by a marked slow down in September.

**Malin Head:** The spell of most note took place in the last decade of July while other less intense spells occurred in early August, subsequently very little ' blight weather ' developed at this northern station.

**Roche's Point:** The first major surge of blight conditions occurred in the period 19th to 29th of June; July and early August were relatively free from major spells. Further major spells occurred in the period 8th to 18th of August and the final spell occurred after September 17th.

**Rosslare:** the season again reflected reasonably well at Roche's Point although spells were not as intense.

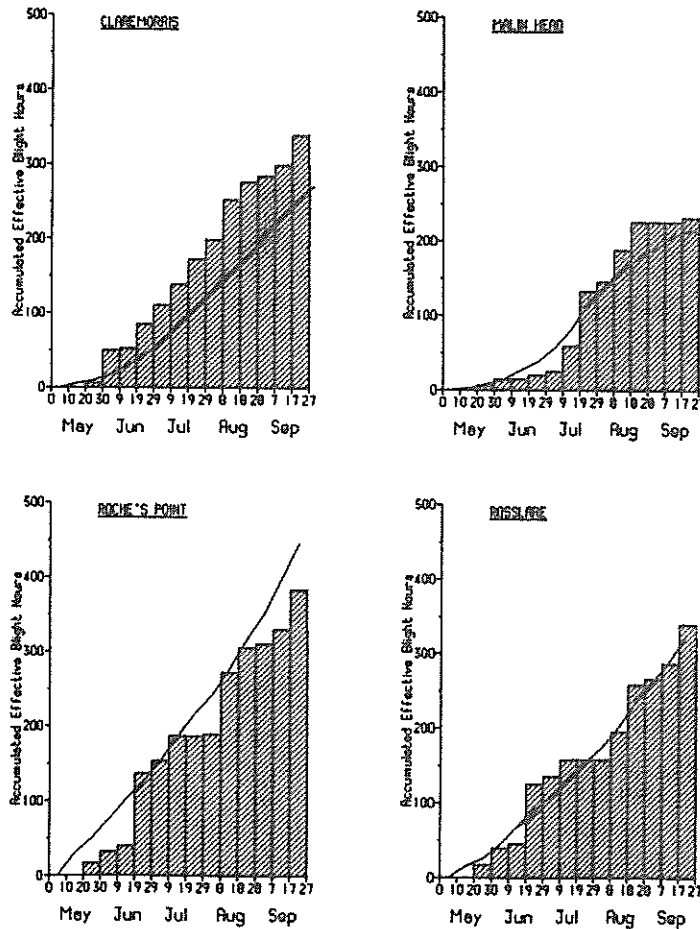


Figure 3: Accumulated total effective blight hours in 10 day periods May 1 - September 27, 1987 and the averages (1951-1976) for the same period (—).