



AGROMETEOROLOGICAL BULLETIN

The Weather of February 1990

Summary

*Vigorous Atlantic depressions and strong southwesterly winds prevailed.
The weather was mostly very mild and exceptionally wet through the month.
Widespread flooding occurred after rain of 6th and at other times.*

Meteorological Situation

A strong southwest airflow under the influence of Atlantic depressions and a continental high affected the country until 5th—the first depression centre from mid-Atlantic passed by the northwest of Ireland on 1st/2nd, the second over southern Britain on 3rd while the third centre moved on a Labrador-Icelandic path. As the continental high declined the next series of frontal systems moved across the Atlantic on a more southerly track first bringing active waves over the country on 6th and 7th and a depression centre (with a central pressure of 960 hPa) by the northwest of Ireland on 11th; later centres moved on tracks which kept the mild conditions further to the south so that colder air but with lighter winds affected Ireland from 14th to 16th.

Another Atlantic depression deepened vigorously to about 940 hPa and swept by Scotland and Iceland on 19th, developing a strong, moisture laden airflow over this country. The strong winds were also influenced by a recovering continental high. A series of waves followed maintaining a strong airflow and depositing considerable rainfall over the country.

The increasing influence of the continental high resulted in one of the few dry days of the month on 22th but as this high declined the depressions returned leading to a vigorous rain and wind storm on 26th and early 27th. Following this spell the Azores high recovered and a cold, wintry and strong northwesterly airflow developed over the country for the end of the month.

Precipitation

Amounts were exceptionally high, varying from 346% of normal at Galway to 156% at Rosslare. Rain generally exceeded 5 mm on 15-20 days and 10 mm on at least 8 occasions. Highest daily fall of 38.7 mm occurred at Mullingar on 6th. Wettest spells occurred during first week, 10th-14th, 17th-21st, and 23rd-end.

Sunshine and Radiation

Amounts were below normal in all areas, varying from 54% of normal at Valentia to 98% at Rosslare. Global radiation varied from 102% of normal at Dublin Airport to 85% of normal at Valentia.

Temperature

Mean air temperature was well above normal. It varied from 2.3°C above at Kilkenny to 1.0 °C above at Malin Head and Belmullet. Coldest spells occurred about mid-month and next coldest towards the end of the month. On the morning of 16th there was a minimum air temperature of -5.2°C and a grass minimum of -10.1°C at Ballinamore.

Wind

The month was exceptionally windy with frequent gales and some storm force winds. Hours with gale gusts were 409 hr at Belmullet and 203 hr at Birr. Gales were most widespread on 26th, 11th, 27th, 1st and 4th resp. There were gales on 22 days at Malin Head but on only 2 days at Mullingar. Maximum gust of 42m/s occurred at Clones on 26th.

TABLE 1

FEBRUARY 1990

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND		P.E. (PENMAN) (mm)			
		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	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	63.6	-	10	9	10.3	3.2	6.7	-	0.0	3	0	28	-	2	-	-4.5	3	3	-	-	24.2	-	7.2	-	-	
	11-20	47.7	-	9	9	8.8	2.1	5.4	-	-2.4	16	2	19	-	1	-	-6.3	16	6	-	-	16.0	-	6.5	-	-	
	21-END	36.5	-	6	6	10.7	4.6	7.6	-	0.7	27	0	28	-	4	-	-0.5	27	1	-	-	26.6	-	9.6	-	-	
	MONTH	147.8	255	25	24	9.9	3.2	6.5	-	-2.4	16	2	76	-	7	-	-6.3	16	10	-	-	66.8	-	7.6	-	17	
Shannon Airport Co. Clare	1-10	105.4	-	9	9	9.7	3.8	6.8	-	0.6	6	0	27	-	2	-	-1.0	7	3	5.7	-	20.4	-	6.9	8	-	
	11-20	55.3	-	9	9	9.8	4.0	6.9	-	1.9	12	0	27	-	2	-	-1.2	12	2	5.7	-	15.0	-	6.5	7	-	
	21-END	44.3	-	8	7	11.3	5.3	8.3	-	0.9	28	0	33	-	5	-	0.7	27	0	7.2	-	17.9	-	9.3	7	-	
	MONTH	205.0	325	26	25	10.2	4.3	7.3	+2.0	0.6	6	0	87	121	9	-	-1.2	12	5	6.1	+1.1	53.3	73	7.4	22	26	
Cork Airport Co. Cork	1-10	94.7	-	10	10	9.8	3.6	6.7	-	0.3	10	0	27	-	1	-	-2.4	3	5	6.1	-	22.0	-	10.2	9	-	
	11-20	80.0	-	10	10	9.1	3.3	6.2	-	0.1	11	0	24	-	1	-	-0.9	15	3	6.1	-	16.3	-	9.1	8	-	
	21-END	38.9	-	8	7	10.1	4.8	7.5	-	0.9	28	0	27	-	1	-	-0.3	27	1	7.4	-	24.5	-	11.9	8	-	
	MONTH	213.6	202	28	27	9.6	3.9	6.8	+1.9	0.1	11	0	77	138	4	-	-2.4	3	9	6.5	+1.8	62.8	90	10.3	25	18	
Fermoy (Coolnakilla) Co. Cork	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	-	-	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	-	-	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	-	-	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	-	N/A	-	N/A	-	N/A
Fermoy (Moore Park) Co. Cork	1-10	97.0	-	9	8	10.5	3.1	6.8	-	-1.5	4	2	29	-	3	-	-5.5	4	5	-	-	24.2	-	6.7	-	-	
	11-20	68.7	-	9	9	9.6	3.6	6.6	-	1.4	15	0	26	-	2	-	-3.5	15	3	-	-	14.2	-	5.2	-	-	
	21-END	40.5	-	8	8	11.3	5.0	8.1	-	2.4	28	0	32	-	4	-	0.0	25	0	-	-	25.9	-	6.5	-	-	
	MONTH	206.2	261	26	25	10.4	3.8	7.1	-	-1.5	4	2	87	-	8	-	-5.5	4	8	-	-	64.3	-	6.1	-	18	
Roches Point Co. Cork	1-10	57.0	-	10	9	10.6	5.2	7.9	-	2.1	10	0	37	-	3	-	-1.5	3	3	7.2	-	23.3	-	10.6	9	-	
	11-20	68.7	-	10	10	9.7	4.5	7.1	-	1.5	11	0	29	-	1	-	-0.7	15	2	6.9	-	14.8	-	9.2	7	-	
	21-END	29.9	-	7	6	10.7	5.9	8.3	-	2.0	28	0	32	-	2	-	1.9	21	0	8.1	-	24.0	-	12.0	7	-	
	MONTH	155.6	195	27	25	10.3	5.1	7.7	+1.6	1.5	11	0	98	126	7	-	-1.5	3	5	7.4	+1.5	62.1	84	10.5	23	24	
Glencolumbkille Co. Donegal	1-10	96.1	-	10	10	9.0	4.0	6.5	-	1.9	2	0	24	-	2	-	-0.8	2	1	-	-	N/A	-	5.8	-	-	
	11-20	114.2	-	10	10	7.9	1.9	4.9	-	-0.2	16	1	13	-	0	-	-5.0	16	7	-	-	N/A	-	5.8	-	-	
	21-END	75.9	-	8	7	9.5	3.9	6.7	-	0.5	28	0	22	-	2	-	-1.0	28	3	-	-	N/A	-	7.7	-	-	
	MONTH	286.2	-	28	27	8.7	3.2	6.0	-	-0.2	16	1	59	-	5	-	-5.0	16	11	-	-	N/A	-	6.3	-	N/A	

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NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 1 (CONTINUED)

FEBRUARY 1990

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 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	123.9	-	10	9	8.6	3.4	6.0	-	0.1	2	0	21	-	2	-	-5.5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11-20	95.4	-	10	10	7.4	1.3	4.4	-	-3.1	16	2	12	-	0	-	-9.5	16	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	21-END	77.6	-	8	8	8.9	3.7	6.3	-	-2.1	28	1	20	-	1	-	-4.3	27	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	MONTH	296.9	275	28	27	8.2	2.7	5.5	-	-3.1	16	3	53	-	3	-	-9.5	16	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Malin Head Co. Donegal	1-10	65.2	-	9	9	8.7	3.8	6.3	-	1.1	2	0	22	-	1	-	0.1	2	0	5.5	-	11.0	-	13.3	10	-	-	-	-	-	-	-	-	
	11-20	60.3	-	9	9	8.1	2.7	5.4	-	-0.1	16	1	16	-	1	-	-2.1	16	2	4.3	-	20.0	-	11.9	10	-	-	-	-	-	-	-	-	
	21-END	74.8	-	8	8	9.4	4.0	6.7	-	1.0	27	0	21	-	2	-	0.2	27	0	5.9	-	13.1	-	13.8	8	-	-	-	-	-	-	-	-	
	MONTH	200.3	267	26	26	8.7	3.5	6.1	+1.0	-0.1	16	1	60	109	4	-	-2.1	16	2	5.2	+0.8	44.1	69	13.0	28	37	-	-	-	-	-	-	-	
Casement Aerodrome Co. Dublin	1-10	44.1	-	9	6	9.8	3.9	6.9	-	1.9	2	0	28	-	3	-	0.2	3	0	5.4	-	26.7	-	12.7	10	-	-	-	-	-	-	-	-	
	11-20	50.0	-	8	7	8.7	2.3	5.5	-	-3.8	16	1	21	-	2	-	-6.8	16	5	4.8	-	22.5	-	10.2	8	-	-	-	-	-	-	-	-	
	21-END	32.8	-	6	5	10.8	4.4	7.6	-	0.2	28	0	29	-	4	-	-0.1	27	1	6.4	-	21.1	-	13.3	8	-	-	-	-	-	-	-	-	
	MONTH	126.9	249	23	18	9.7	3.5	6.6	+2.2	-3.8	16	1	77	145	9	-	-6.8	16	6	5.5	-	70.3	97	12.0	26	34	-	-	-	-	-	-	-	
Dublin Airport Co. Dublin	1-10	38.7	-	7	5	10.4	4.5	7.5	-	2.3	3	0	33	-	4	-	-1.5	3	3	5.5	-	24.8	-	9.1	8	-	-	-	-	-	-	-	-	
	11-20	31.7	-	7	7	9.1	3.2	6.1	-	-0.6	16	1	24	-	2	-	-6.7	16	6	4.8	-	21.3	-	8.1	7	-	-	-	-	-	-	-	-	
	21-END	38.4	-	7	6	10.6	5.0	7.8	-	0.4	28	0	31	-	5	-	-0.6	27	1	6.5	-	22.6	-	10.4	7	-	-	-	-	-	-	-	-	
	MONTH	108.8	213	21	18	10.0	4.2	7.1	+2.3	-0.6	16	1	87	153	12	300	-	-6.7	16	10	5.5	+1.2	68.7	92	9.1	22	36	-	-	-	-	-	-	
Kinsealy Co. Dublin	1-10	41.9	-	10	6	11.0	4.5	7.7	-	2.0	3	0	36	-	4	-			10	-	-	25.9	-	6.5	-	-	-	-	-	-	-	-	-	
	11-20	30.2	-	8	8	9.6	2.3	6.0	-	-2.7	16	1	23	-	3	-			10	-	-	21.1	-	5.8	-	-	-	-	-	-	-	-	-	
	21-END	38.2	-	6	5	10.9	4.6	7.8	-	0.6	27	0	29	-	5	-	-5.6	27	7	-	-	24.1	-	7.5	-	-	-	-	-	-	-	-	-	
	MONTH	110.3	221	24	19	10.5	3.7	7.1	-	-2.7	16	1	89	-	13	-			27	-	-	71.1	-	6.5	-	-	-	-	-	-	-	-	-	-
Galway Co. Galway	1-10	87.1	-	9	9				-					-		-				-	-		-											
	11-20	75.5	-	9	9				-					-		-				-	-		-											
	21-END	80.1	-	7	7				-					-		-				-	-		-											
	MONTH	242.7	324	25	25				-					-		-				-	-		-											
Killarney (Muckross House) Co. Kerry	1-10	217.5	-	10	10	10.5	2.9	6.7	-	0.2	7	0	27	-	3	-	-2.8	3	3	-	-	12.6	-	-	-	-	-	-	-	-	-	-	-	
	11-20	108.6	-	9	9	10.4	3.2	6.8	-	-0.5	12	2	28	-	3	-	-1.6	15	3	-	-	8.9	-	-	-	-	-	-	-	-	-	-	-	
	21-END	68.2	-	8	7	12.0	5.5	8.7	-	2.0	28	0	36	-	5	-	0.2	21	0	-	-	11.4	-	-	-	-	-	-	-	-	-	-	-	
	MONTH	394.3	287	27	26	10.9	3.7	7.3	-	-0.5	12	2	92	-	11	-	-2.8	3	6	-	-	32.9	-	-	-	-	-	-	-	-	-	-	-	

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		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	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	84.0	-	10	8	10.4	5.1	7.7	-	2.5	6	0	35	-	3	-	0.5	3	0	6.8	-	13.8	-	9.4	9	-
	11-20	74.0	-	10	9	10.4	5.1	7.7	-	3.1	12	0	34	-	3	-	1.0	15	0	7.1	-	13.4	-	8.9	8	-
	21-END	43.6	-	8	6	11.4	6.6	9.0	-	3.0	27	0	38	-	5	-	1.5	21	0	8.2	-	10.9	-	10.7	8	-
	MONTH	201.6	171	28	23	10.7	5.5	8.1	+1.6	2.5	6	0	106	115	10	125	0.5	3	0	7.3	+1.2	38.1	54	9.6	25	29
Ardfert (Liscahane) Co. Kerry	1-10	132.3	-	10	9	9.6	3.9	6.8	-	1.7	7	0	27	-	3	-	-0.7	3	1	-	-	17.7	-	-	-	-
	11-20	71.3	-	9	9	10.1	4.0	7.0	-	2.1	12	0	29	-	2	-	0.5	16	0	-	-	20.7	-	-	-	-
	21-END	49.2	-	7	6	11.7	5.7	8.7	-	2.5	27	0	35	-	5	-	1.1	27	0	-	-	19.0	-	-	-	-
	MONTH	252.8	-	26	24	10.4	4.5	7.4	-	1.7	7	0	91	-	10	-	-0.7	3	1	-	-	57.4	-	-	-	-
Lullymore Co. Kildare	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	-	-	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	-	-	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	-	-	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	-	-	N/A	-	N/A	-	N/A	N/A
Kilkenny Co. Kilkenny	1-10	65.2	-	10	8	10.4	3.4	6.9	-	-0.7	3	1	30	-	4	-	-6.9	3	5	5.9	-	24.4	-	6.7	9	-
	11-20	50.0	-	8	8	9.4	3.1	6.3	-	-0.5	16	1	24	-	3	-	-5.8	16	7	5.4	-	14.6	-	5.7	7	-
	21-END	40.9	-	6	5	11.0	4.9	7.9	-	1.6	27	0	30	-	4	-	0.0	27	0	7.2	-	21.7	-	8.8	8	-
	MONTH	156.1	260	24	21	10.2	3.7	7.0	+2.3	-0.7	3	2	85	135	11	183	-6.9	3	12	6.1	+1.7	60.7	85	7.0	24	21
Mooncoin (Silverspring) Co. Kilkenny	1-10	65.2	-	9	9	10.9	3.5	7.2	-	-1.4	3	3	33	-	3	-	-8.0	3	5	-	-	26.8	-	-	-	-
	11-20	60.1	-	9	9	9.5	3.2	6.4	-	0.5	15	0	25	-	2	-	-4.1	15	7	-	-	17.3	-	-	-	-
	21-END	48.5	-	8	7	11.5	4.9	8.2	-	0.8	27	0	32	-	4	-	-3.0	25	2	-	-	28.1	-	-	-	-
	MONTH	173.8	202	26	25	10.6	3.8	7.2	-	-1.4	3	3	90	-	9	-	-8.0	3	14	-	-	72.2	-	-	-	-
Ballinamore Co. Leitrim	1-10	87.6	-	10	8	8.8	2.1	5.4	-	0.1	7	0	19	-	2	-	-3.9	1	4	-	-	16.5	-	5.1	-	-
	11-20	63.9	-	10	9	8.0	0.4	4.2	-	-5.2	16	4	14	-	1	-	-10.1	16	5	-	-	21.5	-	4.8	-	-
	21-END	69.4	-	8	7	9.0	3.3	6.2	-	-0.1	28	1	20	-	2	-	-1.0	27	3	-	-	12.8	-	7.1	-	-
	MONTH	220.9	263	28	24	8.6	1.8	5.2	-	-5.2	16	5	53	-	4	-	-10.1	16	12	-	-	50.8	-	5.5	-	13
Ardee (Boharnamoe) Co. Louth	1-10	77.2	-	10	7	8.8	2.9	5.9	-	0.1	7	0	21	-	2	-	-1.5	3	2	-	-	-	-	-	-	-
	11-20	29.2	-	8	7	7.3	1.6	4.5	-	-4.7	16	3	13	-	1	-	-6.0	16	5	-	-	-	-	-	-	-
	21-END	40.9	-	6	6	8.6	3.8	6.2	-	0.2	27	0	21	-	2	-	-0.6	28	2	-	-	-	-	-	-	-
	MONTH	147.3	250	24	20	8.2	2.7	5.5	-	-4.7	16	3	56	-	5	-	-6.0	16	9	-	-	-	-	-	-	-

NOTES ON THE TABLES IN JANUARY ISSUE

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND		P.E. (PENMAN) (mm)			
		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	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	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	-	-	-	-	-
	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	-	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	-	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	-	N/A	-	N/A	-	N/A	
Belmullet Co. Mayo	1-10	70.1	-	10	10	9.9	4.9	7.4	-	2.0	10	0	31	-	1	-	0.7	3	0	6.2	-	10.2	-	12.0	9	-	-
	11-20	83.9	-	10	9	9.0	2.6	5.8	-	-1.5	16	1	20	-	1	-	-6.1	16	2	5.1	-	18.3	-	10.7	10	-	-
	21-END	82.3	-	8	8	10.0	4.1	7.0	-	0.2	28	0	24	-	2	-	0.1	27	0	6.4	-	12.2	-	12.8	8	-	-
	MONTH	236.3	311	28	27	9.6	3.8	6.7	+1.0	-1.5	16	1	75	109	4	-	-6.1	16	2	5.9	+0.6	40.7	56	11.7	27	39	
Claremorris Co. Mayo	1-10	101.4	-	10	9	9.0	2.7	5.9	-	0.5	6	0	21	-	2	-	-0.9	7	1	5.1	-	15.8	-	7.9	7	-	-
	11-20	82.6	-	9	9	8.1	1.8	4.9	-	-4.3	16	2	16	-	0	-	-7.5	16	6	4.3	-	14.8	-	6.7	8	-	-
	21-END	68.6	-	7	7	9.7	3.7	6.7	-	0.0	28	0	23	-	2	-	0.0	28	0	5.9	-	16.6	-	8.7	8	-	-
	MONTH	252.6	328	26	25	8.9	2.7	5.8	+1.5	-4.3	16	2	60	109	4	-	-7.5	16	7	5.0	+1.0	47.2	70	7.7	23	21	
Glenamoy Co. Mayo	1-10	102.1	-	10	10	9.7	2.6	6.1	-	0.0	5	0	22	-	2	-	-1.4	3	1	-	-	12.0	-	7.3	-	-	-
	11-20	92.7	-	9	9	8.4	2.1	5.2	-	-3.4	16	1	17	-	0	-	-0.9	15	2	-	-	22.8	-	8.2	-	-	-
	21-END	76.9	-	8	7	8.9	2.9	5.9	-	0.3	27	0	17	-	1	-	-0.6	27	2	-	-	7.0	-	8.5	-	-	-
	MONTH	271.7	286	27	26	9.0	2.5	5.8	-	-3.4	16	1	55	-	3	-	-1.4	3	5	-	-	41.8	-	7.9	-	12	
Dunsany (Grange) Co. Meath	1-10	71.5	-	9	9	9.3	2.7	6.0	-	0.5	4	0	22	-	1	-	-2.0	3	2	-	-	20.1	-	-	-	-	-
	11-20	36.7	-	9	8	8.2	1.3	4.7	-	-4.1	16	3	16	-	1	-	-9.8	16	6	-	-	18.9	-	-	-	-	-
	21-END	46.7	-	6	6	9.1	4.2	6.6	-	0.4	28	0	23	-	2	-	0.0	27	0	-	-	16.5	-	-	-	-	-
	MONTH	154.9	272	24	23	8.8	2.6	5.7	-	-4.1	16	3	60	-	5	-	-9.8	16	8	-	-	55.5	-	-	-	-	-
Clones Co. Monaghan	1-10	61.8	-	8	8	8.9	2.5	5.7	-	1.0	7	0	20	-	2	-	-2.0	7	3	4.8	-	22.5	-	7.2	8	-	-
	11-20	41.4	-	10	10	7.9	1.6	4.8	-	-4.3	16	3	16	-	1	-	-4.3	16	6	4.0	-	19.6	-	6.2	7	-	-
	21-END	61.9	-	8	6	9.2	3.8	6.5	-	0.0	28	0	22	-	2	-	-0.4	27	2	5.7	-	11.1	-	7.7	7	-	-
	MONTH	165.1	250	26	24	8.6	2.5	5.6	+1.6	-4.3	16	3	58	118	5	-	-4.3	16	11	4.8	+1.1	53.2	86	7.0	22	20	
Birr Co. Offaly	1-10	84.6	-	9	8	9.4	3.4	6.4	-	1.3	1	0	24	-	2	-	-0.6	1	2	5.3	-	19.2	-	5.8	7	-	-
	11-20	47.3	-	8	8	9.2	2.4	5.8	-	-2.3	16	2	22	-	2	-	-8.6	16	5	5.0	-	14.3	-	5.1	7	-	-
	21-END	37.0	-	8	6	10.9	4.7	7.8	-	0.2	28	0	30	-	4	-	0.0	27	0	6.7	-	17.2	-	7.4	7	-	-
	MONTH	168.9	325	25	22	9.7	3.4	6.6	+2.0	-2.3	16	2	76	125	8	-	-8.6	16	7	5.6	+1.3	50.7	70	6.0	21	18	

TABLE 1 (CONTINUED)

FEBRUARY 1990

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND		P.E. (PENMAN) (mm)				
		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	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	96.0	-	10	9	9.7	2.8	6.2	-	-1.6	3	1	24	-	2	-	-5.4	3	7	-	-	-	-	-	-	-	-	-
	11-20	58.2	-	9	9	9.1	2.2	5.7	-	-0.1	15	1	21	-	2	-	-3.0	16	6	-	-	-	-	-	-	-	-	-
	21-END	41.3	-	6	5	10.3	4.9	7.6	-	1.8	27	0	28	-	3	-	-0.8	21	2	-	-	-	-	-	-	-	-	-
	MONTH	195.5	-	25	23	9.7	3.2	6.4	-	-1.6	3	2	73	-	7	-	-5.4	3	15	-	-	-	-	-	-	-	-	-
Dungarvan (Carriglea) Co. Waterford	1-10	84.2	-	10	9	10.9	3.5	7.2	-	-1.1	1	2	32	-	3	-	-5.9	8	8	-	-	21.0	-	5.7	-	-	-	-
	11-20	77.1	-	10	9	9.9	4.2	7.0	-	1.2	15	0	30	-	2	-	-7.8	15	8	-	-	14.1	-	4.6	-	-	-	-
	21-END	42.4	-	8	8	11.6	5.6	8.6	-	1.9	27	0	35	-	4	-	-5.5	21	6	-	-	26.5	-	6.1	-	-	-	-
	MONTH	203.7	210	28	26	10.7	4.3	7.5	-	-1.1	1	2	96	-	9	-	-7.8	15	22	-	-	61.6	-	5.4	-	-	3	
Mullingar Co. Westmeath	1-10	83.2	-	8	8	8.8	2.7	5.8	-	0.5	3	0	20	-	2	-	-2.5	3	4	4.7	-	20.4	-	7.1	7	-	-	-
	11-20	46.8	-	9	8	8.1	1.9	5.0	-	-3.5	16	1	17	-	1	-	-7.5	16	5	4.3	-	18.9	-	6.3	7	-	-	-
	21-END	61.6	-	7	7	9.4	3.8	6.6	-	0.3	28	0	23	-	2	-	-0.3	27	1	6.0	-	17.2	-	8.2	7	-	-	-
	MONTH	191.6	319	24	23	8.7	2.7	5.7	+1.7	-3.5	16	1	59	116	5	-	-7.5	16	10	4.9	+1.0	56.5	80	7.1	21	19		
J.F.K. Park Co. Wexford	1-10	54.5	-	9	9	10.5	4.7	7.6	-	1.4	3	0	35	-	2	-	-2.9	3	4	-	-	N/A	-	10.7	-	-	-	-
	11-20	44.3	-	10	9	9.4	3.4	6.4	-	0.2	15	0	25	-	1	-	-4.6	15	6	-	-	N/A	-	8.4	-	-	-	-
	21-END	36.0	-	7	7	10.6	5.2	7.9	-	1.2	27	0	29	-	2	-	-0.1	27	1	-	-	N/A	-	9.2	-	-	-	-
	MONTH	134.8	164	26	25	10.1	4.4	7.2	-	0.2	15	0	89	-	6	-	-4.6	15	11	-	-	N/A	-	9.5	-	N/A		
Clonroche Co. Wexford	1-10	59.8	-	9	9	9.9	4.4	7.1	-	0.5	3	0	31	-	2	-	-4.4	3	5	-	-	25.5	-	3.9	-	-	-	-
	11-20	56.4	-	9	9	8.4	3.4	5.9	-	0.7	11	0	21	-	0	-	-2.3	15	4	-	-	20.7	-	3.8	-	-	-	-
	21-END	44.5	-	7	7	10.3	5.0	7.7	-	0.3	27	0	28	-	1	-	-1.0	25	2	-	-	30.3	-	4.6	-	-	-	-
	MONTH	160.7	171	25	25	9.5	4.2	6.8	-	0.3	27	0	79	-	3	-	-4.4	3	11	-	-	76.5	-	4.0	-	10		
Johnstown Castle Co. Wexford	1-10	53.6	-	9	9	11.2	5.0	8.1	-	1.2	1	0	39	-	4	-	-5.2	1	2	-	-	18.4	-	3.6	-	-	-	-
	11-20	52.0	-	9	9	9.5	3.7	6.6	-	0.7	12	0	26	-	1	-	-2.6	15	6	-	-	14.6	-	2.9	-	-	-	-
	21-END	33.6	-	7	7	10.9	5.3	8.1	-	1.8	27	0	31	-	2	-	-0.5	28	1	-	-	28.1	-	3.6	-	-	-	-
	MONTH	139.2	176	25	25	10.5	4.6	7.6	-	0.7	12	0	96	-	8	-	-5.2	1	9	-	-	61.1	-	3.3	-	8		
Rosslare Co. Wexford	1-10	37.6	-	8	8	10.8	5.9	8.4	-	3.7	10	0	40	-	3	-	0.4	3	0	7.0	-	26.3	-	8.2	8	-	-	-
	11-20	44.9	-	9	9	9.4	4.6	7.0	-	1.3	15	0	29	-	1	-	-0.6	15	1	6.3	-	16.7	-	6.4	7	-	-	-
	21-END	24.9	-	6	6	10.8	5.9	8.4	-	2.1	28	0	33	-	3	-	0.6	27	0	7.9	-	32.1	-	8.4	8	-	-	-
	MONTH	107.4	156	23	23	10.3	5.4	7.9	+2.1	1.3	15	0	101	146	7	-	-0.6	15	1	7.0	+1.5	75.1	98	7.6	23	22		

NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 2 GLOBAL RADIATION

STATION	PERIOD	AMOUNT MJ/m ²
Malin Head Co. Donegal	1-10	23.47
	11-20	37.12
	21-end	37.07
	Month	97.66
Dublin Airport Co. Dublin	1-10	32.35
	11-20	41.16
	21-end	41.45
	Month	114.96
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	30.91
	11-20	42.27
	21-end	38.91
	Month	112.09
Kilkenny Co. Kilkenny	1-10	34.91
	11-20	39.47
	21-end	48.41
	Month	122.79
Belmullet Co. Mayo	1-10	25.39
	11-20	35.35
	21-end	32.97
	Month	93.67
Clones Co. Monaghan	1-10	30.43
	11-20	39.31
	21-end	33.49
	Month	103.23
Birr Co. Offaly	1-10	30.58
	11-20	42.10
	21-end	42.25
	Month	114.93

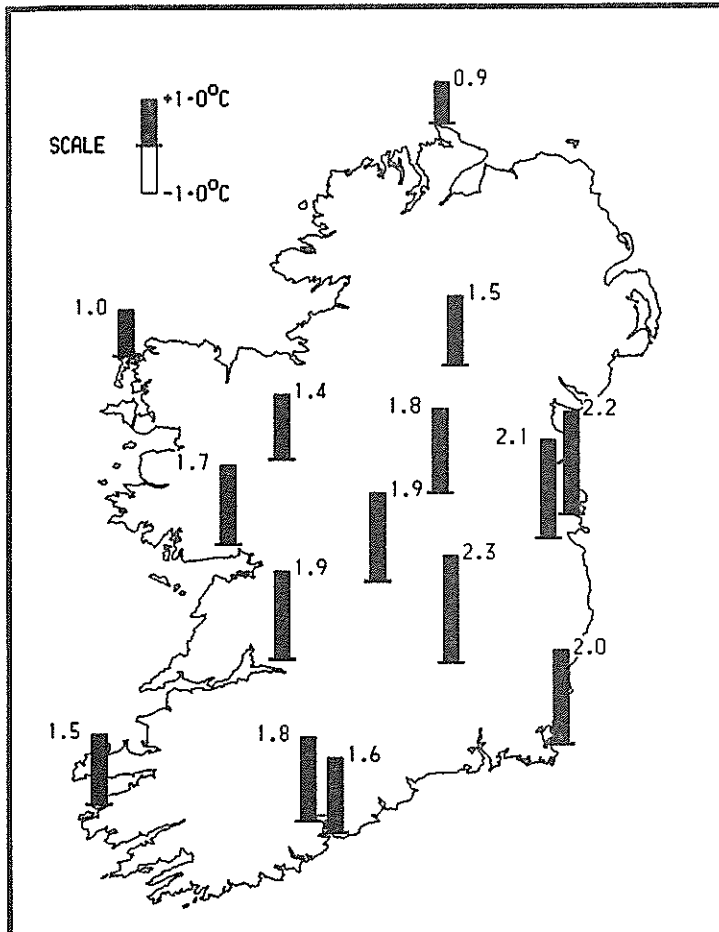
TABLE 3 POTENTIAL EVAPOTRANSPIRATION (P.E.) AND SOIL MOISTURE

STATION	PERIOD	P.E.(mm)		SOIL MOISTURE (mm)	
		Amount	Deficit	Accumulated Deficit	Surplus
Carlow (Oak Park) Co. Carlow	1-10	(-1.9)	-	0	57
	11-20	2.5	-	0	54
	21-end	9.0	-	0	27
	Month	---	-	-	--
Kinsealy Co. Dublin	1-10	10.4	-	0	34
	11-20	6.3	-	0	21
	21-end	5.4	-	0	33
	Month	22.1	-	-	--
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	(-2.6)	-	0	88
	11-20	(-6.0)	-	0	82
	21-end	4.4	-	0	46
	Month	---	-	-	--
Ballinamore Co. Leitrim	1-10	0.3	-	0	79
	11-20	9.8	-	0	63
	21-end	---	-	0	--
	Month	---	-	-	--
Glenamoy Co. Mayo	1-10	(-10.4)	-	0	99
	11-20	(34.4)	-	0	71
	21-end	9.5	-	0	67
	Month	---	-	-	--
Johnstown Castle Co. Wexford	1-10	10.8	-	0	43
	11-20	3.4	-	0	49
	21-end	11.1	-	0	22
	Month	24.3	-	-	--

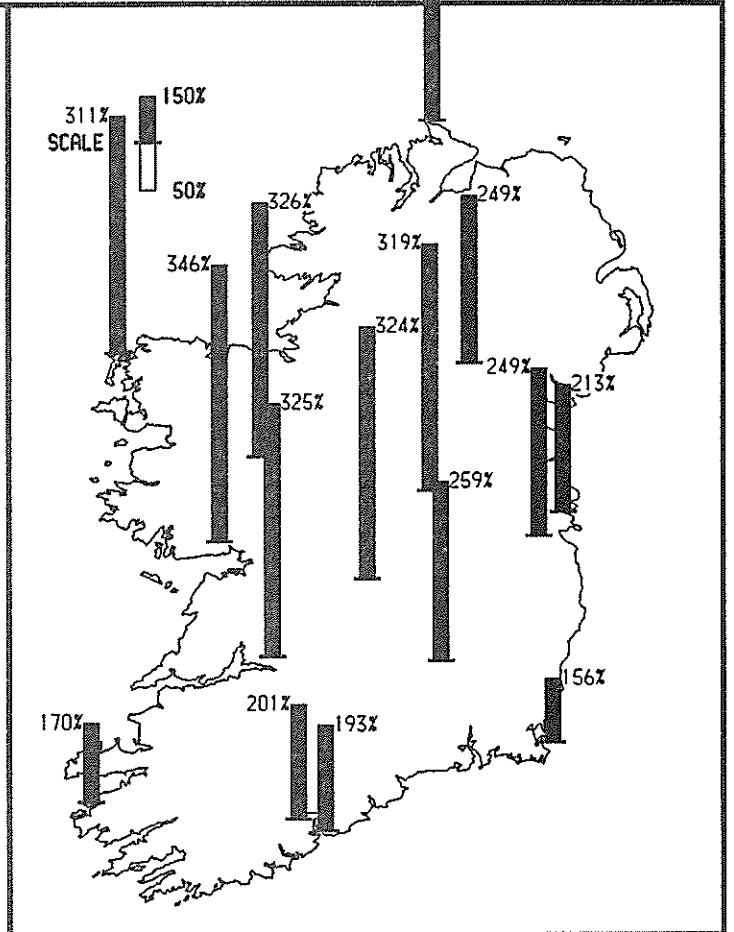
TABLE 4 SOIL CLIMATE (MULLINGAR)

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	5.3	4.6	3.6	.44
	11-20	5.2	4.4	3.3	1.08	51.4	68.1
	21-end	7.2	6.2	5.3	.33	48.0	67.3
Mineral	1-10	6.1	4.7	3.1	.13	64.9	72.8
	11-20	6.0	4.3	2.8	.16	54.6	71.5
	21-end	7.7	6.0	4.8	.31	47.7	53.9

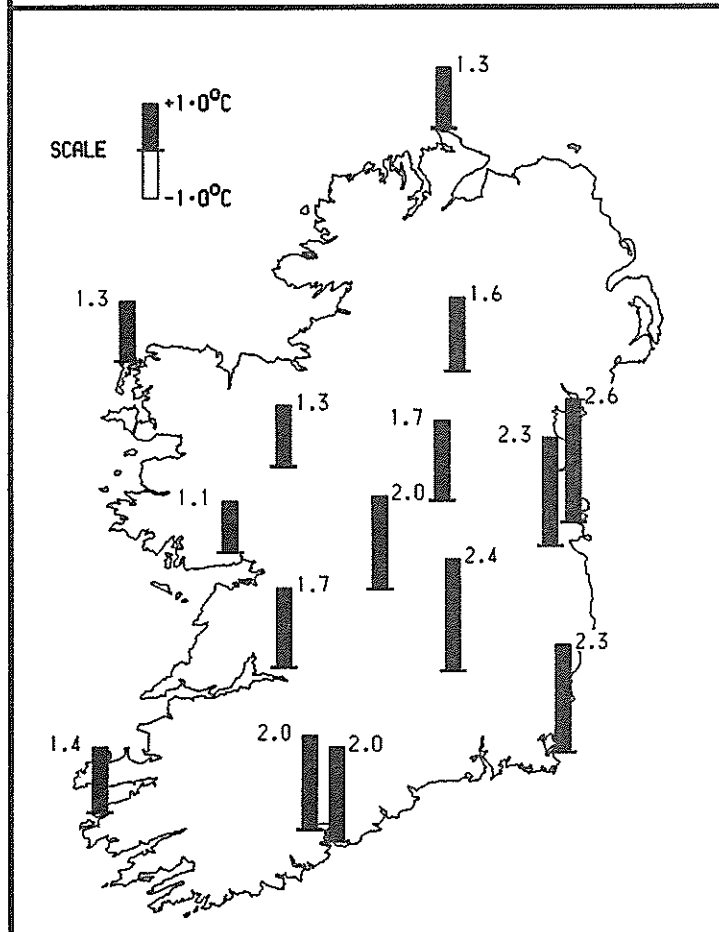
Notes on the tables in January issue



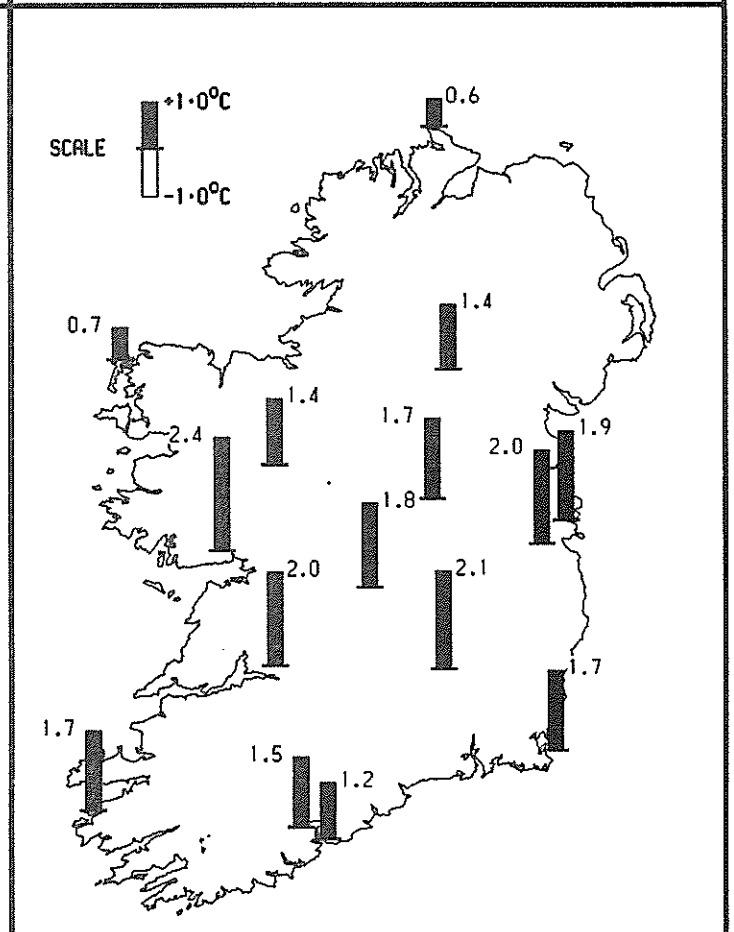
MEAN TEMPERATURE (Deviation from 1951-1980 normals)



RAINFALL (Percentage of 1951-1980 normals)



MEAN MAX. TEMPERATURE (Deviation from 1951-1980 normals)



MEAN MIN. TEMPERATURE (Deviation from 1951-1980 normals)

PRECIPITATION VALUES FOR February 1990

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	94.0		10	9	103.3		9	9
11 - 20	74.7		10	9	80.8		9	8
21 - END	52.5		6	6	72.3		8	8
MONTH	221.2	311	26	24	256.4	281	26	25

Outlook for March 15th - 23rd

A moderate to fresh southwesterly airflow will prevail throughout the period. A continental high will also exert considerable influence on conditions during the first half of the period : This spell will be very mild and mostly dry especially in the south and east with good drying conditions. Field conditions will improve greatly and growth will be good. Pressure will decline over the second half and there will be increasing rainfall and a deterioration in ground conditions but growth will continue to be good.

Effects of Temperature Changes in Autumn on the Establishment of Perennial Ryegrass

Noel Culleton, Teagasc, Johnstown Castle, Co. Wexford

There are approximately 132,000 ha sown down to grass each year in Ireland, and of these some 30 to 40 per cent are sown in autumn. The key to successful establishment is the emergence of an adequate number of seedlings and the ability of these seedlings to tiller profusely in the months after sowing. It is now well documented that delaying sowing date in autumn as temperature declines increases seedling mortality.

The time of sowing and the role of tillering is less clear and an experiment at Johnstown Castle was designed to examine this question. Perennial ryegrass cv. Talbot was sown in the first week in August and again in the first week of October. Seedling emergence was recorded some 6 weeks after each sowing. The numbers of tillers present and the dry matter yield were recorded in mid March of the following year. The results are summarised in Table 1.

Some 73 per cent of the early sown seeds emerged while only 55.3 per cent emerged from the late sown seeds. It was also observed during the counting some 6 weeks after sowing that many of the seedlings had already begun to tiller in the early sown crop, while in the late sown crop most of the seedlings were still only in the 2-3 leaf stage.

The temperature in the 6 weeks after the early sowing was, on average, almost 4 °C higher than that in the 6 weeks after the late sowing and leaf appearance rate per seedling was consequently lower in the late sown crop. Ultimately, tillering depends on leaf appearance rate and it follows that tillering rate was slower after the October sowing. Table 1 bears this out, in that in March of the following year there were over 7,000 tillers from the August sowing and only a little over 3,000 in the late sowing. Dry matter yields were also significantly lower in the late sown crop.

An open sward in spring can be improved by frequent grazing and nitrogen applications. An open sward is undesirable and a sward that is due to be cut for silage is difficult, if not impossible to rectify, because of the inability of a silage crop to tiller.

It can be concluded that swards destined for silage cutting should be sown early in autumn, at a time when temperatures are still sufficiently high for rapid tillering rate to occur. If the crop is sown late (i.e. mid September onwards) when temperatures are declining rapidly it should be grazed in spring a few times before silage cutting commences. This grazing improves tillering rates.

Table 1. Seedling parameters in early and late autumn sowing of perennial ryegrass.

	August	October	LSD* (P=0.05)
No. of seeds sown/m ²	1030	1030	-
No. of seedling/m ² 6 weeks after sowing	759	570	137
No. of tillers/m ² in the following March	7193	3117	2470
D.M. yield kg/ha in the following March	913	478	330

* Least Significant Difference