

PROEFSTATION VOOR DE AKKER- EN WEIDBOUW

W A G E N I N G E N

Research and Advisory Institute for  
Field Crop and Grassland Husbandry  
Wageningen - Netherlands

Intern Rapport nr.40 (1959)

REPORT OF FIELD EXPERIMENTS WITH MAIZE VARIETIES  
IN THE NETHERLANDS IN 1958

W.R. BECKER

Meteorological data (tables 1 and 2)

In 1958 the first half of the growing season was a little colder than normal, the second half was somewhat warmer, especially during the ripening period. Rainfall was rather normal as a whole, although July, August and September were slightly more humid.

From April 20 to October 20 the average heat-unit sum (day-degrees higher than 8°C) was for the whole country 2.4 % greater than normal, for the meteorological station De Bilt this figure was 2.7 % greater than normal.

Central variety trial PAW 198 (table 3)

On this experimental field 49 maize varieties were compared for grain yield and other performances.

Varieties with (F) behind the name are of French origin, with (A) of American origin and with (C) of Canadian origin.

All other varieties originate from Dutch commercial breeders: with "C.B." from Veredelingsbedrijf Centraal Bureau, at Hoofddorp; with "C.I.V." from Kweekbedrijf C.I.V., at Ottersum; with "SM" or "Caldera" from D.J. van der Have, at Kapelle-Biezelinge; with "K" from Kühn & Co., at Naarden.

Most of the Dutch varieties are still in the experimental stage. On the official Dutch list of varieties the following are mentioned:

Early varieties : Vroege gele ronde C.B., Matador C.B., Kuma  
Medium early varieties: C.I.V. 2, Goudster (C.I.V.), Caldera 33 (U)  
Medium late varieties : C.I.V. 6, Wisconsin 240, Caldera 402 (U)  
(U) means "for export only", because these varieties proved to be of value especially in other countries.

Other Dutch varieties may only be available by way of exception

The American maturity rating is estimated by comparison with some well-known American and Dutch varieties. The variability of the Dutch climate makes this estimation a very difficult one. Sometimes the results in two different years seem to be contradictory. Varieties originating from other countries, especially of lower latitude, may respond more or less differently from their behaviour in their home country.

As an average of many years (1948 till 1958 including) our estimation is for the Netherlands:

Early maturing: up to 159 days from sowing to maturity; these varieties belong to 70 - 75 (A)merican (M)aturity (R)ating.

Medium early maturing: 158 - 164 days from sowing to maturity; these varieties belong to 75 - 80 A.M.R.

Medium late maturing: 162 - 170 days from sowing to maturity; these varieties belong to 80 - 85 A.M.R.

Late maturing: 169 and more days from sowing to maturity; these varieties belong to 85 - 95 A.M.R.

Very late maturing: no reliable Dutch estimation is possible; these varieties belong to more than 95 A.M.R.

The "late" and "very late" varieties are in the Netherlands only usable for maize as a fodder and silage crop.

The number of days between the date of sowing and the date on which the kernels contain 40 % moisture is principally the criterion for classification of a variety, but other characteristics may also influence this decision. To be mentioned in this respect are the variability of ripening behaviour over different years and the time of withering of stems and leaves.

In 1958 varieties classified 70 - 75 A.M.R. took 156 - 161 days from sowing to 40 % moisture in the kernels; varieties belonging to 75 - 80 A.M.R. took 158 - 172 days; the 80 - 85 A.M.R. varieties took 172 - 176 days; the 85 - 90 A.M.R. varieties took 176 - 180 days; and the one 90 - 95 A.M.R. variety took 182 days to maturity with 40 % moisture.

Northern variety trial PAW 199 (table 4)

On this experimental field 20 varieties were compared for grain yield and other performances under extreme northern conditions. The average temperatures at this location are lower than on the other variety trial fields, cold nights frequently occur in the spring and in the autumn.

The statements concerning origin and availability of the varieties of PAW 198 also apply to PAW 199.

The relation between the American Maturity Rating and the number of days from sowing to 40 % moisture in the kernels is as follows:

70 - 75 A.M.R.	178 - 189 (183?) days
75 - 80 A.M.R.	186 - 190 (187?) "
80 - 85 A.M.R.	187 - 195 "

Some differences from the data of table 3 are inexplicable: the relative lateness of C.I.V. 56/27 and Kuma on PAW 199, the relative earliness of Goudster, C.I.V. 2 and C.I.V. 6 especially on PAW 198.

Silage variety trial PAW 200 (table 5)

On this experimental field 36 maize varieties were compared for total green matter, dry matter and other performances.

The statements concerning origin and availability of the varieties of PAW 198 also apply to the varieties of PAW 200.

On the official Dutch list of varieties the following are now mentioned as varieties for forage and silage:

Medium early varieties: Goudster (C.I.V.), Caldera 331 (U)

Medium late varieties : C.I.V. 7, Caldera 402 (U), Caldera 501 (U)

Late varieties : Pioneer 395

Very late varieties : Pioneer 377 A, Pioneer 388 (U), Pioneer 390 (U)

(U) means for export only, because these varieties proved to be of value especially in other countries.

Of PAW 200 a statistical analysis was made of the yield data of dry matter, these being more important than the yield data of green matter.

As previously stated\* a high percentage of ears in the dry matter goes with a low percentage of crude fibre and with a high figure for starch equivalents. The varietal differences in these respects are smaller than in other years as a result of the favourable conditions during the ripening period.

An early storm damaged this crop rather severely and very unevenly. So some varieties, which are known for good standability, were rather disappointing in this case. To be mentioned are: KC 3, SM 61, Caldera 402, Pioneer 395, C.I.V. 7, C.B. 44, I.N.R.A. 200, KE 3, Caldera 501, C.I.V. 6, KF, KN 2.

Some of the damaged varieties suffered decreases in yield and ear development as caused by severe lodging, especially if they belonged to the late or medium late group. Earlier maturing varieties were already farther advanced, later varieties, being younger, had more capacity to recover. To be mentioned for severe damage in this respect are: C.I.V. 7, C.I.V. 6, KF. As stated before the damage was not evenly spread over the field. Gusts of wind were rather local in their effect.

\* BECKER, W.R. Report of field experiments with maize varieties in the Netherlands in 1957; Intern Rapport nr. 12 (1958) van het P.A.W.

Table 1. Average 24 hours temperatures ( $^{\circ}\text{C}$ ) in 1958, April-October inclusive (decades I, II and III) monthly (M), average of the years 1921-1950 (N 30) and monthly deviation (Dev.)

Meteorological Station De Bilt (30 km NW from PAW 198)

	April	May	June	July	August	September	October
I	4.0	12.7	15.4	16.9	16.0	18.2	13.3
II	6.0	11.4	14.3	17.3	17.8	15.2	10.5
III	9.2	12.6	14.4	15.8	17.8	13.9	9.6
M	6.4	12.3	14.7	16.6	17.2	15.8	11.1
N 30	8.4	12.4	15.2	17.2	16.7	14.2	9.8
Dev.	-2.0	- 0.1	- 0.5	- 0.6	+ 0.5	+ 1.6	+ 1.3
Average figures for the whole country							
	April	May	June	July	August	September	October
I	3.7	12.1	14.8	16.7	16.2	18.2	13.5
II	5.8	11.2	14.0	17.3	17.7	15.7	10.9
III	8.9	12.5	14.4	15.8	17.5	14.2	9.7
M	6.1	11.9	14.4	16.6	17.1	16.1	11.3
N 30	8.0	11.9	14.8	17.0	16.8	14.5	10.2
Dev.	-1.9	-	- 0.4	- 0.4	+ 0.3	+ 1.6	+ 1.1

Table 2. Average rainfall (mm) in 1958, April-October inclusive (decades I, II and III), monthly (M), average of the years 1921-1950 (N 30) and monthly deviation (Dev.)

Meteorological Station De Bilt (30 km NW from PAW 198)

	April		May		June		July		August		September		October	
	mm	days	mm	days	mm	days	mm	days	mm	days	mm	days	mm	days
I	13	3	8	2	6	1	20	3	16	4	23	4	25	6
II	9	3	28	5	5	1	19	2	38	4	12	3	42	8
III	29	4	23	5	43	6	50	8	34	5	48	6	5	2
M	51	10	59	12	54	8	89	13	88	13	83	13	72	16
N 30	51	10	57	9	58	9	74	11	82	12	71	11	73	12
Dev.	-	-	+ 2	+ 3	- 4	-1	+15	+ 2	+ 6	+ 1	+12	+ 2	- 1	+ 4
Average figures for the whole country														
	April		May		June		July		August		September		October	
	mm	days	mm	days	mm	days	mm	days	mm	days	mm	days	mm	days
I	12	3	11	3	11	3	23	2	22	5	23	3	23	5
II	8	3	23	4	6	1	24	3	39	5	12	2	43	7
III	27	4	27	4	36	6	42	7	32	5	45	6	7	2
M	46	10	61	12	53	10	89	12	93	15	79	11	72	15
N 30	48	9	51	9	54	9	72	10	75	11	71	11	73	12
Dev.	- 2	+ 1	+10	+ 3	- 1	+ 1	+17	+ 2	+18	+ 4	+ 8	-	- 1	+ 3

-Table 3

PERFORMANCE RECORDS OF MAIZE VARIETIES ON EXPERIMENTAL FIELD PAW 198

Year: 1958  
 Country: Netherlands  
 Location of experiment: Rhehen  
 Name of farmer: A.v.d. Benbas  
 Geographic position: 5°40' East, 52° North  
 Altitude above sea-level: 12 metres  
 Size of plot: 15.68 square metres (2.8 x 5.6)  
 Soil type: sandy soil  
 Meteorological data: see table 1 and 2  
 Date of planting: April 23  
 Rate of seeding: 7000 plants per hectare, Kuna 107000 and  
 CB varieties 89000 plants per hectare

Damage by diseases: none  
 Damage by insects, rodents or birds: very little bird damage  
 Seasonal conditions, whether usual or abnormal:  
 June and July somewhat cool; warm ripening period  
 Experimental design: 7 x 7 lattice  
 Number of replications: 3  
 Significant differences: LSD 0.05 = 2.8 q/ha = 3.7 % of standard  
 LSD 0.01 = 3.7 q/ha = 4.9 % of standard  
 (n) Standard = 75.9 q/ha = average of all entries  
 Best adapted hybrids or maturity ratings: 70-85 days Relative Maturity

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Variety or strain	American maturity rating	Days to emergence	Days to tasseling	Days to harvest	% Plants root lodged	% Plants stalk lodged or broken	% Erect plants	Plant height in cm	Ear height in cm	Ears per plant	Moisture content at harvest	Grain yield q/ha at 15.5 % moisture	Relative yield % of standard	Days maturity 40% moist
1 INRA 258 (F)	85-90	17	97	177	1.5	0.0	98.5	180	95	0.98	39.5	85.7	113	176
2 C.I.V., 56/2	80-85	18	95	177	0.3	0.0	99.7	180	85	1.08	37.4	83.5	110	172
3 C.B. 440	70-75	17	89	162	3.7	4.9	91.4	160	85	0.98	38.8	83.0	109	160
4 SM 62	80-85	16	93	177	4.7	0.6	94.7	170	85	0.97	37.4	82.5	109	172
5 C.B. 447	70-75	17	87	162	0.2	14.4	85.4	160	80	0.98	37.6	82.4	109	157
6 INRA 200 (F)	80-85	17	95	177	3.9	0.9	95.2	170	90	0.99	38.8	81.9	108	175
7 C.I.V., 7	85-90	17	97	177	2.9	0.0	97.1	190	100	0.95	39.9	81.5	107	177
8 KC 3 (A)	85-90	17	102	177	0.6	0.3	99.1	200	105	0.98	40.9	80.9	107	179
9 C.I.V., 4	80-85	19	96	177	3.1	0.2	96.7	190	95	0.88	39.9	80.9	107	177
10 C.I.V., 6	80-85	17	96	177	1.8	0.6	97.6	195	95	1.00	37.8	80.7	106	173
11 C.B. 454	75-80	19	96	162	1.7	0.2	98.1	175	80	0.95	42.7	80.6	106	167
12 SM 77	85-90	17	95	177	0.6	1.2	98.2	175	90	1.01	39.9	80.6	106	177
13 C.I.V., 56/1	75-80	17	89	177	4.1	1.2	94.7	170	90	1.03	35.1	79.8	105	167
14 JH 55-14 K	70-75	19	94	162	7.4	0.6	92.0	180	95	1.15	37.9	79.0	104	158
15 C.B. 442	70-75	17	89	162	9.4	0.7	89.9	160	80	0.96	38.8	77.6	102	160
16 Goudster (C.I.V.)	75-80	17	93	162	20.1	1.5	78.4	185	90	0.93	38.0	77.6	102	158
17 C.B. 451	75-80	21	97	162	7.9	0.7	91.4	185	80	0.92	41.9	77.0	101	166
18 C.B. 438	70-75	17	89	162	3.0	4.8	92.2	155	75	1.02	36.8	76.9	101	156
19 SM 51	85-90	16	99	177	0.6	1.5	97.9	180	90	0.97	41.7	76.8	101	180
20 C.B. 441	75-80	17	92	162	6.8	4.7	88.5	175	70	0.93	40.7	76.3	101	163
21 SM 60	80-85	17	93	177	7.5	3.0	89.5	170	90	0.99	37.7	76.3	101	172
22 C.B. 437	70-75	17	92	162	2.0	6.9	91.1	160	80	0.98	39.1	76.3	101	160
23 C.B. 444	70-75	18	87	162	5.5	3.5	91.0	155	70	0.95	39.6	76.1	100	161
24 C.B. 432	75-80	19	89	162	0.5	7.0	92.5	160	70	0.98	40.0	76.1	100	162
25 Matador	70-75	16	90	162	18.7	0.5	80.8	170	80	0.98	39.3	76.0	100	161
26 KP (A)	85-90	17	97	177	3.8	0.9	95.3	190	105	0.96	39.6	76.0	100	176
27 C.B. 43	80-85	19	95	177	7.8	1.7	90.5	175	80	0.94	38.0	75.6	100	173
28 C.B. 44	80-85	19	95	177	2.5	0.2	97.3	180	80	0.97	39.6	75.2	99	176
29 C.B. 450	70-75	18	92	162	19.4	4.0	76.6	180	90	0.94	38.2	75.1	99	158
30 SM 61	80-85	16	93	177	1.8	4.2	94.0	180	90	1.02	38.3	75.0	99	174
31 C.B. 449	70-75	17	89	162	9.3	4.9	85.8	150	75	0.95	37.4	74.9	99	157

Table 3 continued

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Variety or strain	American maturity rating	Days to emergence	Days to tasseling	Days to harvest	% plants root lodged	% plants stalk lodged or broken	% Eroot plants	Plant height in cm	Ear height in cm	Ears per plant	Moisture content at harvest	Grain yield q1/ha at 15.5% moisture	Relative yield % of standard	Days to maturity 40% moisture
32 C.B. 434	70-75	17	89	162	5.2	9.9	84.9	170	85	0.94	36.7	74.8	99	159
33 Br 55-13	70-75	19	95	162	4.2	1.8	94.0	175	85	1.08	39.5	74.0	97	161
34 KN 2	90-95	17	104	177	1.2	0.3	98.5	180	95	0.97	42.6	73.8	97	182
35 C.I.V. 2	75-80	17	94	162	7.4	2.1	90.5	170	85	0.93	38.6	73.4	97	159
36 C.I.V. 55/130	70-75	17	94	162	8.5	1.3	90.2	180	90	0.87	39.4	73.0	96	161
37 C.B. 446	70-75	17	95	162	7.8	1.6	90.6	165	80	0.91	38.4	72.9	96	159
38 C.B. 448	70-75	17	91	162	10.6	0.9	88.5	155	75	0.97	37.5	72.6	96	157
39 C.B. 439	70-75	17	87	162	0.7	11.5	87.8	150	70	0.95	37.4	72.6	96	157
40 C.B. 445	70-75	17	88	162	8.7	6.8	84.5	160	75	0.91	37.5	72.2	95	157
41 SM 37	70-75	16	95	162	34.0	1.8	64.2	185	100	1.04	38.3	71.2	94	159
42 C.B. 452	70-75	19	91	162	1.0	4.3	94.7	150	65	0.94	38.0	71.1	94	158
43 C.B. 453	75-80	19	95	162	1.2	0.0	98.8	170	75	0.93	43.5	70.9	93	169
44 Warwick 155	85-90	18	97	177	4.8	1.2	94.0	180	90	0.99	39.4	70.8	93	176
45 SM 56	70-75	15	93	162	51.8	1.5	46.7	170	90	0.97	37.6	69.5	92	157
46 Caldera 331	75-80	16	92	162	27.1	1.2	71.7	175	90	0.93	37.3	69.1	91	157
47 Wisconsin 240	80-85	17	95	177	7.1	0.0	92.9	180	90	0.97	37.5	67.7	89	172
48 C.I.V. 56/27	70-75	17	87	162	10.5	1.8	87.7	145	70	0.98	37.7	67.0	88	157
49 Kuma	75-80	19	96	177	15.3	6.2	78.5	155	75	0.82	37.7	62.4	82	172

The conclusion of the range test is the following:

- 5-1 % level: 1 > 20 12 > 43  
 2 > 34 13 > 45  
 3 > 36 14 > 46  
 5 > 38 16 > 47  
 7 > 41 19 > 48  
 9 > 42 46 > 49

Statistical analyses by H.J. Reints

Table 4

## PERFORMANCE RECORDS OF MAIZE VARIETIES ON EXPERIMENTAL FIELD PAW 199

Year: 1958  
 Country: Netherlands  
 Location of experiment: Emmencompascuum  
 Name of farm: A.G. Mulderhoeve  
 Geographic position: 7° East, 52° 30' North  
 Altitude above sea-level: ca. 5 metres  
 Size of plot: 15.68 square metres (2.8 x 5.6)  
 Soil type: peaty sand  
 Meteorological data: see table 1 and 2  
 Date of planting: 24th April

Rate of seeding: 74000 plants per hectare, Caldera 131 and Kuma 107000, C.B. varieties  
 69000 plants per hectare  
 Damage by diseases: none  
 Damage by insects, rodents or birds: mice damaged some young plants  
 Seasonal conditions, whether usual or abnormal: June and July somewhat cool; warm ripening period  
 Experimental design: 5 x 4 lattice  
 Number of replications: 3  
 Significant differences: LSD 0.05 = 5.5 qt/ha = 10.4 % of standard  
 LSD 0.01 = 7.4 qt/ha = 13.9 % of standard  
 (k) Standard = 100 = 53.1 qt/ha = average of all entries  
 Best adapted hybrids or maturity ratings: 70-80 days Relative Maturity

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
Variety or strain	American maturity rating	Days to emergence	Days to tasseling	Days to harvest	Plant height in cm	Ear height in cm	Ears per plant	Moisture content at harvest	Grain yield qt/ha at 15.5 % moisture	Relative yield % of standard	Days to maturity 40 % moisture
1 Goudster	75-80	23	76	181	195	95	0.86	42.7	59.5	112	186
2 SM 56	70-75	19	75	181	190	95	1.02	41.2	59.5	112	183
3 C.I.V. 2	75-80	21	75	181	185	90	0.89	43.2	57.9	109	187
4 C.I.V. 56/1	75-80	20	77	181	175	85	0.97	42.5	57.8	109	186
5 C.I.V. 4	80-85	23	77	181	195	95	0.91	46.8	55.4	104	195
6 C.I.V. 56/27	70-75	25	74	181	150	65	0.89	43.8	54.7	103	189
7 SM 87	70-75	19	69	181	160	75	0.85	40.5	54.3	102	182
8 C.B. 43	80-85	24	77	181	180	70	1.09	43.1	54.0	102	187
9 SM 89	70-75	20	70	181	165	70	0.91	39.7	53.7	101	180
10 INRA 200	80-85	22	76	181	165	80	0.96	44.4	53.5	101	190
11 SM 86	75-80	19	72	181	155	65	0.87	42.9	53.4	101	187
12 C.I.V. 56/2	80-85	20	77	181	195	95	0.89	43.4	52.8	99	188
13 SM 88	70-75	21	69	181	145	65	0.95	38.6	52.4	99	179
14 C.B. 432	79-80	22	70	181	165	70	0.88	43.1	52.3	98	187
15 Matador	70-75	21	75	181	170	70	0.97	40.5	51.6	97	182
16 SM 90	70-75	22	69	181	150	60	0.97	40.3	51.5	97	182
17 C.I.V. 6	80-85	21	76	181	190	80	0.85	45.2	51.0	96	191
18 C.B. 44	80-85	24	78	181	170	70	1.20	43.1	48.9	92	187
19 Caldera 131	70-75	21	71	181	155	70	0.96	38.8	46.7	88	179
20 Kuma	75-80	23	77	181	165	65	0.93	44.3	41.6	78	190

The conclusion of the range test is the following:

5-1 & level: 2 > 18  
 4 > 19  
 18 > 20

1 & level: 2 > 19  
 14 > 20

Statistical analyses by H.J. Reints



Table 5

## PERFORMANCE RECORDS OF MAIZE VARIETIES FOR SILAGE ON EXPERIMENTAL FIELD, PAV 200

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Variety or strain	American maturity rating	Days to tasseling	% Brest plants	Maturity stage at harvest time	Yield green matter ql/ha	Dry matter %	Yield dry matter ql/ha	Relative yield % of standard	% Bar of total dry matter	Digestible crude protein %	Digestible crude protein ql/ha	Crude fibre %	Starch-equivalent %	Starch-equivalent ql/ha
1 Pioneer 377A	(A)	100-105	100	milk	888.7	19.2	170.9	116	36.6	6.8	11.6	25.2	63	107.7
2 Pioneer 383	(A)	100-105	100	milk	935.7	17.8	167.0	113	36.3	6.5	10.9	26.0	63	105.2
3 C.I.V. 8	(A)	85-90	101	dough	728.1	22.5	163.7	111	41.3	7.0	11.5	22.1	65	106.4
4 Pioneer 398	(A)	95-100	108	milk to soft dough	796.8	20.3	161.8	110	39.9	6.8	11.0	25.8	63	101.9
5 Dekalb 56	(A)	95-100	110	milk to soft dough	728.2	20.8	157.4	107	40.7	6.8	10.7	23.2	65	102.3
6 KC 3	(A)	85-90	105	soft dough	712.9	20.9	155.1	105	42.7	8.0	12.4	21.6	65	100.8
7 SM 61	(A)	80-85	93	nearly completely mature	611.9	25.1	153.7	104	47.5	7.2	11.1	21.4	66	101.4
8 KE 2	(A)	90-95	105	soft dough	680.1	22.2	150.8	102	41.0	7.7	11.6	23.3	64	96.5
9 Caldera 402	(A)	80-85	96	hard dough	654.9	23.0	150.6	102	42.6	6.9	10.4	21.7	64	96.4
10 SM 74	(A)	80-85	99	dough	696.0	21.6	150.0	102	41.8	6.8	10.2	24.0	66	99.0
11 Pioneer 395	(A)	90-95	103	soft dough	704.2	21.2	149.0	101	43.6	6.8	10.1	23.3	64	95.4
12 C.I.V. 7	(A)	85-90	99	dough to hard dough	679.1	21.9	148.7	101	34.1	6.7	10.0	21.9	64	95.2
13 C.B. 419	(A)	80-85	96	hard dough	625.7	23.7	148.3	101	43.2	7.7	11.4	22.7	65	96.4
14 SM 77	(A)	85-90	98	dough	750.8	19.7	148.3	101	40.7	6.8	10.1	24.0	64	94.9
15 C.B. 44	(A)	80-85	96	nearly completely mature	596.1	24.8	148.0	100	47.6	7.5	11.1	21.1	67	99.2
16 KE 7	(A)	85-90	107	dough	699.4	21.1	147.6	100	42.5	6.8	10.0	23.4	65	95.9
17 Caldera 431	(A)	85-90	93	dough to hard dough	632.2	23.3	146.8	100	43.4	7.2	10.6	21.9	65	95.4
18 INRA 200	(F)	80-85	94	nearly completely mature	624.3	23.4	146.3	99	48.7	7.4	10.8	20.8	66	96.6
19 KE 3	(A)	85-90	99	hard dough	720.2	20.3	146.1	99	42.3	7.9	11.5	22.8	64	93.5
20 Caldera 501	(A)	80-85	98	hard dough	645.5	22.5	145.3	99	46.3	6.7	9.7	22.7	65	94.4
21 C.B. 43	(A)	80-85	96	hard dough	531.2	23.1	145.5	99	45.0	7.8	10.8	22.3	65	94.6
22 Dekalb 40	(A)	90-95	104	milk to soft dough	711.2	20.4	145.4	99	37.4	7.8	11.3	24.6	63	91.6
23 C.I.V. 4	(C)	80-85	96	hard dough	690.0	21.0	144.8	98	46.4	7.6	11.0	21.4	65	94.1
24 Warwick 210	(C)	85-90	96	dough to hard dough	657.9	22.0	144.5	98	43.4	7.6	11.0	22.0	65	93.9
25 Warwick 260	(C)	85-90	99	dough	638.6	22.6	144.0	98	39.9	8.1	11.7	21.8	64	92.2
26 SM 60	(C)	80-85	93	hard dough	574.3	25.0	143.4	97	46.2	7.3	10.5	22.0	65	93.2
27 Goudster	C.I.V.	75-80	94	dough to hard dough	634.6	22.4	142.4	97	39.6	7.6	10.8	22.7	64	91.1

Year: 1958  
 Country: Netherlands  
 Location of experiment: Ede  
 Name of farmer: A.V. Voornst  
 Geographical position: 54° East, 52° North  
 Altitude above sea-level: 12 metres  
 Size of plot: 16.86 square metres (2.30 x 7.33)  
 Soil type: light sandy soil  
 Meteorological data: see table 1 and 2  
 Date of planting: April 22  
 Date of emergence: May 9

Date of harvest: September 24<sup>th</sup>  
 Rate of seeding: 12 plants per square metre  
 Damage by diseases: none  
 Damage by insects, rodents or birds: some fruitfly attack in the spring  
 Seasonal conditions, whether usual or abnormal: warm ripening period  
 Experimental design: 6 x 6 lattice  
 Number of replications: 3  
 Significant differences: LSD 0.05 = 15.2 ql/ha dry matter = 10.3 % of standard  
 LSD 0.01 = 20.3 ql/ha dry matter = 13.6 % of standard  
 Standard = 147.4 ql/ha of dry matter = average of all entries  
 Best adapted hybrids or maturity ratings: 75-90 days Relative Maturity

Table 5 continued

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Variety or strain	American maturity rating	Days to tasseling	% Erect plants	Maturity stage at harvest time	Yield Green matter ql/ha	Dry matter %	Yield dry matter ql/ha	Relative yield % of standard	% Bar of total dry matter	Digestible crude protein %	Digestible crude protein ql/ha	Crude fibre %	Starch equivalent %	Starch equivalent ql/ha
28 C.I.V. 6	80-85	96	60	dough to hard dough	711.3	20.0	142.1	96	39.3	7.0	9.9	22.0	64	90.9
29 Dekalb 44	90-95	109	100	soft dough	688.9	20.3	141.6	96	40.4	7.3	11.0	24.9	65	89.2
30 KF	85-90	100	45	dough to hard dough	651.9	21.3	138.8	94	39.9	7.3	10.1	22.9	65	87.4
31 Calera 401	80-85	96	95	hard dough	653.9	20.0	138.6	94	39.5	7.6	10.5	23.7	64	88.7
32 Dekalb 30	80-85	96	90	hard dough	589.4	26.2	138.7	94	46.1	7.2	10.0	23.1	65	90.2
33 KW 2	90-95	100	55	dough to hard dough	591.1	22.8	134.6	92	49.5	7.9	10.6	22.0	66	88.8
34 Warwick 155	85-90	100	60	dough to hard dough	581.5	23.8	133.8	91	50.4	7.4	9.9	21.1	66	88.3
35 C.I.V. 9	85-90	98	40	dough to hard dough	668.7	19.8	132.3	90	43.1	7.3	9.7	22.4	65	86.0
36 C.B. 437	70-75	90	80	completely mature	526.4	25.1	132.2	90	48.9	7.8	10.3	20.6	67	88.6

The conclusion of the range test is the following

5-1 & level: 1 > 30      1 > 33

2 > 33

3 > 35

Statistical analyses by H.J. Reinks