1916

Correlation of Certain Characters in Ears of Moody County White Dent Corn

Jens L. Bolland
South Dakota State University

CORRELATION OF CERTAIN CHARACTERS

- IN -

EARS OF MOODY COUNTY WHITE DENT CORN

A Thesis

Presented to the faculty of the

South Dakota State College

- of -

Agriculture and Mechanic Arts

for the Degree of

Master of Science (Agronomy)

- by -

Jens L. Bolland

June 7, 1916.

CORRELATION OF CHARACTERS IN EAR CORN

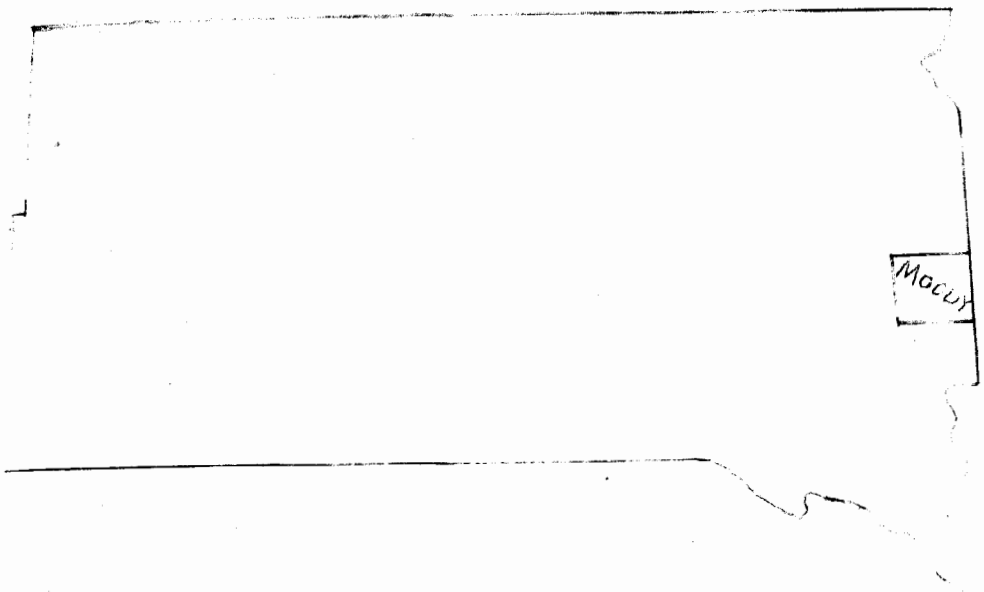
The idea has been prevalent that the most cylindrical ears of corn have the largest percentage of corn on them, and it has been the purpose of this study to determine the correlation coefficient between the degree of taper and the percentage of shelled corn on ears of Moody County White Dent.

History of Moody County White Dent

The history of Moody County White Dent was gotten mainly thru correspondence and personal interviews. The writer secured the corn with which he worked from Professor J. W. Wilson, Director of the South Dakota Experiment Station. This particular corn had been raised at Buckingham, Iowa, in the year 1915 from seed raised in South Dakota in 1914 and was to be used by Professor Wilson in feeding experiments.

Professor Wilson received his seed corn of this variety from Mr. J. A. Silvander of Elkton, (Moody County), South Dakota, three years ago. Mr. Silvander states in answer to an inquiry that he had raised this variety for five years and that he had gotten his original seed from Mr. Chas. Blandeneer of Elkton, South Dakota. Mr. Blandeneer in reply to the writer's letter states that he has raised Moody County White Dent for 18 years and that he had gotten his original seed from one of his neighbors. Mr. Blandeneer also states in his letter that at the time he got his first seed it was known as "King or something like that."

From the facts that this Moody County White Dent resembles Silver King very much and Mr. Blandeneer's statement that when he first got his seed it was known as "King or something like that," the writer is led to believe that the corn with which he worked was Silver King.



Outline map of South Dakota showing the location of Moody County, where Moody County White Dent has been grown for over 18 years.

Description

The corn with which the writer worked was white, quite smoothly dented and had a shelling percentage of 83. The kernels were of medium depth on a white cob.

Meaning of correlation

By correlation in plants or animals is meant the interrelation between separate characters by which they tend, in some degree at least, to move together. This relation is expressed in the form of a ratio, thus if an increase of one character is always followed by a corresponding and proportional increase in a related character, the correlation is said to be perfect and the ratio is 1. On the other hand if an increase in one character is followed by a corresponding and proportional decrease in a related character, the correlation is said to be negative and the ratio is -1, or perfect negative correlation. Again, if the characters in question are absolutely indifferent the one to the other, the correlation is said to be zero, indicating mere association without causative relation of any kind.

In corn as well as in any other living organism there is not necessarily a direct correlation between two characters, or a correlation coefficient of +1, or an absolute lack of correlation -1, or indifference 0, but the correlation coefficient may be between 0 and +1 or 0 and -1. Therefore we see that instead of being able to state that there is a direct positive or negative correlation between two characters, we can in most cases, only state to what degree the two characters are correlated.

If, for instance, we find a positive correlation coefficient of .12 when we compare the length and weight of ear corn, this would indicate that there was only 12 per cent of a perfect correlation between these two characters and that the correlation is of so small a degree, that we could not state that when the longest ears were selected they were also the heaviest.

Value of correlation studies

Correlation studies are valuable in that by this means one can ascertain the true relationship existing between different characters and thus have a definite guide in ones selection. They are of special value in that correlations are found between readily observable characters, such as taper of ears of corn, and characters which are not readily observable, such as the shelling percentage. So that if there was a perfect positive correlation between cylindrical ears and high shelling percentage all we would have to look for would be the cylindrical ear and be assured of a high shelling percentage.

Previous work on the correlation of different characters of ear corn

Considerable corn correlation work has been done but the writer wishes to confine his review to the correlations between different characters of ear corn.

Quantitative relationships have been determined by Davenport (3) in Leaming corn where he found a correlation of 0.87 ± 0.005 between weight and length in ear corn. He also found a correlation of 0.49 ± 0.02 between circumference and length of ear in inches.

Rietz and Smith (13) determined quantitative relationships between the following characters in Leaming ear corn:

1. Length and weight.
2. Circumference and weight.
3. Circumference and rows of kernels.
4. Length and circumference.
5. Weight and rows of kernels.
6. Length and rows of kernels.

They draw the following general conclusions, the correlations for length-weight and circumference-weight are high. The correlations for circumference-rows of kernels and length-circumference are fairly high. The correlation of weight-rows of kernels is low, while that of length-rows of kernels is probably insignificant.

The writer finds the following information with regard to correlation of different characters of ear corn in which the numerical coefficient has not been determined.

From his work with the Longfellow variety of corn Brigham (1) concludes that weight of corn is accompanied by an increase in the number of kernels, length of ears and weight of cob and also an increase in the weight of individual kernels.

From his data on Szekler Maize Fruwirth (6) concludes that with greater length of ear was correlated greater total weight of grain and greater weight of individual kernels, but also smaller thickness. Greater thickness of ear was correlated with smaller

percentage of grain and cob.

Thiel (9) found that the diameter of ear was correlated inversely with percentage of cob.

De Vries (10) found that breeding for a greater number of rows produced smaller kernels.

Hopkins, Smith and East (7) in studying physical and chemical characters in corn, conclude that high nitrogen content is correlated with a large proportion of corneous endosperm and high oil content with proportionately large embryo.

In determining the proportion of weight of grain to weight of cob Esterhaty (4) found no relationship between percentage of cob and other important characters.

Craig (2) found that there was a correlation between the relative amount of corneous endosperm present and the nitrogen content, similar to that of Hopkins, Smith and East.

Among other conclusions drawn by Mr. Craig were that ears producing grains which were medium to long in length and grains that were bright were the highest in nitrogen content and that cylindrical ears, smooth ears and selected ears of medium weight had the highest nitrogen content in the grain. He also found that heavy weight of grain and nitrogen content were correlated, as well as increase in the amount of ash and crude fibre together with the nitrogen content.

Hume, Champlin and Loomis (8) also report that high nitrogen content was correlated with a large proportion of corneous endosperm and high oil with a large embryo.

Little relation was found by Willard, Clothier and Weber (11) between specific gravity of kernels and nitrogen content.

The following recent experiments by Williams and Welton (12) are also of interest in this connection. They found that among

ears varying 2.44 inches in length the long ears led in yield by an average of 1.39 bushels per acre and conclude that such a difference is no greater than might have been expected had the seed used been identical.

From a nine year test they concluded that tapering ears have excelled cylindrical ears in yield by 1.65 bushels per acre. (This is of interest at this time since it tends to disprove the prevalent idea that the more cylindrical ears yield more, and from the writer's data given later the correlation between degree of taper of ears and shelling percentage is very small)

Williams and Welton also state that eight years of continuous selection of bare as compared with filled tips show an average difference of 0.34 bushels per acre in favor of filled tips.

Method of procedure

One thousand ears were taken from a pile of Moody County White Dent, no attempt being made at selection except to get ears that did not have any kernels knocked off from them. The diameter of the butt and tip ends of each ear were measured in millimeters, the measurements being taken 1 1/2 inches from the butt and tip ends.

The ears (corn and cob) were weighed and the weight recorded in grams with the exception of the first 258 ears which were recorded in ounces. The ears were then shelled and the weight of the cob alone was recorded.

Calculations

The degree of taper was gotten by dividing the diameter of the butt of the ear in millimeters by the diameter of the tip in millimeters. In other words if the diameter of the butt and tip were the same, the degree of taper would be represented by 1. If, however, the diameter of the tip was smaller than that of the

butt, the degree of taper would be greater than one. (Example, Butt 48 m. m. ÷ tip 40 m. m. = 1.2 degree of taper)

The percentage of shelled corn was gotten by subtracting the weight of the cob alone from the weight of the corn and cob and dividing this difference by the weight of the corn and cob.

The explanation of the method of finding the coefficient of correlation is rather long and if anybody wishes to study it in detail, it can be found in E. Davenport's book entitled "Principles of Breeding."

D A T A

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.)
1	44	34	1.29	5.5	1	81.8	7
2	44	36	1.22	6	0.75	87.5	6
3	46	34	1.35	5	1	80	7
4	44	36	1.22	7	1	85.7	7.5
5	44	36	1.22	6	1	83.3	7
6	44	34	1.29	6	1	83.3	8
7	42	32	1.31	5	1	80	6.5
8	50	36	1.39	7	1	85.7	7.5
9	46	32	1.43	7	1	85.7	8.5
10	42	32	1.31	4	0.5	87.5	6.5
11	46	34	1.35	4	0.75	81.2	7
12	40	32	1.25	6	1	83.3	7.5
13	44	36	1.22	5	1	80	7
14	50	36	1.38	8	1.25	84.3	8.5
15	48	38	1.26	8	1	87.5	7.5
16	46	36	1.27	6	1	83.3	7
17	40	32	1.25	4	0.75	81.2	7
18	44	36	1.22	5	1	80	6
19	50	40	1.25	6	0.75	87.5	7
20	46	36	1.27	6	1	83.3	7.5
21	48	40	1.2	5	1	80	6
22	48	36	1.33	6	0.75	87.5	7.5
23	46	36	1.27	7	0.75	89.2	6.5
24	46	36	1.27	6	0.75	87.5	6.5
25	44	32	1.37	4	0.5	87.5	6.5
26	46	40	1.15	5.5	0.75	86.3	6.5
27	46	36	1.27	6	0.75	87.5	7.5
28	52	44	1.18	6.5	0.75	88.4	6.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.)
29	38	32	1.18	4	0.5	87.5	6.5
30	46	42	1.09	6.5	1	84.6	7
31	46	34	1.35	6	1	83.3	8
32	48	42	1.14	6	0.75	87.5	6.5
33	46	38	1.21	6.5	0.75	88.4	7
34	52	44	1.18	8	1	87.5	7.5
35	46	34	1.35	5.5	1	81.8	8
36	56	44	1.27	6.5	0.75	88.4	6
37	48	42	1.14	6	0.75	87.5	6
38	46	36	1.27	6	1	83.3	7.5
39	42	36	1.16	5	1	80	6.5
40	44	34	1.29	4	0.75	81.2	6
41	46	42	1.09	4	0.5	87.5	5
42	40	34	1.17	4	0.75	81.2	6.5
43	52	40	1.3	7	1.25	82.1	8
44	50	40	1.25	6	1	83.3	7
45	46	34	1.35	4	0.75	81.2	6
46	48	38	1.26	8	1	87.5	8
47	46	40	1.10	6.5	1	84.6	8
48	44	32	1.37	5	0.75	85	7.5
49	50	42	1.19	6.5	1	84.6	7
50	52	44	1.18	6	1.25	79.9	7
51	42	34	1.23	4	0.5	87.5	7.5
52	46	38	1.21	6	0.75	87.5	7
53	44	38	1.16	6	1	83.3	7
54	44	38	1.16	5	0.75	85	7
55	44	32	1.37	4	0.5	87.5	6.5
56	48	36	1.33	8	1	87.5	7.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.)
57	46	40	1.10	6	0.75	87.5	7.5
58	46	36	1.28	4	0.5	87.5	5.5
59	44	34	1.29	5	1	80	7.5
60	40	36	1.11	4	0.5	87.5	6.5
61	46	38	1.21	6	1	83.3	7.5
62	46	36	1.28	5	1	80	7
63	44	36	1.22	4	0.75	81.2	6
64	42	34	1.23	6	1	83.3	7.5
65	40	38	1.05	5	0.75	85	7.5
66	44	32	1.37	5.5	1	81.8	9
67	46	38	1.21	6	0.75	87.5	7.5
68	50	40	1.25	8	1	87.5	8
69	46	36	1.28	5	0.75	85	7
70	44	34	1.29	5	0.5	90	6.5
71	52	46	1.13	7	1	85.7	7.5
72	44	36	1.22	5.5	1	81.8	7
73	42	38	1.10	5	1	80	7
74	44	38	1.16	4	0.75	81.2	8
75	46	36	1.28	4.5	0.75	83.3	8
76	44	36	1.22	5	0.75	85	7
77	48	40	1.2	7	1	85.7	7
78	46	38	1.21	5	0.75	85	6.5
79	42	38	1.10	4.5	1	77.7	7
80	44	36	1.22	5	0.5	90	7
81	52	46	1.13	6	1	83.3	6.5
82	48	40	1.2	6	1	83.3	7
83	46	38	1.21	5	0.75	85	6
84	54	44	1.22	6	1	83.3	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.)
85	48	38	1.26	5	1	80	7
86	46	44	1.04	6	1.25	79.1	6.5
87	44	34	1.29	5	0.75	85	7
88	42	36	1.16	5	0.5	90	7
89	48	38	1.26	6	1.25	79.1	7.5
90	44	36	1.22	6.5	1	84.6	8
91	46	40	1.10	5.5	0.75	86.3	6.5
92	48	36	1.33	5.5	1	81.8	7.5
93	50	38	1.31	5.5	1	81.8	6.5
94	44	34	1.29	5.5	1	81.8	8
95	52	42	1.24	8.5	1	88.2	8
96	50	40	1.25	7	1	85.7	6.5
97	44	36	1.22	6	1	83.3	8
98	44	34	1.29	5	0.75	85	7.5
99	52	44	1.18	8	1.25	84.3	7.5
100	44	38	1.16	5	1	80	7
101	48	40	1.2	6	1	83.3	6.5
102	48	40	1.2	6	1	83.3	8
103	50	40	1.25	7	0.75	89.2	7
104	46	42	1.09	4	0.5	87.5	5
105	44	38	1.16	5.5	1	81.8	7
106	50	44	1.13	6	0.75	87.5	6.5
107	44	34	1.29	4	1	75	7
108	44	40	1.1	6	1	83.3	7
109	46	38	1.21	5.5	1	81.8	7
110	50	40	1.25	5	0.75	81.3	6.5
111	44	38	1.16	6	1	83.3	7
112	46	38	1.21	5.5	0.75	86.3	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.
113	44	40	1.1	6	1	83.3	7
114	52	42	1.24	7	1	85.7	7.5
115	50	38	1.31	5.5	1	81.8	7.5
116	52	46	1.13	8	1.5	81.2	8
117	50	42	1.19	6	0.75	87.5	6
118	40	36	1.11	3.5	0.75	78.6	7
119	44	34	1.29	6	1	83.3	7.5
120	44	40	1.1	6	1	83.3	7
121	40	30	1.33	4	1	75	7
122	42	32	1.31	3.5	0.75	78.6	6
123	54	42	1.28	8.5	1.25	85.3	8
124	52	42	1.24	9	1.25	86	9
125	46	34	1.35	5.5	1	81.8	8
126	46	38	1.21	5.5	0.75	86.3	8
127	44	40	1.1	5	1	80	7
128	48	40	1.2	6.5	1	84.6	7
129	44	32	1.37	4	0.5	87.5	6
130	46	34	1.35	6	1	83.3	6
131	46	36	1.28	4	1	75	6.5
132	50	38	1.31	6	0.75	87.5	6
133	44	36	1.22	5.5	0.5	90	7
134	48	42	1.14	8	1	87.5	7.5
135	48	38	1.26	4	1	75	6.5
136	54	36	1.5	8.5	1.25	85.3	9
137	52	38	1.37	8	1	87.5	7.5
138	50	40	1.25	7	1	85.7	8
139	44	36	1.22	5	0.75	85	7.5
140	46	40	1.10	6	1	83.3	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.)
141	46	40	1.10	4	1	75	6
142	48	40	1.2	6.5	1	84.6	6.5
143	44	32	1.37	4	1	75	7
144	42	36	1.16	6	1	83.3	8.5
145	44	36	1.22	4	0.75	81.2	6.5
146	50	42	1.19	4.5	0.75	83.3	6
147	40	34	1.17	4	0.75	81.2	6.5
148	46	38	1.21	4	1	75	6
149	44	36	1.22	4	0.75	81.2	5
150	46	38	1.21	6	1.25	79.1	7.5
151	50	38	1.31	6	1	83.3	7
152	40	34	1.17	4.5	0.75	83.3	7
153	44	38	1.16	5.5	1	81.8	7
154	46	38	1.21	6	1	83.3	7
155	44	40	1.1	6	1	83.3	7
156	48	36	1.33	5.5	1	81.8	7
157	50	40	1.25	7.5	1	86.6	8
158	54	48	1.12	8.5	1.75	79.4	7
159	46	40	1.10	7.5	1	86.6	8
160	46	40	1.10	6.5	0.75	88.4	8
161	40	36	1.11	4.5	1	77.7	6.5
162	48	40	1.2	5.5	0.75	86.3	7
163	50	42	1.19	5.5	0.75	86.3	7
164	52	40	1.3	8.5	1.25	85.3	8
165	50	40	1.25	7	1.25	82.1	7
166	46	40	1.10	6	1	83.3	7
167	50	44	1.13	7	1.5	78.5	8
168	52	44	1.18	8	1.25	84.3	8

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage .	Length of ear (in.)
169	42	32	1.31	5.5	0.75	86.3	8.5
170	48	40	1.2	6.5	1	84.6	7
171	42	36	1.16	6.5	1.5	77	8.5
172	46	40	1.10	8.5	1.25	85.3	8
173	50	40	1.25	6.5	1	84.6	7.5
174	42	34	1.23	4	1	75	6.5
175	46	36	1.28	5	1	80	6.5
176	46	42	1.09	6	1	83.3	7
177	50	38	1.31	5.5	1	81.8	8
178	56	52	1.07	8	1.25	84.3	6
179	48	40	1.2	7	1.25	82.1	7.5
180	42	34	1.23	4	1	75	6.5
181	42	36	1.16	4.25	0.75	82.3	6.5
182	42	34	1.23	3.5	0.75	78.5	6
183	52	44	1.18	5	1.25	75	6
184	50	38	1.31	5.5	1	81.8	6.5
185	44	38	1.16	5.5	1	81.8	7
186	42	38	1.10	5	0.5	90	5.5
187	44	38	1.16	5	1	80	7
188	48	42	1.14	7.5	1.25	83.3	8
189	52	44	1.18	6	1	83.3	6
190	46	38	1.21	5	0.75	85	7
191	42	36	1.16	5	0.5	90	6
192	50	40	1.25	6	1	83.3	7
193	46	36	1.28	5	1	80	6.5
194	46	40	1.10	6	1	83.3	7
195	46	38	1.21	7	1.25	82.1	7.5
196	44	40	1.1	6	1	83.3	8

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.)
197	46	36	1.28	6	1	83.3	7
198	46	42	1.09	5.5	0.75	86.3	7
199	44	36	1.22	6.5	1	84.6	9
200	48	40	1.2	5.5	0.75	86.3	6.5
201	50	46	1.09	6.5	1	84.6	7
202	42	38	1.10	5.5	0.5	90.9	6.5
203	46	38	1.21	5	1	80	8
204	42	34	1.23	5	0.75	85	7.5
205	50	46	1.09	7.75	1.25	83.8	7.5
206	48	44	1.09	5.5	1	81.8	7
207	46	40	1.10	6	1	83.3	7.5
208	50	40	1.25	7	1.25	82.1	7.5
209	48	44	1.09	6	1	83.3	6.5
210	54	46	1.17	6.5	1.5	77	7.5
211	46	38	1.21	6	0.75	87.5	7.5
212	54	52	1.04	7	1.75	75	6
213	46	36	1.28	4.25	0.5	88.2	6.5
214	48	38	1.26	5	1	80	6.5
215	46	36	1.28	5	1.25	75	7.5
216	48	44	1.09	6	0.75	87.5	7
217	48	42	1.14	6	0.75	87.5	7
218	42	36	1.16	6	1	83.3	7.5
219	40	34	1.17	3	0.5	83.3	5
220	44	38	1.16	5	0.75	85	6
221	44	36	1.22	5.5	0.5	90.9	7
222	48	42	1.14	7.5	1.25	83.3	8
223	48	40	1.2	6	1	83.3	6.5
224	48	40	1.2	6.75	0.75	88.8	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.)
225	46	40	1.10	6	1	83.3	7
226	46	36	1.28	5.5	1	81.8	8
227	46	40	1.10	5.5	0.75	86.3	6.5
228	44	38	1.16	5.5	0.75	86.3	6.5
229	48	40	1.2	7	1.25	82.1	8
230	44	42	1.05	4.5	1	77.7	6
231	50	40	1.25	6.5	1	84.6	7.5
232	48	40	1.2	5	0.75	85	6
233	50	40	1.25	5	0.75	85	6.5
234	46	40	1.10	6	0.75	87.5	6.5
235	46	40	1.10	6	1	83.3	7.5
236	44	34	1.29	5	1.25	75	7
237	44	38	1.16	5	0.75	85	6.5
238	36	30	1.2	2.25	0.25	88.8	5
239	44	40	1.1	6	1	83.3	7.5
240	48	42	1.14	6.5	1.25	80.7	6.5
241	38	34	1.11	4.25	0.75	82.3	7
242	46	38	1.2	5	0.75	85	7
243	44	38	1.16	4.25	0.5	88.2	6.5
244	38	32	1.18	4	1	75	7
245	40	38	1.05	5	0.75	85	6.5
246	46	40	1.10	6	0.75	87.5	8
247	46	40	1.10	7	1	85.7	8
248	48	44	1.09	7.5	1.25	83.3	8.5
249	48	40	1.2	6	1	83.3	8
250	46	36	1.28	5	0.75	85	6.5
251	42	34	1.23	6	1	83.3	8
252	50	42	1.19	6.5	1	84.6	7.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (oz.)	Weight of cob (oz.)	Shelling percentage	Length of ear (in.)
253	48	42	1.14	4.5	0.75	83.3	6
254	46	38	1.21	6	0.75	87.5	8
255	50	40	1.25	6.5	1	84.6	7.5
256	46	42	1.09	6	1	83.3	7
257	44	36	1.22	3.5	0.5	85.7	6.5
258	48	38	1.26	7 (gm.)	1 (gm.)	85.7	8
259	52	46	1.13	231	37.4	83.7	7.5
260	42	34	1.23	176.5	29.5	83.2	7.5
261	46	38	1.21	166.5	25.1	84.9	7
262	46	34	1.35	178.7	34	80.8	7.5
263	40	36	1.11	98.2	20.4	79.2	6
264	46	38	1.21	140.5	20	85.7	6.5
265	46	42	1.09	153.9	26.2	82.9	5
266	50	44	1.13	230	43.8	80.9	7.5
267	46	38	1.21	163.3	28.6	82.4	6.5
268	50	42	1.19	171	27.4	83.9	6.5
269	44	34	1.29	90.4	18.4	79.6	6
270	44	34	1.29	127.1	26.8	78.8	6
271	48	42	1.14	168	27.3	83.7	7
272	46	40	1.10	144	33.8	76.5	7
273	48	36	1.33	132.5	22.6	82.9	6.5
274	44	38	1.16	131.7	22.8	82.7	6.5
275	42	34	1.23	127.7	23.5	81.6	6.5
276	46	36	1.28	140	21.5	84	6.5
277	40	34	1.17	148.6	26.4	82.2	7.5
278	48	42	1.14	170	24.5	85.5	6.5
279	48	38	1.26	199.5	21	89.4	7.5
280	40	34	1.17	94.7	15.1	84	6

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
281	46	38	1.21	146.9	20.5	79.2	6
282	42	38	1.10	155.8	27.8	82.1	7.5
283	48	40	1.2	233	30	87.1	8
284	44	36	1.22	142.2	20	85.9	7
285	48	38	1.26	218.6	40	81.7	8.5
286	46	38	1.21	173.3	32.3	81.3	7
287	50	40	1.25	247.2	40.6	83.5	8.5
288	52	46	1.13	247.4	46.6	81.2	7
289	44	34	1.29	151.6	21	86.1	6.5
290	52	46	1.13	243.3	48.7	80	8
291	44	34	1.29	158.6	28.8	81.2	7.5
292	42	36	1.16	119.3	21.3	82.2	6
293	46	38	1.21	157.8	30.2	80.8	7.5
294	46	38	1.21	156.4	22.4	85.4	6.5
295	50	40	1.25	197.7	30.6	84.5	6.5
296	46	38	1.21	151.4	23.5	84.4	6.5
297	44	40	1.1	159.7	35.5	77.7	6.5
298	42	36	1.16	166.2	27	83.7	7
299	50	44	1.13	161.9	21	87	5
300	52	42	1.24	185.8	33.5	82	6
301	40	32	1.22	108.7	17.5	84	7.5
302	46	44	1.04	126	23.8	81.1	6.5
303	44	40	1.1	187.4	25.8	86.2	7.5
304	52	44	1.18	183	30.8	83.1	6.5
305	46	38	1.21	212.6	34.7	83.7	7
306	44	38	1.16	162	22.5	86.1	7
307	42	36	1.16	120.6	22	81.7	7
308	44	38	1.16	125.7	26.3	79	6

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
309	50	44	1.13	148	21	85.9	6
310	52	44	1.18	266	45.4	82.9	8.5
311	46	40	1.10	149.2	25.7	82.7	6
312	46	38	1.21	153.3	26.6	82.6	6.5
313	38	32	1.18	156	22	85.9	8
314	52	42	1.24	186.6	29.8	84	7
315	40	36	1.11	119.2	16.2	86.4	6.5
316	40	34	1.17	146.5	25.1	83	7
317	50	40	1.25	187.6	43.4	76.8	6
318	42	34	1.23	160	33	80	8
319	46	38	1.21	155.7	27.5	82.3	6.5
320	40	36	1.11	142.5	18.6	86.9	6.5
321	46	38	1.21	212.4	22.3	89.5	8
322	38	32	1.26	101	18.3	81.8	6.5
323	46	40	1.10	201	37.5	81.3	7
324	40	34	1.17	137.5	21	84	7.5
325	46	36	1.28	180.3	42.3	76.5	7
326	52	42	1.24	226	44.4	80.2	7
327	44	38	1.16	173	26	84.9	6.5
328	40	36	1.11	170.4	27	84	7.5
329	44	36	1.22	154.3	29	81.2	7
330	46	38	1.21	170	24	85.8	7.5
331	48	44	1.09	191.7	27.5	85.6	6.5
332	48	38	1.26	135	33.5	75.1	6.5
333	48	40	1.2	183.2	30	83.6	7
334	44	36	1.22	144.3	21.3	85.2	7
335	46	38	1.21	123.7	17.7	86.5	5
336	50	42	1.19	263	35.1	86.6	8

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
337	46	36	1.28	188.3	34	81.9	7.5
338	48	42	1.14	193	23.1	88	5.5
339	52	44	1.18	217	39.2	81.9	7
340	42	36	1.16	148	20	86.4	7
341	42	36	1.16	136	25	81.6	6
342	42	38	1.10	120.7	22.4	81.4	7
343	52	44	1.18	187	27.4	85.3	6.5
344	44	38	1.16	186.8	24.2	87	7.5
345	50	42	1.19	168	20.4	86.6	6
346	48	44	1.09	228.5	40.3	82.3	7.5
347	50	46	1.09	208.4	38.7	81.4	7
348	46	40	1.10	166.2	31	80.7	7
349	44	36	1.22	201.8	35	82.6	8
350	46	36	1.28	170.7	24.2	85.8	7
351	44	38	1.16	163.3	28	82.8	7.5
352	50	40	1.25	169.8	27.4	83.8	7
353	44	38	1.16	160.7	29.4	81.7	7
354	44	36	1.22	181	28	84.5	8
355	52	46	1.13	233.6	32.5	86.8	7
356	44	36	1.22	177.5	28.2	83.9	7
357	42	36	1.16	134.9	19	85.9	6
358	43	38	1.13	127.8	21	83.7	6
359	52	42	1.24	134.4	36	73.2	7.5
360	48	36	1.28	179.7	27.3	84.8	8
361	44	36	1.22	151.7	17	88.7	7
362	48	36	1.33	212.8	35	83.5	8
363	46	40	1.10	221.7	37.9	82.9	8.5
364	48	40	1.2	265	45.6	82.7	8

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
365	50	44	1.13	255	35	86.2	7.5
366	50	40	1.25	174	25.2	81.5	6.5
367	50	44	1.13	233	32.7	85.9	7
368	46	44	1.04	167.6	18.5	89.8	6
369	44	36	1.22	144.8	22.3	84.6	7
370	42	36	1.16	92	17.3	81.1	5
371	42	38	1.10	155	31.4	79.7	7
372	44	34	1.29	146	23.2	84.1	7
373	46	38	1.21	208.5	48.4	76.7	8
374	38	34	1.11	80.7	14.5	82	5
375	44	40	1.1	203	26.5	86.9	7.5
376	46	38	1.21	143	22.4	83.6	6
377	44	38	1.16	222	39.5	82.2	8
378	42	38	1.10	133	27.2	79.5	6
379	52	42	1.24	230	28.7	87.5	7.5
380	50	40	1.25	192	26.8	86	7
381	42	36	1.16	139	23.6	83	7
382	40	36	1.11	109.3	15.6	85.6	5.5
383	44	36	1.22	142	20	85.9	6
384	50	38	1.31	203.5	31.2	84.6	7
385	46	40	1.10	183	37.6	79.4	8
386	48	40	1.2	218	36.4	83.3	7
387	44	36	1.22	199	30.8	84.5	7
388	42	38	1.10	143	23.5	83.5	6
389	46	40	1.10	198	32.6	83.5	7.5
390	46	40	1.10	214.3	35	84.6	7.5
391	38	34	1.11	118	16.7	85.8	6
392	44	34	1.29	167.2	19.4	88.3	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ea (in.
393	42	36	1.16	100	18.3	81.7	55
394	42	36	1.16	137	27.8	80	65
395	44	36	1.22	170	23	86.4	7.5
396	44	38	1.16	158.3	24.1	84.7	7
397	42	36	1.16	146.3	28.7	80.3	7
398	46	40	1.10	233.2	25	89.1	8
399	44	40	1.1	158	26.2	83.2	7
400	42	36	1.16	165.3	23.3	86.5	7
401	42	36	1.16	130	20	84.6	7
402	44	38	1.16	174	28.5	83.6	7
403	48	40	1.2	177	29.4	83.3	8
404	42	38	1.10	175	26	85.1	7.5
405	44	36	1.22	199.5	26.5	86.8	8
406	46	40	1.10	200.3	29.8	84.9	7
407	44	34	1.29	131.2	18	86.2	6.5
408	42	36	1.16	168.1	22.5	86.5	7.5
409	40	36	1.11	146.5	21.2	85.5	7
410	38	34	1.11	131.5	20.7	84.2	7
411	46	38	1.21	190.4	28.6	84.9	7
412	40	34	1.17	143.	20.2	85.8	7.5
413	44	38	1.16	115	26.2	77.2	5
414	50	44	1.13	192	33.4	82.7	7
415	46	44	1.04	140.3	21	85	5.5
416	38	32	1.18	116.4	19.3	83.4	7
417	44	36	1.22	188.5	26.4	87	8
418	54	44	1.22	208.3	31	85.1	7
419	44	38	1.16	171	26	84.8	7
420	42	38	1.10	169.2	26.4	84.2	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
421	52	42	1.24	185.2	27	85.4	6.5
422	48	42	1.14	192.3	29	84.8	7
423	52	44	1.18	192.5	27.8	85.5	7
424	56	50	1.12	222.2	50	77.4	6
425	46	38	1.21	136.7	14.7	88.5	7
426	50	44	1.13	236.2	29	87.7	8
427	40	36	1.11	151	23.6	84.3	7
428	46	40	1.10	194.3	33	83	8
429	44	36	1.22	129.1	21.4	83.4	7
430	46	38	1.21	165	29.3	82.2	7.5
431	50	42	1.19	131.5	21.3	83.8	5
432	46	36	1.28	115.6	25.5	84.5	7.5
433	48	40	1.2	178	30.4	84	6.5
434	44	36	1.22	156.5	24.6	84.2	7.5
435	42	38	1.10	173.1	34	80.3	7
436	44	38	1.16	197.3	26.2	81.6	8
437	44	36	1.22	151.2	23.3	84.5	7
438	40	36	1.11	160.3	23.1	85.5	7
439	44	36	1.22	164.3	20.2	87.7	7
440	46	38	1.21	133	13.8	89.6	6
441	48	38	1.26	172.5	29.3	83	6.5
442	44	38	1.16	166.1	23	86.1	6.5
443	50	40	1.25	163.5	21.3	86.8	6.5
444	44	38	1.16	195.3	27.4	85.9	7.5
445	48	40	1.2	165.7	26.6	83.9	7
446	46	40	1.10	201	24.5	87.8	7
447	46	38	1.21	197.3	33	83.2	8.5
448	44	38	1.16	178.1	32	82	7.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
449	46	40	1.10	143.2	22.7	84	6
450	44	34	1.29	188	36.8	80.4	8
451	38	32	1.18	114	17.7	84.4	6.5
452	46	42	1.09	195	34.6	82.2	7
453	42	38	1.10	110.5	25.8	76.6	6
454	46	40	1.10	137.9	21.5	84.4	6.5
455	48	40	1.2	209.3	33.3	84	6.5
456	50	40	1.25	234.8	31.7	86.5	7.5
457	46	38	1.21	187.2	33.6	82	7.5
458	48	40	1.2	179.1	26	85.4	6.5
459	46	40	1.10	156.2	28.2	81.9	6.5
460	46	40	1.10	204.3	29.7	85.4	8
461	46	42	1.09	195.2	24	87.7	6.5
462	46	40	1.10	161.2	19.5	87.9	6
463	44	34	1.29	127.3	22.3	82.4	6
464	54	38	1.42	240.8	45.2	80.9	8
465	44	40	1.1	129.8	24.7	80.9	7.5
466	46	38	1.21	144.1	29.2	79.7	6.5
467	46	44	1.04	144.5	23.3	83.8	5.5
468	44	36	1.22	175.5	31	82.3	7
469	44	38	1.16	154.5	20	87	7
470	48	38	1.28	198	40.9	79.3	8
471	46	34	1.35	132.8	19.2	84.7	6.5
472	50	40	1.25	212	31	90	7
473	48	38	1.26	193.2	32	83.4	7.5
474	42	36	1.16	147.5	21.4	85.4	7.5
475	42	38	1.10	149.5	21	85.9	7
476	44	38	1.16	142.8	24.9	82.5	6.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
477	42	34	1.23	128.9	20.4	84.1	7
478	52	40	1.3	195.7	36	81.6	7
479	52	44	1.18	176.3	24.7	87.1	6.5
480	44	36	1.22	156.6	27	82.7	6
481	38	34	1.11	131	20.8	77.5	7
482	42	36	1.16	146.2	27.2	81.3	7.5
483	48	40	1.2	163.4	26.9	83.5	6.5
484	44	36	1.22	151.7	27.6	81.8	7
485	44	38	1.16	172.3	26.1	84.8	7
486	46	38	1.21	168.9	25.5	84.8	6.5
487	46	40	1.10	167.7	17.3	89.6	6
488	46	40	1.10	141.3	22.8	83.5	6.5
489	46	36	1.28	187.2	27.4	85.3	7.5
490	50	44	1.18	190.1	23.7	82.2	6.5
491	48	40	1.2	254.6	42.7	83.2	8.5
492	46	36	1.28	220.1	35	84	8
493	42	36	1.16	159.7	23.8	84.4	8
494	46	38	1.21	169.2	27.9	83.5	6
495	46	34	1.35	156.1	30.3	80.6	7.5
496	50	40	1.25	228.1	33.3	85.4	7.5
497	46	40	1.10	197	40.5	79.4	7.5
498	50	44	1.13	231.8	34.3	85.2	7
499	40	36	1.11	146.2	19	87	6.5
500	46	38	1.21	154.3	25.3	83.6	6.5
501	42	40	1.05	149	22	85.3	6
502	42	36	1.16	116.3	19.4	83.3	6
503	46	38	1.21	202.7	34	83.2	7.5
504	44	40	1.1	153.1	27.7	81.9	6.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
505	44	38	1.16	144.3	17.4	87.1	6.5
506	52	48	1.08	228.8	4916	78.2	7.5
507	48	40	1.2	207.5	31.7	84.7	7
508	50	44	1.13	269.5	52.5	80.5	8
509	46	36	1.28	176.8	26	85.5	7
510	42	34	1.23	157.7	24	84.7	7.5
511	54	44	1.22	145.5	26.1	82.7	6
512	50	44	1.13	231.2	42.3	81.7	7
513	52	46	1.13	264.5	52.6	80.1	8
514	44	34	1.29	137.2	21	84.6	7.5
515	46	40	1.10	197.5	27	85.8	7
516	44	38	1.16	170.2	23.5	86.2	8
517	50	44	1.13	200.5	32.5	83.7	7
518	40	38	1.05	189.3	41	78.3	9.5
519	50	44	1.13	220	39.6	82	7.5
520	48	42	1.14	171.5	21.8	87.2	6
521	50	44	1.13	142.7	21.2	85.1	6
522	48	44	1.09	204.3	29.2	85.7	7.5
523	46	46	1	157.2	24.9	84.1	5.5
524	44	36	1.22	140.3	19.8	85.8	6.5
525	42	38	1.10	200.9	36	82	8.5
526	48	40	1.2	209.4	30.9	85.2	6.5
527	46	40	1.10	137	21	85.2	6
528	42	34	1.23	156.3	23	85.2	7
529	46	38	1.21	190	26.6	86	7
530	48	40	1.2	174.2	32.1	81.5	6.5
531	44	38	1.16	149.1	36.5	75.5	8
532	48	40	1.2	204.3	32.8	83.9	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
533	42	38	1.10	197.5	30.4	84.5	7
534	46	40	1.10	172.1	34.5	80	7.5
535	40	34	1.17	167.9	24.8	85.2	7
536	50	42	1.19	213.2	30	85.9	7
537	46	38	1.21	144.5	30.4	78.9	6.5
538	46	38	1.21	150	20	86.6	6
539	44	36	1.22	157	21.8	86.1	7
540	42	36	1.16	170.3	26.4	84.4	7
541	52	40	1.3	271	47.5	82.4	8
542	48	44	1.09	218.5	31	85.8	7.5
543	48	38	1.28	212.9	39.3	81.5	7.5
544	48	42	1.14	216.8	34.2	84.2	8
545	42	38	1.10	122.3	19.3	84.2	5
546	44	36	1.22	155.5	28.2	81.2	7.5
547	44	34	1.29	133.1	22	83.6	7.5
548	50	40	1.25	185.3	27	85.4	6.5
549	48	42	1.14	239.8	34.5	85.7	8
550	42	34	1.23	204.2	28	86.2	7
551	44	36	1.22	160	30.4	81	8
552	46	36	1.28	162	32.7	80	8
553	44	38	1.16	145	18.3	87.3	6
554	42	40	1.05	170	32.5	81	7.5
555	46	40	1.10	181.3	27.8	84.6	7
556	42	38	1.10	153	18.4	88	6.5
557	42	36	1.16	212.8	28.7	86.5	8
558	44	40	1.1	175	28.2	83.9	7
559	46	38	1.21	255	44	82.7	8.5
560	44	38	1.16	232	41	82.3	8

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
561	46	36	1.28	176	36	79.5	8.5
562	42	38	1.10	169	21.7	87.2	6.5
563	42	38	1.10	182	30.7	83.1	7.5
564	46	36	1.28	168	21.1	87.4	7.5
565	52	42	1.24	259	47	81.8	8
566	48	42	1.14	261	45	82.7	8
567	42	34	1.23	174	36.7	78.9	7.5
568	44	36	1.22	151	22.7	84.9	6.5
569	40	36	1.11	157.5	26	83.4	7.5
570	46	40	1.10	221.7	28.5	87.1	8
571	44	38	1.16	177.5	31.9	82.2	7.5
572	46	36	1.28	168	42	75	8.5
573	40	34	1.17	146.7	28.2	80.7	7
574	46	36	1.28	172.5	28.4	83.5	7
575	44	40	1.1	173.3	37.8	78.2	7.5
576	42	34	1.23	125.3	19	84.8	6
577	46	34	1.35	243.5	27.8	88.5	8.5
578	40	34	1.17	157	25.4	83.8	7
579	44.	38	1.16	124	22.9	81.5	5.5
580	38	30	1.26	114	18	84.2	6.5
581	46	38	1.21	199	31.3	84.2	6.5
582	48	38	1.26	199	31.8	84	7
583	50	40	1.25	199	30.5	84.6	7.5
584	44	36	1.22	141.6	24	83	6
585	52	42	1.24	240.5	43	82.1	7.5
586	44	36	1.22	185.4	32.5	82.4	8
587	46	40	1.10	214.5	43	80	7.5
588	40	32	1.22	189.5	28.7	84.8	8.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
589	42	34	1.23	149	21	85.9	7.5
590	42	36	1.16	169.8	24.2	85.7	7.5
591	46	40	1.10	189.5	39.4	79.2	6
592	48	40	1.2	194.8	28.3	85.4	6.5
593	38	32	1.18	148.2	23	85.1	7.5
594	48	40	1.2	198.3	27	86.3	6.5
595	48	42	1.14	165.5	26.4	84	6.5
596	48	36	1.33	218.9	30	86.3	8
597	46	36	1.28	221.3	38.2	82.2	9
598	42	36	1.16	168.2	24.6	85.3	7.5
599	50	42	1.19	218.1	33.5	84.6	7
600	44	34	1.29	142.5	22	84.3	6.5
601	38	36	1.05	142.8	30.3	79	7
602	40	34	1.17	101	20.4	79.8	5.5
603	48	42	1.14	193.8	35.5	81.6	7
604	48	36	1.33	173.5	24.2	86	7.5
605	44	40	1.1	175.8	26.2	85	6
606	50	42	1.19	160	22.8	85.7	6
607	44	38	1.16	177.8	27.2	84.7	6.5
608	48	42	1.14	164.2	26.5	83.9	6
609	46	40	1.10	173	24	86.1	6
610	40	36	1.11	128.3	16.4	87.2	6
611	44	40	1.1	211	28.5	86.4	8
612	38	3r	1.11	177	18.2	89.7	5.5
613	46	40	1.10	162	34.5	79.3	6
614	42	36	1.16	171.2	29.3	82.8	7.5
615	42	36	1.16	207.5	36	82.6	8
616	48	44	1.09	194.3	33.4	82.8	7.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
617	40	34	1.17	100	14	86	6.5
618	40	32	1.22	144.8	22.2	84.6	7.5
619	40	36	1.11	160	32.5	79.6	7
620	42	34	1.23	150.3	28.1	80	6.5
621	52	42	1.24	267.5	40	84.8	8
622	46	38	1.21	182.5	23.2	86.2	7
623	44	36	1.22	165.3	26.8	83.7	7
624	40	34	1.17	128.2	22.3	82.5	7
625	50	40	1.25	186.2	30.5	83.6	6.5
626	42	38	1.10	169	24.8	85.3	7.5
627	46	44	1.04	208.3	31.7	84.7	7.5
628	44	34	1.29	186.5	35.8	80.8	8
629	40	34	1.17	158.3	28	82.3	7
630	50	42	1.19	265	32	87.6	8
631.	48	40	1.2	197.3	35	82.2	7
632	48	42	1.14	253	41.7	83.5	8.5
633	46	44	1.04	176	25.3	85.6	6
634	42	36	1.16	153	34.8	77.2	7
635	52	44	1.18	203	31.3	84.5	7
636	44	32	1.37	100	14.5	85.5	5
637	40	32	1.22	137.5	23	83.2	7
638	48	42	1.14	173	22.8	86.8	7
639	48	40	1.2	193	32.5	83.1	7
640	46	40	1.10	186.7	30.3	83.7	7.5
641	46	40	1.10	173.8	37.6	78.3	7
642	42	38	1.10	154.2	22.2	85.6	6.5
643	48	44	1.09	217.8	41	81.1	7.5
644	44	36	1.22	179	23.5	86.8	8

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.
645	46	40	1.10	125.5	21	83.2	5
646	40	36	1.11	153	28.5	81.3	7
647	48	40	1.2	225.5	36	84	8.5
648	50	42	1.19	154.5	37.7	75.6	6.5
649	50	38	1.31	208.5	32.6	84.3	7
650	42	36	1.16	200	33	83.5	8
651	46	36	1.28	171	37.8	78	7.5
652	46	40	1.10	200	34	80.3	8
653	44	42	1.05	194.5	28	84.5	7.5
654	46	40	1.10	196.6	26.2	81.5	8
655	46	36	1.28	149.5	23.4	84.3	7
656	46	34	1.35	218.7	50	77.1	8
657	42	34	1.23	213.6	33.6	84.2	8.5
658	38	34	1.11	156	29.5	81	7.5
659	44	36	1.22	172.5	27.5	84	7
660	44	38	1.16	146	25	82.8	6.5
661	44	36	1.22	121.3	18	85.1	5.5
662	42	36	1.16	86.3	17.9	79.2	4.5
663	36	32	1.12	105.3	208	80.2	6.5
664	44	36	1.22	112	12.2	89.1	5.5
665	42	36	1.16	163	20	87.7	6.5
666	42	36	1.16	128.5	21.4	82.5	5.5
667	46	40	1.10	166.8	27	83.8	6
668	46	38	1.21	155.5	25.6	83.5	6.5
669	42	34	1.23	184	29	84.2	7.5
670	38	34	1.11	119.7	23.4	80.4	7.5
671	42	34	1.23	158.2	23.3	85.2	7.5
672	40	34	1.17	142.3	21.7	84.7	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
673	48	40	1.2	166.5	28.6	82.8	6.5
674	44	38	1.16	196.7	27.3	86.1	7.5
675	50	44	1.13	256	36.3	85.8	8
676	46	42	1.09	224.6	38.5	82.8	8.5
677	46	46	1	180	29.2	83.7	5.5
678	42	34	1.23	123.6	28.8	76.7	6.5
679	42	34	1.23	175.5	20.8	88.1	7
680	38	32	1.18	128.5	21.2	83.4	8
681	40	36	1.11	182	31	83	8
682	44	36	1.22	140.6	21.3	84.1	5.5
683	40	36	1.11	133.8	22.5	83.1	7
684	50	40	1.25	205.7	35.3	87.7	7.5
685	46	36	1.28	175.8	30	82.9	8
686	50	40	1.25	211.7	36	82.9	7
687	46	40	1.10	168.9	39	76.9	7.5
688	46	38	1.21	151	21	86.7	7
689	44	38	1.16	155.5	23	85.2	5.5
690	44	34	1.29	168.5	33	80.4	7.5
691	40	36	1.11	122	26	78.6	7.5
692	44	38	1.16	121.7	20	83.5	6
693	46	40	1.10	198.1	32.7	89.5	6.5
694	48	38	1.26	252	38	84.9	8
695	42	34	1.23	147.7	27	74.9	7
696	44	36	1.22	151.5	31	79.4	7
697	44	36	1.22	203.5	25.5	87.4	8.5
698	42	32	1.31	172	26.2	84.8	8.5
699	50	44	1.13	194	27	86	7
700	46	40	1.10	197	29	85.2	7.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
701	40	34	1.17	132.5	19	85.6	6.5
702	50	46	1.09	148	38.3	74.1	7.5
703	46	40	1.10	204	33	83.8	7
704	46	42	1.09	161	24.5	84.7	7
705	44	36	1.22	160	28.4	82.2	7
706	46	40	1.10	183.3	26.4	85.5	6,5
707	50	42	1.19	212.5	35	83.5	7.5
708	46	38	1.21	200	37.7	81.1	7.5
709	40	40	1	170	34	80	7.5
710	48	36	1.33	191	33.3	82.5	7
711	50	42	1.19	228	37	83.7	8
712	38	34	1.11	138.5	19	86.2	7.5
713	44	38	1.16	154	28.6	81.4	8
714	50	42	1.19	236.4	38.5	83.7	7.5
715	44	38	1.16	149	25.5	82.8	6.5
716	40	34	1.17	130	21.3	83.6	7.5
717	52	44	1.18	242	30	87.6	7.5
718	52	48	1.08	213	33	84.5	6.5
719	44	40	1.1	142	19.5	86.2	5.5
720	42	36	1.16	102.7	17.4	83	6
721	40	36	1.11	136	27	80	6.5
722	48	42	1.14	178.5	35	80.3	6
723	46	40	1.10	159	35.6	77.5	6.5
724	44	36	1.22	157.5	34.7	77.8	7.5
725	42	34	1.23	138	20	85.5	7
726	46	36	1.28	153.5	25	83.7	7
727	44	38	1.16	145	28	80.6	7
728	48	42	1.14	144	23	84	6

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
729	50	40	1.25	127	25.5	79.4	6
730	50	46	1.13	185	36.4	80.4	6.5
731	46	38	1.21	181	28.5	84.2	8
732	46	40	1.10	209	36	82.7	8
733	44	36	1.22	145.3	19	86.9	6
734	46	36	1.28	192.5	32	83.3	8
735	38	36	1.05	167.6	27	83.8	7.5
736	44	40	1.1	172	27	84.3	7.5
737	48	38	1.26	187.3	27	85.5	7
738	44	40	1.1	231.5	36.3	84.3	8.5
739	46	38	1.21	219.7	28.5	87	8.5
740	52	40	1.3	230.5	34	85.2	7
741	42	34	1.23	136	22.7	83.3	7
742	48	40	1.2	190	21	88.9	7.5
743	46	40	1.10	186	36	80.6	8
744	42	34	1.23	175.5	26	85.2	9
745	44	38	1.16	162.8	22.5	86.1	7
746	50	44	1.13	208.5	36.5	82.4	7
747	46	38	1.21	198.8	34.5	82.6	8
748	46	40	1.10	176	27.5	84.3	7.5
749	46	38	1.21	193.6	28.7	85.1	8
750	46	38	1.21	184	27.2	85.2	8
751	48	44	1.09	239.5	45.5	81	8.5
752	38	36	1.05	130.2	22	82.9	7
753	50	44	1.13	183.3	22	86.9	6
754	44	40	1.1	225.5	34	85	8
755	48	40	1.2	225	28	87.5	8
756	44	36	1.22	190	29	84.7	8

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
757	44	38	1.16	212	31.5	85.6	8
758	44	34	1.29	176.8	30	83.	7.5
759	44	38	1.16	224	37	83.4	8
760	44	34	1.29	149.5	22.3	85	7
761	48	44	1.14	206	31.4	84.7	7.5
762	46	38	1.21	196	22	88.7	7.5
763	46	36	1.28	191.8	22.3	88.3	7.5
764	52	42	1.24	223	36.8	83.5	7
765	40	36	1.11	110	20.4	81.4	5
766	38	32	1.18	124.5	23.5	81.1	7
767	44	40	1.1	183	25.6	86	7
768	42	34	1.23	154.5	26	83	6.5
769	38	32	1.18	100.2	16.5	83.5	6
770	42	38	1.10	184.5	26.5	85.6	7
771	44	36	1.22	162.8	22	86.6	7
772	44	36	1.22	127	19.2	84.8	6.5
773	44	38	1.16	158.2	29	81.6	6.5
774	44	38	1.16	176	39.6	77.5	7
775	50	46	1.13	242	40.5	83.2	7
776	42	38	1.10	149	21.6	85.5	6.5
777	46	38	1.21	189	27.2	85.4	7
778	48	42	1.14	169.8	30	82.3	6
779	48	38	1.26	182	29.8	83.6	7
780	40	36	1.11	116	19.5	83.1	5.5
781	40	36	1.11	123	18.6	84	5.5
782	44	38	1.16	131.8	18.7	85.8	6
783	40	36	1.11	96	13.8	85.6	5
784	44	42	1.05	145	28.6	80.2	6

Ear No.	Diameter of butt (m.m.)	Diamter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
785	36	34	1.06	118	20	83	6
786	50	46	1.09	185	22	88.1	5.5
787	38	34	1.11	121	17.5	85.5	6
788	44	36	1.22	128	19.5	84.7	7
789	42	38	1.10	123.5	23.5	80.9	5
790	46	36	1.28	151	22.5	85	5.5
791	38	34	1.11	134	21	84.3	7
792	48	40	1.2	215	27.8	86	7.5
793	48	40	1.2	183	33	81.9	7.5
794	42	34	1.23	159	29	81.7	8
795	46	38	1.21	177.8	27.5	84.5	7
796	50	38	1.31	248	52	79	8
797	44	40	1.1	190	28	85.2	7
798	46	36	1.28	158	25.6	83.8	7.5
799	38	36	1.05	158	24	84.8	7.5
800	44	38	1.16	185	24	87	8
801	48	38	1.26	183	28.5	84.3	7
802	40	30	1.33	141.6	25	82.4	7.5
803	50	42	1.19	148.5	37.5	74.7	8
804	50	42	1.19	199	31	84.4	7
805	40	32	1.22	138	23.3	83.1	7.5
806	46	38	1.21	189	27.2	85.4	8
807	48	42	1.14	236	42	82.2	7.5
808	46	40	1.10	208.5	33.5	79.1	8
809	46	36	1.28	225.5	36.6	83.7	8
810	50	42	1.19	209	42	80	7.5
811	52	42	1.24	209	31.5	85	7
812	40	34	1.17	165	24.3	85.2	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
841	46	38	1.21	154.2	20	87	6
842	46	40	1.10	172	22.5	86.9	6.5
843	36	32	1.12	102	22	78.4	6.5
844	42	34	1.23	116.5	15.5	86.6	6
845	48	38	1.26	207	40.9	80.2	7
846	38	34	1.11	105.7	21.7	79.4	6
847	40	36	1.11	153	31	79.7	7
848	50	44	1.13	195.5	41.5	78.7	6
849	46	40	1.10	172	24	86	7
850	48	38	1.26	207	27.3	86.8	7
851	44	34	1.29	130.7	18	86.2	6.5
852	42	34	1.23	140.5	23.5	83.2	7.5
853	48	40	1.2	206	36	82.5	7.5
854	50	44	1.13	262	48	81.6	7.5
855	42	36	1.16	164	28.4	82	7
856	40	34	1.17	168	32.6	80.6	8.5
857	50	40	1.25	210	42	80	7
858	42	34	1.23	159	25	84.2	7
859	50	40	1.25	193.4	32	83.4	7.5
860	44	34	1.29	189	25	86.7	8
861	48	42	1.14	200	30	85	7
862	40	38	1.05	161	25	84.4	7
863	38	30	1.26	105.8	16.4	84.4	7
864	42	34	1.23	136	22.5	83.4	7
865	46	38	1.21	180	36	80	8
866	46	38	1.21	198.3	29	85.3	7
867	46	40	1.10	154.8	26.5	82.8	6
868	44	38	1.16	152.5	26	82.2	7

Ear No.	Diame ter of butt (m.m.)	Diame- ter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shell- ing percen- tage	Length of ear (in.)
869	44	38	1.16	167	26	84.4	7
870	48	36	1.33	192	29	84.8	7
871	44	40	1.1	207.5	36	82.6	7
872	42	36	1.16	124.5	19.5	84.3	6.5
873	42	34	1.23	166	24	85.5	8
874	42	36	1.16	177	27	84.7	7.5
875	50	38	1.31	224	33.5	85	8
876	52	42	1.24	255.6	42	83.5	7.5
877	52	42	1.24	236	49	79.2	7.5
878	48	44	1.09	144	31	78.4	5.5
879	48	42	1.14	211	28.5	86.5	7.5
880	42	34	1.23	175	33	80.1	7.5
881	48	36	1.33	197	24	87.8	8
882	42	34	1.23	175.5	24.5	86	7.5
883	42	38	1.10	202.8	29.5	85.4	8
884	42	32	1.31	179	36	80	9.5
885	46	38	1.21	185	30	83.7	8
886	44	34	1.29	141.5	23	83.7	7
887	44	34	1.29	153	21.5	85.9	8
888	44	36	1.22	182	37	80	7
889	42	36	1.16	182	31.5	82.3	7.5
890	42	34	1.23	138	27	80.5	6.5
891	42	40	1.05	188	29	84.5	7.5
892	40	38	1.05	153	33.5	77.4	7.5
893	44	36	1.22	199	30.5	85.6	7.5
894	36	34	1.06	120	18	85	6
895	44	34	1.29	175.5	23.5	86.6	7
896	44	38	1.16	160	25	84.3	7

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
897	40	34	1.17	143	30.5	78.6	8
898	42	34	1.23	145.5	23	83.5	7
899	44	36	1.22	153	25	84.2	7
900	46	40	1.10	174.8	28	83.8	7.5
901	42	38	1.10	158.2	25.5	83.8	7
902	46	38	1.21	225	31	86.2	8.5
903	44	36	1.22	127	23.6	81.4	6
904	44	36	1.22	168.5	25	85.1	7
905	38	32	1.18	147.8	26	82.4	7.5
906	44	34	1.29	137.5	21	84.7	7
907	44	34	1.29	128.9	25	80.6	7
908	44	36	1.22	114	24.5	78.5	6.5
909	46	40	1.10	141	21.5	84.7	7
910	42	34	1.23	177.5	24.5	86.1	7.5
911	46	34	1.35	145	32	77.9	8
912	44	34	1.29	148.5	22.5	84.8	6.5
913	42	34	1.23	128	21.5	83.1	6
914	46	38	1.21	221	32	85.5	7.5
915	40	36	1.11	176	35.5	80	9
916	48	34	1.4	238	36	84.8	8
917	46	40	1.10	250	47.5	81	7.5
918	46	38	1.21	147	20	86.3	7
919	42	34	1.23	133.2	21	84.2	6
920	46	38	1.21	164	20	87.5	6.5
921	46	38	1.21	220.3	26.5	87.9	8.5
922	44	34	1.29	142	22.5	84.1	6.5
923	40	34	1.17	101.2	20	88.1	6.5
924	44	38	1.16	141.5	23	83.7	5.5

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
925	44	36	1.22	114	20.5	82	6
926	38	32	1.18	115.3	21	81.7	7
927	42	34	1.23	113	24	78.7	7.5
928	46	40	1.10	229.3	30	86.9	8.5
929	42	34	1.23	139.5	23.5	83.1	7.5
930	42	40	1.05	152.8	27	82.3	7
931	40	34	1.17	129.3	25	80.6	6.5
932	40	34	1.17	101.9	16	84.3	5.5
933	42	34	1.23	150	23	84.6	6.5
934	38	32	1.18	136	19	86	7
935	48	38	1.26	132	33.5	74.6	7
936	42	36	1.16	184	28	84.7	8
937	48	40	1.2	215.5	28.5	86.7	7.5
938	44	36	1.22	151.8	23	84.8	7
939	44	36	1.22	199.2	30.5	84.6	7.5
940	42	36	1.16	173.8	26.5	84.7	6.5
941	36	36	1	133	31	76.7	7.5
942	46	40	1.10	198.8	44	77.8	7
943	48	40	1.2	153	22	85.8	6
944	46	36	1.28	210.7	37	82.4	8
945	44	36	1.22	164.3	23.6	85.6	7.5
946	44	36	1.22	135.5	18.4	86.3	7
947	50	42	1.19	257.8	42.5	83.5	9
948	44	36	1.22	225	31	86.2	8.5
949	50	42	1.19	200	32.5	83.2	7.5
950	44	38	1.16	195.5	29.5	84.3	7.5
951	42	34	1.23	153	27	82.3	7.5
952	44	36	1.22	186.8	39	79.1	8

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
953	44	36	1.22	184	29.1	84.2	7.5
954	38	34	1.11	110	21.4	80.5	6
955	44	38	1.16	194.5	24	87.6	7
956	42	36	1.16	185	25	86.4	8
957	46	36	1.28	209.8	33.8	84.2	8.5
958	46	38	1.21	201	29	85.5	7.5
959	48	44	1.09	225	31.6	85.9	7
960	46	40	1.10	179.5	30	83.2	6
961	48	38	1.26	216.6	34.6	84	7.5
962	42	36	1.16	136	25.8	81	7
963	42	36	1.16	175	28.3	83.8	8
964	40	34	1.17	147.8	20.8	85.9	7
965	40	34	1.17	131	15.7	88	6
966	42	34	1.23	183.9	33	85.3	7.5
967	42	32	1.31	158	23.7	85	7
968	42	36	116	149	23.2	84.4	6.5
969	44	38	1.16	142.5	28.6	79.9	6
970	42	36	1.16	134	31	76.8	6.5
971	44	38	1.16	205	26.3	87.1	7.5
972	38	32	1.18	116	16	86.2	6.5
973	44	34	1.29	169	30	82.2	7
974	38	34	1.11	155	25	83.8	7.5
975	48	42	1.14	186.2	28.4	84.7	6
976	38	30	1.26	119	19.2	83.8	7
977	40	40	1	176	32.1	81.7	7.5
978	44	38	1.16	132	18	86.3	6
979	42	38	1.10	129	19.4	84.9	6
980	40	36	1.11	113	12.6	88.8	6

Ear No.	Diameter of butt (m.m.)	Diameter of tip (m.m.)	Degree of taper	Weight of corn and cob (gm.)	Weight of cob (gm.)	Shelling percentage	Length of ear (in.)
981	44	36	1.22	129	16.7	87	6
982	44	40	1.1	186.5	25.7	86.2	7
983	40	32	1.22	135	26.4	80.4	7
984	40	36	1.11	123.8	17	86.3	5.5
895	42	36	1.16	139	20.6	85.1	5.5
986	46	40	1.11	200	31	84.5	7.5
897	38	34	1.11	98.5	16.6	83.1	5.5
988	44	36	1.22	136	22.3	83.6	6
989	46	40	1.10	194.2	26.7	87.2	7.5
990	42	34	1.23	114	18.4	83.8	6
991	46	40	1.10	153.4	25.3	83.5	6
992	40	38	1.05	112.5	17	84.8	6
993	38	34	1.11	104	14.3	86.2	6
994	40	34	1.17	155	21	86.4	7
995	40	36	1.11	104.5	15.3	85.3	6
996	46	38	1.21	130.8	25.3	79.9	6
997	40	32	1.22	131	23	82.4	6.5
998	38	34	1.11	128.9	23.5	81.7	6.5
999	48	40	1.2	205	27.2	86.7	7.5
1000	38	34	1.11	117.5	21.5	81.7	6.5

E A R C O R N A R R A Y

Degree of taper

1.10	1.11	1.12	1.13	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.28	1.29	1.30	1.31	1.32	1.33	1.34	1.35	1.36	1.37	1.38	1.39	1.40	1.41	1.42	1.43
									1																									
									1				1			1																	
1						1		2	1		1		2		2	1		3	2				1				2						
3	1					1					1		1		1			1															
4	1	1				4	1					1													2								
2	2	1	2				1				1	1	3					1	1		1												
7	4	1				3	2	1			4	2		1	1	1		2	1		1												
10	4	1	5	3		8	3		1	1	3	4	4	1	1	3		4	6		2				3							1
6	5		4	1		14	2	3		2	3	9	2	1	3	2		3	4	1	4		2		4		1					
8	2		3	3		17	4	3		6	8	9	2	2	3			3	2	2		1	2									
26	6		5	6		14	5	5	8	13	10	13	11	2	7	4	3	7	5		1		1		2							
16	5			6		18	4	4	4	7	9	20	9	2	5	6		7	6		3		1		1		1	2		1		
17	7		7	2		10	6	4	2	7	12	13	9	3	5	3		7	4	2	2						2		1			1
15	5		4	2	1	12	1	2	3	5	8	8	4	1	4	1			5		1		2		1							
8	3		3	5		9		4	2	3	9	5	1	1	3	2	2	2			2		3				4					
2	1			1		1	2	1		3	3	1	1	1			1	2	1						1							
3	1										2	1			1	1	1															
2		1				2						3	1		1				1													

$F_t D_t^2$	D_t^2	D_t	$F_t V_t$	F_t
.209814	.034969	-.187	6	6
.172872	.021609	-.147	8.32	8
.337842	.018769	-.137	18.90	18
.032258	.016129	-.127	2.12	2
.013689	.013689	-.117	1.07	1
.034347	.011449	-.107	3.24	3
.278516	.009604	-.097	31.61	29
.983970	.007569	-.087	143.00	130
.278663	.005929	-.077	52.17	47
.022445	.004489	-.067	5.60	5
.107217	.003249	-.057	37.29	33
.064061	.002209	-.047	33.06	29
.001369	.001369	-.037	1.15	1
.104976	.000729	-.027	132.24	114
.008959	.000289	-.017	36.24	31
.001421	.000049	-.007	34.22	29
.000207	.000009	.003	27.37	23
.007943	.000169	.013	56.40	47
.039146	.000529	.023	89.54	74
.098010	.001089	.033	109.80	90
.094299	.001849	.043	62.73	51
.042135	.002809	.053	18.60	15
.146853	.003969	.063	46.25	37
.133225	.005329	.073	31.50	25
.048223	.006889	.083	8.89	7
.363258	.008649	.093	53.76	42
.403142	.010609	.103	49.02	38
.063845	.012769	.113	6.50	5
.257193	.015129	.123	22.27	17
.017689	.017689	.133	1.32	1
.245388	.020449	.143	15.96	12
.371966	.026569	.163	18.90	14
.334890	.033489	.183	13.70	10
.074498	.037249	.193	2.76	2
.041209	.041209	.203	1.39	1
.045369	.045369	.213	1.40	1
.054289	.054289	.233	1.42	1
.059049	.059049	.243	1.43	1
5.395045			1187.14	1000

$1187.14 \div 1000 = 1.187 M_t \pm .00159$ (mean degree of taper)

$5.395045 \div 1000 = .005395045\ \sigma_T^2$

$\sqrt{.005395045} = .07345\ \sigma_T \pm .000799$ (Standard Deviation)

F_s	F_s	V_s	D_s	D_s^2	$F_s D_s^2$	ΣP
1	73		-10.18	103.6324	103.6324	-.03054
4	296		-9.18	84.2724	337.0896	-.20196
20	1500		-8.18	66.9124	1338.2480	-6.89392
10	760		-7.18	51.5524	515.5240	14.45454
16	1232		-6.18	38.1924	611.0784	4.27776
19	1482		-5.18	26.8324	509.8156	1.41608
33	2607		-4.18	17.4724	576.5892	3.83624
70	5600		-3.18	10.1124	707.8680	1.40560
83	6723		-2.18	4.7524	394.4492	-1.74962
86	7052		-1.18	1.3924	119.7464	.35638
165	13695		-.18	.0324	5.3460	.1683(
150	12600		.82	.6724	100.8600	.3884:
135	11475		1.82	3.3124	44.1730	.3283(
88	7568		2.82	7.9524	699.8112	-.8138(
75	6525		3.82	14.5924	1094.4300	2.0111(
23	2024		4.82	23.2324	534.3452	1.3893
11	979		5.82	33.8724	372.5964	-1.0883
11	990		6.82	46.5124	511.6364	.088(
1000	83181				8577.2390	19.342

$83181 \div 1000 = 83.18$ Ms $\pm$ .0624 (mean shelling percentage)

$8577.2390 \div 1000 = 8.5772390$

$\sqrt{8.5772390} = 2.9287\sigma_s \pm .0312$ (Standard Deviation)

$r = \frac{19.34358}{1000(2.9287)(.07345)} = +.08991$ (coefficient of correlati(

$Er = \pm \frac{0.6745\left[1-(.0889)^2\right]}{\sqrt{1000}} = \pm .0211$ (probable error.)

Conclusion

From the data the writer finds a positive correlation coefficient of 0.08991 $\pm$ 0.0211 between degree of taper of ears and shelling percentage, or that there is only about 9% of a perfect correlation, and therefore the writer concludes that the correlation is of too small a degree to warrant the statement that there is a correlation between degree of taper and shelling percentage in ears of Moody County White Dent corn.

Even if no correlation exists between the characters in question, we may still select the most cylindrical ears with the idea in mind that we are getting more uniform kernels and thus get a more uniform rate of seeding and consequently a more uniform stand of corn. But as far as the writer has been able to determine, there is no definite information on this subject and we do not know whether our supposition is correct or not.

The writer wishes to acknowledge valuable assistance from Dr. A. N. Hume and also from Mr. E. C. Ewing's bulletin (5).

Weight of ear and shelling percentage

Using the data previously quoted the writer, in this case, determined the coefficient of correlation between the percentage of corn on the ear and the weight of the ear.

C O R

W e i g

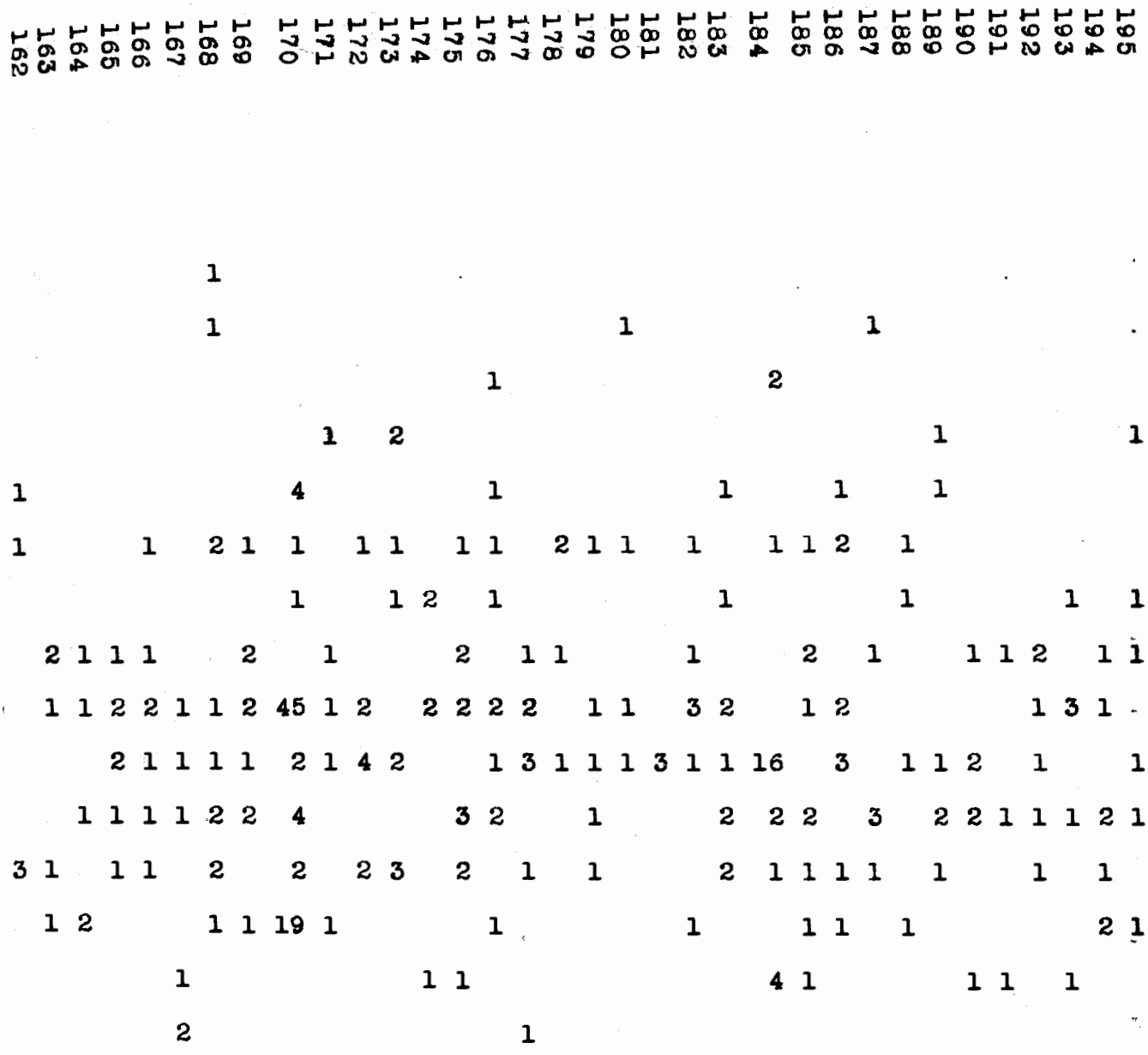
Shelling percentage	80	86	90	92	94	96	98	99	100	101	102	104	105	108	109	110	112	113	114	115	116	118	119	120	121	122	123	124	125	126	127	128
73																																
74																																
75																		10														
76			1													1											1					
77																				1											3	
78								2			1							1	1							1					1	
79		1					1			1			1															1	1			
80													1			1							1				1					1
81				1					1	1						1		10		1		1		2				2		1	2	1
82	1																		1				1						1		3	2
83		1					1				1					1			1		3	1	1		1				1		5	2
84					1					1			1	1			1		2							1	1	1	1		1	2
85						1		1	1			1			1							1		2	2							
86									1			1									2		1				2					
87																		10														1
88								1		1								1													2	
89																	1															
90																																

Shelling percentage	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154
73						1																				
74				1															1	2						
75		1					1						3								1					1
76			1		1	1										1										
77																	1								2	
78															1	2										
79		1			1									2		1		2					1		1	
80	2						1	1	1	1			17				2	2				1				
81								2					1					1					1		2	2
82		1	2	1	1		1					1	1	1	1		1	1	1	1	2			2	3	1
83	1	1	1		1	1		3	1	1	2	2	4		2	1	1	1					1		2	2
84	1	1	1	1	1	2			4			2	1	6	2	3		1		1	2	1	5		1	
85		1	1	1		1			1	1	1	3	19	3	1	1		1	2	2	5		1		2	1
86		1	1	1			1	1		1				2	1		1		1	1		1	1	1		
87	1															1	1	1								2
88			1					1															1		1	
89					1																					
90													5									1				

Shelling percentage	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
73																					
74																					
75														1							
76														1							
77			1		2																
78																	1		2		
79	1					1		1								4					
80		1	1			2		1				1		2	1	1		1	1		1
81	19	2		1	1	2										1			1	2	
82	2	1		3		1			2	1	1	1			2		1				2
83	2		2	2					1	1	2	2	1	1	2	45	1	2		2	2
84		1	2	2	2	1	2				2	1	1	1	1	2	1	4	2		
85	1	3		2		2				1	1	1	1	2	2	4					3
86	12		1					3	1		1	1		2		2		2	3		2
87							2		1	2				1	1	19	1				
88													1							1	1
89													2								
90	3																				

C O R N A R R A Y

W e i g h t o f e a r



RRAY

f ear

181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	228	229	230	231	232	233	234	236	238	239	240	242	243	247	248	250	252	253	254	255	256	257	259	261	262	263	264	265	266	267	269	271
																	1																																																												
						1																					1																																																		
			2														1																				1				1																																				
								1						1			1																													1																														
		1			1			1								1	1										1																										1			1				1																	
	1		1	1	2		1												1							1		1	1				2												1			1								1		1														1				1	
		1					1					1		1	1	1			1	1							1				1					2	1								1				1						1				1		1							1		1							
	1			2		1			1	1	2		1	1		1	7			1					1	2	1	1	1										1	2			1			1				1			1			1									1				1				1	1			1
	3	2		1	2						1	3	1			1	1		3		1		2							1	6						1				1	1	1	1		1			1				1			1	1		1				1	1	1		1										
3	1	1	16		3		1	1	2		1			1		2		6	2			2			1	1	2	2				2	1		2		1		1					1	4				1					1								1													1	1	
		2	2	2		3		2	2	1	1	1	2	1		1	11	1	2	1	1	1	2			1	1	2			1	1					1			1			1	2		1		1	1		1				1	4										1											
		2	1	1	1	1		1			1		1		1	1	1	1				1	1	1		1				2	3			1			1							2			1				1	1												1	1						1						
	1			1	1		1						2	1		1				1		1		2										1				1	1	1				1	7			1			1		1				1																1				
			4	1					1	1		1			1																1																									1		1																			
																	3	1													1																				1																										
																													1																																																

$F_w D_w^2$	D_w^2	D_w	$F_w V_w$	F_w
7656.25	7656.25	- 87.5	80	1
13284.50	6642.25	-81.5	172	2
6006.25	6006.25	-77.5	90	1
5700.25	5700.25	-75.5	92	1
5402.25	5402.25	-73.5	94	1
5112.25	5112.25	-71.5	96	1
9660.50	4830.25	-69.5	196	2
18769.00	4692.25	-68.5	396	4
13668.75	4556.25	-67.5	300	3
17689.00	4422.25	-66.5	404	4
8580.50	4290.25	-65.5	204	2
8064.50	4032.25	-63.5	208	2
11718.75	3906.25	-62.5	315	3
3540.25	3540.25	-59.5	108	1
3422.25	3422.25	-58.5	109	1
13225.00	3306.25	-57.5	440	4
6160.50	3080.25	-55.5	224	2
95047.00	2970.25	-54.5	3616	32
14311.25	2862.25	-53.5	570	5
5512.50	2756.25	-52.5	230	2
13261.25	2652.25	-51.5	580	5
7350.75	2450.25	-49.5	354	3
9409.00	2352.25	-48.5	476	4
9025.00	2256.25	-47.5	480	4
6486.75	2162.25	-46.5	363	3
2140.50	2070.25	-45.5	244	2
9901.25	1980.25	-44.5	615	5
7569.00	1892.25	-43.5	496	4
7225.00	1806.25	-42.5	500	4
1722.25	1722.25	-41.5	126	1
27884.25	1640.25	-40.5	2156	17
14042.25	1560.25	-39.5	1152	9
7411.25	1482.25	-38.5	645	5
9843.75	1406.25	-37.5	210	7
10658.00	1332.25	-36.5	1048	8
6301.25	1260.25	-35.5	660	5
7141.50	1190.25	-34.5	798	6
6733.50	1122.25	-33.5	804	6
4225.00	1056.25	-32.5	540	4
7938.00	992.25	-31.5	1088	8
6511.75	930.25	-30.5	959	7
3481.00	870.25	-29.5	552	4
2436.75	812.25	-28.5	417	3
6050.00	756.25	-27.5	1120	8
35814.75	702.25	-26.5	7191	51
9103.50	650.25	-25.5	1988	14
4802.00	600.25	-24.5	1144	8
5522.50	552.25	-23.5	1440	10
3543.75	506.25	-22.5	1015	7
4622.50	462.25	-21.5	1460	10
2101.25	420.25	-20.5	735	5
2661.75	380.25	-19.5	1036	7
3422.50	342.25	-18.5	1490	10
1225.00	306.25	-17.5	700	4
2994.75	272.25	-16.5	1661	11
720.75	240.25	-15.5	456	3
2943.50	210.25	-14.5	2142	14
1640.25	182.25	-13.5	1386	9

6250.00	156.25	-12.5	6200	40
1058.00	132.25	-11.5	1248	8
771.75	110.25	-10.5	1099	7
902.50	90.25	- 9.5	1580	10
361.25	72.25	- 8.5	795	5
506.25	56.25	- 7.5	1440	9
169.00	42.25	- 6.5	644	4
151.25	30.25	- 5.5	810	5
101.25	20.25	- 4.5	815	5
61.25	12.25	- 3.5	820	5
43.75	6.25	- 2.5	1155	7
15.75	2.25	- 1.5	1162	7
1.50	.25	- .5	1102	6
2.75	.25	.5	1848	11
20.25	2.25	1.5	1521	9
487.50	6.25	2.5	13260	78
61.25	12.25	3.5	855	5
182.25	20.25	4.5	1548	9
242.25	30.25	5.5	1557	9
211.25	42.25	6.5	870	5
618.75	56.25	7.5	1925	11
722.50	72.25	8.5	1760	10
722.00	90.25	9.5	1416	8
441.00	110.25	10.5	712	4
661.25	132.25	11.5	895	5
625.00	156.25	12.5	720	4
546.75	182.25	13.5	543	3
1471.75	210.25	14.5	1274	7
2162.25	240.25	15.5	1647	9
7078.50	272.25	16.5	4784	26
2756.25	306.25	17.5	1665	9
3422.50	342.25	18.5	1860	10
2281.50	380.25	19.5	1122	6
1681.00	420.25	20.5	752	4
2773.50	462.25	21.5	1134	6
3037.50	506.25	22.5	1140	6
1656.75	552.25	23.5	573	3
3601.50	600.25	24.5	1152	6
3901.50	650.25	25.5	1158	6
4915.75	702.25	26.5	1358	7
4537.50	756.25	27.5	1170	6
2436.75	812.25	28.5	588	3
7832.25	870.25	29.5	1773	9
25016.75	930.25	30.5	5346	27
8930.25	992.25	31.5	1791	9
9506.25	1056.25	32.5	1800	9
4489.00	1122.25	33.5	804	4
2380.50	1190.25	34.5	202	2
6301.25	1260.25	35.5	1015	5
5661.25	1332.25	36.5	1020	5
4218.75	1406.25	37.5	615	3
2964.50	1482.25	38.5	412	2
9361.50	1560.25	39.5	1642	6
11481.75	1640.25	40.5	1456	7
10333.50	1722.25	41.5	1254	6
1806.25	1806.25	42.5	210	1
1892.25	1892.25	43.5	633	3
25743.75	1980.25	44.5	2756	13
6210.75	2070.25	45.5	639	3
6486.75	2162.25	46.5	642	3
4512.50	2256.25	47.5	430	2

4704.50	2352.25	48.5	432	2
4900.50	2450.25	49.5	434	2
15301.50	2550.25	50.5	1308	6
2652.25	2652.25	51.5	219	1
8268.75	2756.25	52.5	660	3
11449.00	2862.25	53.5	884	4
5940.50	2970.25	54.5	444	2
3080.25	3080.25	55.5	223	1
9576.75	3192.25	56.5	672	3
23143.75	3306.25	57.5	1575	7
44489.25	3422.25	58.5	2938	13
14641.00	3660.25	60.5	912	4
3782.25	3782.25	61.5	229	1
11718.75	3906.25	62.5	690	3
16129.00	4032.25	63.5	924	4
4160.25	4160.25	64.5	232	1
17161.00	4290.25	65.5	932	4
442.25	4422.25	66.5	234	1
18769.00	4692.25	68.5	944	4
4970.25	4970.25	70.5	238	1
10224.50	5112.25	71.5	478	2
47306.25	5256.25	72.5	2160	9
11100.50	5550.25	74.5	484	2
11400.50	5700.25	75.5	486	2
12640.50	6320.25	79.5	494	2
6480.25	6480.25	80.5	248	1
6806.25	6806.25	82.5	250	1
7140.25	7140.25	84.5	252	1
7310.25	7310.25	85.5	253	1
14964.50	7482.25	86.5	508	2
22968.75	7656.25	87.5	765	3
7832.25	7832.25	88.5	256	1
8010.25	8010.25	89.5	257	1
8372.25	8372.25	91.5	259	1
8742.25	8742.25	93.5	261	1
8930.25	8930.25	94.5	262	1
9120.25	9120.25	95.5	263	1
9312.25	9312.25	96.5	264	1
19012.50	9506.25	97.5	530	2
9702.25	9702.25	98.5	266	1
9900.25	9900.25	99.5	267	1
20604.50	10302.25	101.5	538	2
10712.25	10712.25	103.5	271	1
1281058.50			167492	1000

$167492 \div 1000 = 167.492 \pm .760 M_w$ (mean weight)

$1281058.50 \div 1000 = 1281.058\ \sigma_w^2$

$\sqrt{1281.058} = 35.79 \pm .385\sigma_w$ (Standard deviation of weight)

F_s	$F_s V_s$	D_s	D_s^2	$F_s D_s$	ΣP
1	73	-10.2	104.04	104.04	341.70
4	296	-9.2	84.64	338.56	745.20
19	1425	-8.2	67.24	1277.56	5813.10
11	838	-7.2	51.84	570.24	1679.40
16	1232	-6.2	38.44	615.04	501.20
17	1326	-5.2	27.04	459.68	1579.80
32	2528	-4.2	17.64	564.48	866.20
69	5520	-3.2	10.24	706.56	233.50
83	6723	-2.2	4.84	401.72	1576.30
88	7216	-1.2	1.44	126.72	-847.90
164	13612	- .2	.04	6.56	58.50
147	12348	.8	.64	94.08	446.20
144	12240	1.8	3.24	466.56	865.40
86	7396	2.8	7.84	674.24	1255.30
74	6438	3.8	14.44	1068.56	2674.50
24	2112	4.8	23.04	552.96	294.60
11	979	5.8	33.64	370.04	877.70
10	900	6.8	46.24	462.40	-966.00
1000	83202			8860.00	17994.70

$83202 \div 1000 = 83.202 \pm .063 M_s$ (Mean shelling percentage)

$886000 \div 1000 = 8.86\ \sigma_s^2$

$\sqrt{8.66} = 2.942 \pm .031\ \sigma_s$ (Standard Deviation)

$$r = \frac{17994.70}{1000(35.79)(2.942)} = .1707 \text{ (Coefficient of correlation)}$$

$$Er = \pm \frac{0.6745\ [1-(.1707)^2]}{\sqrt{1000}} = \pm .0206$$

Conclusion

A positive correlation coefficient of .1707 $\pm$ .0206 was found between weight of ear and shelling percentage, which leads the writer to believe that when heavy ears of Moody County White Dent corn are selected they have a larger percentage of corn on them than do the lighter ears.

Comparative germination percentage of corn stored on the cob and shelled corn

The writer was unable to find any data regarding the compa -ative germination percentage of corn stored on the cob and shell corn.

Ernest B. Brown, Acting in Charge of Corn Investigations, of the Bureau of Plant Industry, Washington, D. C., states in a letter to the writer with reference to the two methods of storing corn that, "We know of no experimental work that has been done bearing directly upon these two methods of storing. In our experimental work, we have frequently had corn stored both on the cob and as shelled corn; but in every case the corn has been selected early from the field, dried out thoroughly and stored under the best conditions available, and we have found that under such conditions the corn taken directly from the cob and the corn that had been previously shelled did not differ materially in germination percentage."

The writer used some of the Moody County White Dent corn in this test that was used for the problems previous worked out. This corn was brot to the Farm Crops store room in the Administration Building of the South Dakota State College on November 27, 1915, and was kept there at a temperature of 68 to 70 degrees Fahrenheit, until December 11, 1915 when some of the ears were shelled. Some shelled corn was placed in one sack and 25 ears were placed in another sack and both were hung up in the old Farm Crops laboratory where the temperature varied from freezing to as high as 90 degrees Fahrenheit, the average temperature probably being about 60 degrees.

These samples were left there until May 11, 1916 and 1000

kernel samples were taken from the shelled and unshelled and tested by the Rag Doll method.

The corn that was stored on the cob gave an average germination of 98 per cent while the shelled corn gave a germination of 96 per cent, showing a 2 per cent greater germination for the corn stored as ear corn.

The writer is led to believe that the difference in favor storing corn as ear corn would probably be greater than these tests indicate, if larger quantities are stored and if the corn is not allowed as good a two weeks of curing as these samples did while in the Farm Crops store room at the Administration Building.

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