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Some Plant Characteristics of *Cucurbita maxima* Duchesne and *Cucurbita moschata* Duchesne Genotypes Collected from Western Anatolia Region

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ABSRACT

In this study, a total of 147 *Cucurbita maxima* Duchesne species collected from the cities of İstanbul, Tekirdağ, Edirne, Kırklareli, Balıkesir, Çanakkale, İzmir, Aydın, Denizli, Muğla, Manisa, Afyon, Kütahya, Uşak, Bursa, Eskişehir, Bilecik, Kocaeli, Sakarya, Düzce, Bolu, Yalova, Ankara, Konya, Karaman, Antalya, Isparta, Burdur where 76% of winter pumpkin production is made in Turkey and, a total of 54 *Cucurbita moschata* Duchesne were compiled. The pumpkins were sown on 23th of May 2013 in Hacınuman Village, Altınekin Town-Konya to morphologic characterization and breeding works. Beside selfing works, the fallowing measurements and observations were made: the length of sepals in female flowers (mm), the length of pedicles in male flowers (mm), the diameter of pedicles in male flowers (mm), the hairiness status of pedicles, the color of pedicles in male flowers, the period of observation of first male flowers, the period of observation of first female flowers, the difference between the blossoming periods - during flowering period and, leaf sizes (cm), leaf width (cm), the length of petioles (cm), the thickness of petioles, the lobed structure in the leaf blades, the color of leaf blades, the existence of papilla in leaf blades, the color of petioles, the status of prickliness in petioles - were also determined after fruits occurred.

1. Introduction

Turkey has a significant position in the world from the point of plant genetic resources and genetic diversity (Karagöz 2003; Karagöz at al. 2010). Plant genetic resources suffer from genetic erosion environmental and other oppressions. It is rather significant to determine, gathering and protection of the diversity in plant genetics from the point of the maintenance of plant diversity. Genetic diversity condensed on the locations where local varieties of kinds, their wild relatives and passage forms all exist together. The species include many genotypes within themselves. The collected samples are very tiny models of total variation. For that reason, it is important to collect the samples to represent the widest variation in the protection of plant genetics resources (Dilbirliği 2007).

The value of the plant genetic resources may be expressed through the usability of material in the improvement rather than the existence of collection which was collected and put under protection. The significance of local species from the point of the improvement of rural populations is non-issuable. The primitive species are significant from the point of improvement since they are closer to the culture species and can be crossbred with culture species. The wild relatives of culture plants are also important from the point of deterioration source (Eser at al. 2005). The evaluation of local species may be carried out either through directly encouraging the cultivation of those species or their effectively evaluation in the efforts to improve carried out in developing new species (İnal 2002).

The village populations or local species are the species which were developed by the villagers through traditional methods and acclimatized the environment or

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older species. Their genetic structures include the characteristics such as durability against diseases and pests, cold and draught. The variation in those may be between the regions and populations as well as within populations. It includes the individuals which were selected by farmers due to their quality aspects or acclimatized the environment as a result of natural selection for many years. These populations exhibit deployment on the places where the plant is cultivated first. For that reason, there are so many local populations in Turkey. However, those populations started to decrease with the beginning of modern species and growing techniques (Eser at al. 2005).

Especially, the protection and evaluation of plant diversity of the species which are grown is extremely important for the maintenance of plant production. Carefully evaluation of plant genetics resources may be carried out through increasing the use of that material in development programs and production of the seeds and their distribution to the growers. The basic method in the activities of the development of species is choosing the plants with desired qualifications through forming a wide genetic variation. The characteristics which living creatures own are transferred to new individuals through genes. In that case, plant genetic sources which have the desired characteristics to provide to the species to be developed are required. Wild species, accommodation structures, local or traditional species and the genetic materials the developer have form the plant genetic sources. Local or traditional species are in the balanced population structures which show genetic discrepancies. Moreover, they form genetic resources for genotypes since they can be morphologically distinguished, they are in conformity with traditional agricultural conditions and they carry the characteristics in their genetic structures which function as protectors against diseases and pests (Balkaya at al. 2008).

Total of 201 genotypes were collected from 28 cities where 76% of winter pumpkin production in Turkey is achieved. In this study, some morphological aspects of those collected genotypes were presented.

2. Material and Methods

The plant material of the study was formed by 201 genotypes of *Cucurbita maxima* Duchesne and *Cucurbita moschata* collected in İstanbul, Tekirdağ, Edirne, Kırklareli, Balıkesir, Çanakkale, İzmir, Aydın, Denizli, Muğla, Manisa, Afyon, Kütahya, Uşak, Bursa, Eskişehir, Bilecik, Kocaeli, Sakarya, Düzce, Bolu, Yalova, Ankara, Konya, Karaman, Antalya, Isparta and Burdur in Turkey in 2012.

The study was carried out in Konya province, Altınekin district Hacınuman village ecological condition. According to the soil analysis of the study area, the soil has clayey loamy structures and they were found of light alkalis, salt free and rich in lime. They were found adequate of potassium and other micro elements but not adequate organic substances, phosphorus and manganese. The soil preparations were duly carried before sowing.

Morphological characterization was carried out in 15 plants and selfing activities were carried out in 5 plants (Balkaya at al. 2008).

In this study, following measurement and observations were carried out; the length of sepals in female flowers (mm), the length of pedicles in male flowers (mm), the diameter of pedicles in male flowers (mm), the color of pedicles in male flowers, the hairiness status of pedicles, the period of observation of first male flowers, the period of observation of first female flowers, the difference between the blossoming periods, leaf sizes (cm), leaf width (cm), the length of petioles (cm), the thickness of petioles (mm), the lobed structure in the leaf blades, the color of leaf blades, the existence of papilla in leaf blades, the color of petioles, the status of prickliness in petioles.

3. Results and Discussion

3.1. The Flower and Leaf Characteristics of Some Local Cucurbita maxima Duchesne Genotypes

The length of sepals in female flowers of *Cucurbita maxima* Duchesne genotypes, the length of pedicles in male flowers, the averages of the diameter of pedicles in male flowers were found 16.20 mm, 10.15 cm and 4.00 mm, respectively. In the 65.22% of genotypes (90 genotypes), the color of pedicles in male flowers was found as light green while 34.78% of them (48 genotypes) was found as green. Among the genotypes, the hairiness of male flower pedicles was found as light (79 genotypes), medium (56 genotypes) and strong (3 genotypes) in the rates of 57.25%, 40.58%, 2.17%, respectively. The first blossoming of male flowers was determined as approximately 55.th day after the sowing of seeds while first blossoming date of female flowers was the 60.th day. In the 100% of genotypes, male flowers blossomed first and protandry is dominant in all them.

In the genotypes of t*he Cucurbita maxima* Duchesne, the length of leaves, the width of leaves, the length of petioles, and thickness of petioles were determined as 21.24 cm, 28.23 cm, 30.24 cm and 12.68 mm, respectively. When they were analyzed from the point of lobed structure in leaf blades, 92.03% of them (127 genotypes) had no lobed structure, 5.07% of them (7 genotypes) had very slight lobed structure, 2.17% (3 pieces) had slight lobbed structure, and 0.72 (1 genotype) medium lobbed structure. When the genotypes are analyzed from the point of the color of leaf blades, 96.38% of them (133 genotypes) had green leaves while 3.62% of them (5 genotypes) was found light green. In the 99.28% of the genotypes (137 genotypes), no papilla was seen while only 0.72% of them (1 genotype) contained papilla. The genotypes were evaluated from the point of the color of petioles; the rate of light green ones was 97.1% (134

genotypes), the rate of green ones was 2.17 (3genotypes), the rate of dark green was 0.72 (1 genotype). When they are evaluated from the point of vestitures in their petioles and the rate of vestiture, was less in 10.14% (14 genotypes), medium in 82.61% (114 genotypes) and many in 7,25% (10 genotypes) were determined.

Table 1

The Flower and Leaf Characteristics of Some Local *Cucurbita maxima* Duchesne Genotypes

a*	b	c	d	e	f	g	h	i
1	18.09	28.73	23.63	13.8	Absent	Green	Absent	Light Green
2	16.62	21.26	17.56	8.55	Absent	Green	Absent	Light Green
3	19.37	26.32	22.12	14.1	Absent	Green	Present	Light Green
4	17.76	24.47	21.98	12.37	Absent	Green	Absent	Light Green
5	21.22	29.69	28.14	12.24	Absent	Green	Absent	Light Green
6	17.92	22.32	20.17	11.77	Absent	Green	Absent	Light Green
7	19.38	29.58	24.82	12.4	Absent	Green	Absent	Light Green
10	19.48	26.51	20.59	12.24	Absent	Light Green	Absent	Light Green
11	18.89	28.98	22.89	12.97	Absent	Green	Absent	Light Green
12	22.27	33.38	26.53	13.66	Absent	Green	Absent	Light Green
13	19.47	26.76	21.76	11.5	Very Slight	Light Green	Absent	Light Green
14	18.31	23.22	25.58	15.08	Absent	Green	Absent	Light Green
15	19.44	25.29	31.67	13.13	Absent	Green	Absent	Light Green
16	12.42	15.56	14.62	6.82	Absent	Green	Absent	Light Green
17	19.7	24.96	19	14.23	Absent	Green	Absent	Light Green
18	18.07	23.81	21.37	10.7	Absent	Green	Absent	Light Green
20	19.82	23.87	27.96	9.13	Absent	Green	Absent	Light Green
21	19.46	48.28	24.05	12.94	Very Slight	Green	Absent	Light Green
22	21.11	27.69	24.44	12.31	Absent	Green	Absent	Light Green
25	21.98	30.13	33.89	16.97	Absent	Green	Absent	Light Green
26	19.83	25.79	19.49	14.99	Absent	Green	Absent	Light Green
27	16.22	21.66	19.4	10.15	Absent	Green	Absent	Light Green
28	22.11	28.53	29.53	9.53	Absent	Green	Absent	Dark Green
33	29.2	31.38	29.53	12.41	Absent	Green	Absent	Light Green
34	21.71	30.13	35.82	10.82	Absent	Green	Absent	Light Green
36	19.73	26.29	32.53	11.04	Absent	Green	Absent	Light Green
37	21.56	30.64	28.49	16.52	Absent	Green	Absent	Light Green
38	19.36	24.44	22.64	10.3	Absent	Green	Absent	Light Green
39	24.31	32.82	32.22	13.95	Absent	Green	Absent	Light Green
41	21.07	25.64	31.96	11.47	Absent	Green	Absent	Light Green
42	24.47	28.91	29.58	9.53	Absent	Green	Absent	Light Green
43	19.38	23.82	27.58	9.43	Absent	Green	Absent	Light Green
45	20.4	23.42	25.47	13.64	Absent	Green	Absent	Light Green
46	22.18	26.36	30.13	13.21	Absent	Green	Absent	Light Green
47	25.98	33.53	37.07	10.31	Absent	Green	Absent	Light Green
48	22.29	28.38	31.25	15.67	Absent	Green	Absent	Light Green
49	22.5	31.88	32.88	13.77	Absent	Green	Absent	Light Green
51	26.36	24.71	27.93	10.11	Absent	Green	Absent	Light Green
52	22	27.98	30.69	10.82	Absent	Green	Absent	Light Green
53	20.58	27.8	30.07	10.15	Absent	Green	Absent	Light Green
54	27.84	36.11	48.24	12.51	Absent	Green	Absent	Light Green
55	12.36	16.76	13	9.06	Absent	Green	Absent	Light Green
56	20.6	25.56	33.4	9.53	Absent	Green	Absent	Light Green
58	25.56	29.33	31.36	10.78	Absent	Green	Absent	Light Green
59	21.53	32.87	31.09	15.84	Absent	Green	Absent	Light Green
60	24.78	33	33.07	12.41	Absent	Green	Absent	Light Green
61	23.02	30.09	34.33	11.37	Absent	Green	Absent	Light Green
62	18.78	23.42	35	12.99	Absent	Green	Absent	Light Green
63	21.33	28.93	34.2	13.1	Absent	Green	Absent	Light Green
64	21.33	25.52	37.52	19.32	Absent	Green	Absent	Light Green
65	25.49	33.67	45.71	18.38	Absent	Green	Absent	Light Green
66	22	30.51	30.02	11.04	Absent	Green	Absent	Light Green
67	24.09	32.33	44.82	14.73	Absent	Green	Absent	Light Green
68	20.31	30.09	32.31	10.99	Absent	Green	Absent	Light Green
69	19.76	25.38	42.56	11.7	Absent	Green	Absent	Light Green
72	20.76	26.16	36.02	10.12	Absent	Green	Absent	Light Green
74	22.2	30.98	31.67	12.54	Absent	Green	Absent	Light Green
75	25.53	37.22	35.04	14.95	Absent	Green	Absent	Light Green
78	22.13	29.69	38.02	11.05	Absent	Green	Absent	Light Green

Table 1

Continues

79	22.82	33.18	33.49	16.51	Absent	Green	Absent	Light Green
80	22.02	25.6	26.42	13.56	Absent	Green	Absent	Light Green
81	21.33	28.8	36.82	12.59	Absent	Green	Absent	Light Green
82	20.4	30.11	34.07	9.44	Absent	Green	Absent	Light Green
83	21.96	21.4	18.6	8.52	Absent	Light Green	Absent	Light Green
84	18.91	28.82	32.04	15.71	Absent	Green	Absent	Light Green
89	21.6	31.58	31.78	14.74	Absent	Green	Absent	Light Green
91	19.84	26.02	32.96	8.86	Absent	Green	Absent	Light Green
92	20.62	27.29	33.62	10.22	Absent	Green	Absent	Light Green
93	20.58	28.8	36.29	10.94	Absent	Green	Absent	Light Green
94	21	28.18	28.49	16.65	Absent	Green	Absent	Light Green
101	20.09	24.09	28.87	10.08	Absent	Green	Absent	Light Green
102	22.42	29.4	39.18	9.23	Absent	Green	Absent	Light Green
103	23.76	32.33	42.04	12.65	Absent	Green	Absent	Light Green
104	21.36	31.24	32.96	15.22	Absent	Green	Absent	Light Green
105	22.38	29.47	35.2	11.18	Absent	Green	Absent	Light Green
106	23.52	32.57	38	16.42	Absent	Green	Absent	Light Green
107	21.02	29.31	31.56	11.13	Absent	Green	Absent	Light Green
108	26.47	35.16	45.33	15.32	Absent	Green	Absent	Light Green
109	21.29	26.91	29.67	9.88	Absent	Green	Absent	Light Green
110	20.6	25.62	34.44	14.57	Absent	Green	Absent	Light Green
111	20.71	26.16	30.47	17.7	Slight	Green	Absent	Light Green
112	22.62	31.93	38	11.68	Absent	Green	Absent	Light Green
113	22.27	29.76	39.93	16.2	Absent	Green	Absent	Light Green
114	25.46	27.83	32.96	10.93	Absent	Green	Absent	Light Green
115	19.31	26.53	30.4	17.36	Absent	Green	Absent	Light Green
116	20.84	28.4	35.27	9.5	Absent	Green	Absent	Light Green
117	22.02	32.18	31.98	15.81	Absent	Green	Absent	Light Green
118	21.94	27.31	25.86	13.21	Absent	Green	Absent	Light Green
119	21.71	29.18	30.18	14.71	Absent	Green	Absent	Light Green
120	23.24	30.84	43.16	15.08	Absent	Green	Absent	Light Green
121	20.09	24.96	29.53	14.18	Absent	Green	Absent	Light Green
122	18.69	25.09	23.53	9.24	Absent	Green	Absent	Light Green
124	20.89	29.71	23.04	14.03	Very Slight	Green	Absent	Light Green
127	20.9	30.38	21.14	13.37	Very Slight	Green	Absent	Green
133	23.56	29.53	28.14	13.47	Absent	Green	Absent	Light Green
143	21.38	29.13	29.04	13.37	Absent	Green	Absent	Light Green
144	21.83	30.43	31.74	12.51	Absent	Green	Absent	Light Green
145	20.62	32.44	28.96	12.27	Absent	Green	Absent	Light Green
147	20.29	30.33	35.92	13.68	Absent	Green	Absent	Light Green
148	21.07	29.51	35.91	13.6	Absent	Green	Absent	Light Green
149	21.77	29.15	28.67	13.3	Very Slight	Green	Absent	Light Green
150	22.13	28.11	28.02	15.22	Absent	Green	Absent	Light Green
151	22.78	27.8	39.6	10.55	Absent	Green	Absent	Light Green
152	20.64	25.89	25.29	13.18	Absent	Light Green	Absent	Light Green
153	21.02	26.84	26.73	16.6	Absent	Light Green	Absent	Green
154	20.33	28	29.82	11.03	Absent	Green	Absent	Light Green
155	21.51	27.76	27.27	9.54	Absent	Green	Absent	Light Green
156	21.62	30.2	29.26	14.86	Absent	Green	Absent	Light Green
157	20.58	25.2	25.36	14.36	Absent	Green	Absent	Light Green
158	20.73	29.9	29.52	13.09	Very Slight	Green	Absent	Light Green
159	21.82	22.09	20.98	14.4	Slight	Green	Absent	Light Green
160	20.29	24.89	32.6	13.38	Absent	Green	Absent	Light Green
162	20.88	26.6	26.88	9.72	Absent	Green	Absent	Light Green
164	20.96	26.38	28.38	12.44	Absent	Green	Absent	Light Green
165	21.78	26.4	25.02	9.75	Absent	Green	Absent	Green
166	21	26.93	27.44	10.15	Absent	Green	Absent	Light Green
167	23.22	28.76	29.18	10.61	Absent	Green	Absent	Light Green
169	22.56	29	30.89	10.57	Absent	Green	Absent	Light Green
170	18.18	19.51	23.53	13.44	Absent	Green	Absent	Light Green
171	20.78	26.93	24.22	13.61	Absent	Green	Absent	Light Green
172	24.29	30.33	29.96	15.71	Absent	Green	Absent	Light Green
173	20.91	31.8	31.04	12.86	Medium	Green	Absent	Light Green
174	20.31	29.53	28.93	12.97	Slight	Green	Absent	Light Green
175	18.31	24.18	24.98	10.66	Absent	Green	Absent	Light Green
176	20.02	26.58	25.8	13.93	Absent	Green	Absent	Light Green
177	22.36	29.42	31.29	11.76	Absent	Green	Absent	Light Green

Table 1

Continues

178	20.73	26.78	26.51	10.16	Absent	Green	Absent	Light Green
179	18.36	21.24	26.6	14.01	Very Slight	Green	Absent	Light Green
180	21.69	33.84	31.76	15.85	Absent	Green	Absent	Light Green
182	20.67	30.67	35.67	16.03	Absent	Green	Absent	Light Green
188	21.19	31.76	34.57	12.4	Absent	Green	Absent	Light Green
189	21.92	31.17	36.08	16.31	Absent	Green	Absent	Light Green
191	28.94	37.58	37.09	10.65	Absent	Green	Absent	Light Green
192	20.91	29.7	44.18	13.19	Absent	Green	Absent	Light Green
195	19	25	28.33	11.02	Absent	Green	Absent	Light Green
196	19.6	21.4	21.47	10.69	Absent	Green	Absent	Light Green
200	20.51	26.47	34.47	14.97	Absent	Green	Absent	Light Green
201	21.42	31.22	34.33	14.34	Absent	Green	Absent	Light Green
s	21.24	28.23	30.24	12.68				
a*	j	k	l	m	n	o	p	r
1	Many	16.42	15.27	4.08	Green	Medium	53	58
2	Medium	17.9	4.86	3.24	Light Green	Slight	53	58
3	Less	13.13	6.82	3.88	Light Green	Slight	53	60
4	Medium	13.36	6.38	12.41	Light Green	Slight	52	60
5	Medium	16.07	8.13	3.56	Light Green	Slight	54	59
6	Many	22.24	6.49	4.12	Light Green	Slight	52	61
7	Medium	15.09	8.76	3.83	Light Green	Medium	53	59
10	Medium	15.53	11.07	3.92	Light Green	Slight	53	59
11	Less	14.73	6.69	3.6	Light Green	Slight	53	59
12	Medium	17.4	9.13	3.62	Light Green	Slight	54	59
13	Many	13.69	9.43	3.64	Light Green	Medium	54	60
14	Medium	39.09	9.29	4.09	Light Green	Slight	57	63
15	Medium	17.24	13.73	3.96	Light Green	Medium	54	61
16	Medium	9.22	4.49	3.56	Green	Medium	51	61
17	Medium	11.36	27.69	3.76	Light Green	Slight	53	61
18	Many	14.47	10.37	3.64	Light Green	Medium	57	62
20	Medium	14.84	6.98	4.09	Light Green	Slight	55	61
21	Many	14.1	8.4	3.66	Light Green	Slight	54	60
22	Many	15.29	9.29	3.46	Light Green	Slight	54	59
25	Many	18.64	11.13	5.14	Green	Slight	52	57
26	Medium	12.18	5.67	3.96	Light Green	Slight	52	60
27	Medium	13.27	9.18	3.9	Light Green	Slight	56	62
28	Medium	13.42	8.36	3.71	Light Green	Slight	53	56
33	Medium	18.96	13.33	4.3	Green	Slight	55	53
34	Medium	20.49	12.84	4.03	Light Green	Slight	54	61
36	Medium	22.27	13.71	3.58	Light Green	Medium	55	61
37	Medium	14.29	9.27	3.48	Light Green	Slight	57	63
38	Medium	17.49	8.71	3.32	Green	Slight	53	61
39	Medium	17.33	11.24	4.12	Green	Slight	56	61
41	Medium	18.04	11.02	4.64	Green	Medium	56	61
42	Medium	12.22	7.89	3.94	Light Green	Medium	53	59
43	Medium	14.67	11.16	4.08	Green	Medium	52	59
45	Medium	13.33	10.04	3.79	Light Green	Slight	56	61
46	Medium	17.82	11.18	5.14	Light Green	Slight	54	60
47	Medium	8.96	11.64	3.88	Light Green	Medium	57	63
48	Medium	14.04	10.69	4.45	Green	Slight	55	55
49	Medium	30.96	14	4.28	Light Green	Strong	54	49
51	Medium	21.4	11.93	3.44	Light Green	Slight	56	56
52	Medium	12.16	7.89	3.52	Green	Slight	53	61
53	Medium	17.04	11.98	4.09	Green	Strong	53	59
54	Medium	19.33	14.22	4.4	Light Green	Medium	54	60
55	Less	12.36	10.51	4.15	Light Green	Slight	53	58
56	Medium	19.07	8.62	4.16	Green	Medium	57	62
58	Medium	18.51	12.58	3.97	Light Green	Slight	56	62
59	Medium	14.27	11.38	5.12	Light Green	Medium	53	59
60	Medium	18	12.16	4.55	Green	Medium	61	66
61	Medium	15.04	10	3.88	Green	Medium	56	61
62	Medium	17.6	9.6	4.32	Light Green	Medium	59	65
63	Medium	22.69	12.24	3.5	Light Green	Medium	56	61
64	Less	12.7	12.06	4.24	Green	Slight	61	66
65	Medium	19.89	10.96	4.69	Light Green	Slight	53	58
66	Medium	19.33	9.58	3.65	Green	Slight	56	62

Table 1

Continues

67	Less	21.69	8	3.77	Light Green	Slight	55	61
68	Medium	23.8	13.96	4.23	Green	Medium	56	61
69	Medium	14.89	8.38	3.85	Light Green	Medium	56	63
72	Medium	18.49	14.98	4.32	Light Green	Medium	54	60
74	Medium	20.31	7.96	3.74	Green	Medium	55	61
75	Medium	16.18	13.29	4.67	Green	Slight	55	62
78	Medium	17.6	9.33	4.9	Light Green	Slight	54	59
79	Medium	16.02	13.6	3.96	Light Green	Medium	55	62
80	Medium	14.98	6.71	4.24	Light Green	Medium	55	61
81	Medium	19.53	12.62	3.59	Green	Medium	53	62
82	Medium	21.6	9.11	3.46	Light Green	Slight	54	59
83	Less	17.38	10.72	3.5	Light Green	Slight	54	61
84	Medium	16.76	13.89	4.02	Light Green	Slight	55	61
89	Medium	31.71	12.02	3.41	Green	Medium	63	69
91	Medium	18.56	10.89	3.67	Green	Strong	54	61
92	Medium	13.91	10.89	3.79	Light Green	Medium	56	62
93	Medium	16.13	14.73	4.28	Light Green	Medium	56	62
94	Medium	12.82	10.31	4.05	Green	Medium	52	59
101	Medium	18.33	9.6	4.34	Light Green	Slight	55	61
102	Medium	16.78	9.82	4.16	Light Green	Medium	54	60
103	Medium	16.53	10.51	4.21	Light Green	Medium	55	61
104	Less	13.98	9.44	4.35	Light Green	Slight	56	62
105	Medium	17.93	11.93	4.29	Light Green	Slight	56	62
106	Medium	18.67	12.19	3.46	Green	Slight	55	60
107	Medium	20.87	12.76	4.01	Green	Slight	53	60
108	Less	16.98	8.22	3.74	Light Green	Slight	55	61
109	Medium	18.02	10.05	3.46	Light Green	Slight	56	63
110	Medium	15.2	7.73	3.61	Light Green	Slight	56	62
111	Medium	16.22	11.16	4.52	Green	Slight	54	60
112	Medium	14.87	11.42	4.14	Green	Slight	54	61
113	Medium	14.18	9.58	3.94	Light Green	Slight	54	59
114	Medium	21.5	7.54	3.16	Light Green	Slight	55	61
115	Medium	13.33	9.16	3.93	Green	Slight	57	64
116	Medium	17.13	12.47	3.58	Light Green	Slight	56	62
117	Medium	16.8	8.96	3.93	Light Green	Slight	55	61
118	Medium	14.47	7.92	3.48	Light Green	Slight	56	62
119	Medium	17	8.16	4.72	Green	Medium	53	59
120	Less	21.58	13.69	3.64	Light Green	Slight	55	63
121	Medium	8.98	7.2	4.28	Light Green	Slight	56	61
122	Less	13.62	9.18	3.92	Light Green	Slight	56	62
124	Medium	12.73	9.33	4.01	Light Green	Medium	54	59
127	Medium	12.91	10.71	3.31	Green	Slight	55	61
133	Medium	14.03	8.11	3.75	Light Green	Medium	55	60
143	Medium	8.69	5.69	4.06	Light Green	Slight	55	60
144	Medium	14.81	8.1	3.55	Light Green	Medium	54	61
145	Medium	10.16	8.6	3.74	Light Green	Slight	54	60
147	Many	14.31	9.04	4.03	Light Green	Medium	54	60
148	Less	10.44	10.69	4.27	Green	Slight	56	61
149	Medium	8.05	8.72	3.5	Light Green	Medium	55	60
150	Medium	14.44	8.62	3.72	Green	Slight	55	60
151	Medium	19.73	11.82	4.55	Light Green	Medium	53	58
152	Medium	18.89	7.2	3.34	Light Green	Medium	56	61
153	Medium	11.09	9.76	4.06	Light Green	Medium	54	59
154	Less	9.33	10.82	4.29	Light Green	Medium	53	57
155	Medium	11.24	6.91	3.5	Light Green	Medium	54	59
156	Medium	10.2	7.47	4.2	Green	Slight	56	61
157	Medium	15.16	11.58	4.15	Green	Medium	57	62
158	Medium	13.43	8.79	3.24	Light Green	Medium	52	57
159	Medium	8.96	9.53	4.04	Light Green	Slight	54	61
160	Medium	8.96	16.11	5.79	Green	Slight	55	60
162	Medium	9.71	9.93	4.01	Light Green	Medium	53	57
164	Many	15.64	8.31	3.72	Green	Slight	57	62
165	Medium	30.93	11.67	3.66	Green	Medium	64	69
166	Less	28.78	10.24	3.21	Green	Medium	65	69
167	Medium	19.89	12.64	3.13	Light Green	Slight	54	53
169	Medium	15.47	10.56	3.86	Green	Medium	54	61

Table 1
Continues

170	Medium	10.93	5.56	3.74	Green	Slight	56	59
171	Medium	16	9.53	4.07	Light Green	Medium	56	61
172	Medium	14.16	10.38	4.09	Green	Slight	56	61
173	Medium	17.27	11.53	4.05	Light Green	Slight	56	61
174	Medium	17.76	6.04	3.84	Light Green	Slight	56	60
175	Medium	15.04	9.64	4.16	Light Green	Medium	54	60
176	Medium	13.33	9.18	3.93	Green	Slight	57	64
177	Medium	16.91	13.34	4.11	Light Green	Medium	54	58
178	Medium	16.27	7.18	3.41	Light Green	Medium	53	58
179	Many	15.39	9.93	4.23	Light Green	Medium	54	57
180	Medium	12.33	6.18	3.73	Green	Slight	54	59
182	Less	14	9.33	3.73	Light Green	Medium	56	62
188	Medium	18.43	6.9	3.58	Light Green	Slight	53	59
189	Medium	12.92	7.92	4.29	Light Green	Slight	54	59
191	Medium	12.55	17.09	4.02	Green	Slight	54	59
192	Medium	13.76	10.58	3.58	Green	Slight	53	59
195	Medium	15.83	12.17	3.25	Green	Medium	56	62
196	Medium	15	6.62	3.62	Green	Slight	53	59
200	Medium	19.87	11.22	4.1	Light Green	Slight	55	61
201	Medium	15.07	9.58	4.08	Green	Medium	55	61
s		16.2	10.15	4			55	60

Table 2
The Flower and Leaf Characteristics of Some Local *Cucurbita moschata* Duchesne Genotypes

a*	b	c	d	e	f	g	h	i
8	12.49	19.03	14.13	9.18	Very Slight	Dark Green	Absent	Green
9	14.69	20.72	15.33	10.26	Absent	Dark Green	Absent	Green
19	15.13	20.89	16.35	9.73	Very Slight	Dark Green	Absent	Green
23	14.02	19.62	15.66	10.44	Absent	Dark Green	Absent	Green
24	14.27	19.82	15.64	9.06	Absent	Green	Absent	Dark Green
29	18.57	20.98	17.52	10.55	Absent	Green	Absent	Dark Green
30	17.83	17.42	21.75	7.94	Absent	Green	Absent	Light Green
31	20.56	20	15.61	7.66	Absent	Green	Absent	Green
32	12.61	16.37	13.33	6.86	Slight	Dark Green	Absent	Green
40	12.38	16.83	13.46	8.59	Absent	Green	Present	Dark Green
44	15.13	19.97	17.43	6.84	Absent	Dark Green	Absent	Green
50	16.95	21.33	20.05	7.22	Absent	Dark Green	Present	Dark Green
57	20.49	22.16	26.71	12.36	Absent	Green	Absent	Green
70	12.97	16.96	13.48	8.08	Very Slight	Dark Green	Absent	Dark Green
71	22.42	20.24	21.42	10.56	Very Slight	Green	Absent	Light Green
73	20.85	22.3	22.85	10.29	Absent	Dark Green	Absent	Green
76	14.27	19.49	15.51	7.42	Very Slight	Dark Green	Absent	Green
85	20.93	22.67	24.13	8.93	Very Slight	Dark Green	Absent	Green
86	19.11	19.22	27.11	12.59	Absent	Green	Absent	Green
88	16	26.22	19.91	6.74	Very Slight	Dark Green	Absent	Green
90	16.37	21.2	22.93	10.33	Absent	Dark Green	Absent	Green
95	15.8	20.27	17.31	8.07	Absent	Dark Green	Absent	Green
96	17.17	22.83	18.83	9.33	Absent	Dark Green	Absent	Green
97	17.16	22.4	21.16	9.46	Absent	Dark Green	Absent	Dark Green
98	20.98	23.47	19.82	8.82	Absent	Dark Green	Absent	Green
99	19.82	22.24	22.71	10.04	Absent	Dark Green	Absent	Green
100	16.79	21.81	20.21	7.55	Absent	Dark Green	Absent	Green
125	20.51	21.36	22.51	9.75	Absent	Dark Green	Absent	Green
126	13.69	18.6	20.18	6.22	Absent	Dark Green	Absent	Green
128	15.92	20.17	17.2	10.34	Very Slight	Dark Green	Absent	Green
130	14.85	19.44	18.97	6.98	Very Slight	Dark Green	Absent	Green
131	12	18	16.33	7.8	Absent	Dark Green	Absent	Green
132	22.33	24	19	7.6	Very Slight	Dark Green	Absent	Green
134	14.95	20.1	19.19	10.13	Absent	Dark Green	Present	Green
135	16.98	21.73	21.47	6.92	Absent	Dark Green	Present	Green
136	14.67	18.95	17.69	7.11	Absent	Dark Green	Absent	Green
137	17.2	21.84	22.71	9.39	Absent	Dark Green	Absent	Green
138	15.14	21.24	25.62	12.03	Absent	Dark Green	Absent	Green
139	13.87	20.44	28.73	9.94	Absent	Dark Green	Absent	Green
140	17.43	22.1	18.6	7.4	Absent	Dark Green	Absent	Dark Green
141	20.08	22.25	21.63	9.6	Absent	Dark Green	Absent	Green
142	12	20.83	20.39	11.06	Absent	Dark Green	Absent	Green
161	15.59	20.49	22.15	11.79	Absent	Green	Absent	Light Green

Table 2

Continues

163	17.04	20.25	17.02	10.15	Very Slight	Dark Green	Absent	Green
168	18.67	25.33	20.83	7.1	Absent	Dark Green	Absent	Green
s	16.64	20.75	19.57	9.027				
a*	j	k	l	m	n	o	p	r
8	Medium	17.94	14.14	5.59	Dark Green	Strong	60	66
9	Medium	28.18	12.64	4.23	Green	Medium	63	67
19	Medium	20.07	11.85	4.13	Green	Strong	59	65
23	Medium	32.49	11.56	3.27	Green	Medium	64	70
24	Medium	29.58	10.69	3.28	Green	Strong	63	69
29	Medium	31.44	9.64	3.65	Green	Medium	63	69
30	Less	29.08	11.83	4.44	Green	Medium	63	69
31	Less	31.33	10.22	3.14	Green	Medium	64	69
32	Medium	23.74	9.26	4.04	Dark Green	Strong	61	68
40	Less	30.46	13.54	4.2	Green	Medium	64	70
44	Medium	29.87	11.17	3.16	Green	Medium	65	69
50	Medium	34.18	13.09	2.89	Green	Medium	63	68
57	Medium	28.44	10.89	2.85	Green	Medium	65	70
70	Medium	22.61	11.31	4.68	Dark Green	Strong	62	67
71	Less	28.29	9.6	3.84	Green	Medium	64	70
73	Medium	19.36	10.07	4.31	Dark Green	Strong	56	60
76	Medium	29.29	10.53	3.33	Green	Medium	64	70
85	Many	29.2	9.6	3.97	Green	Strong	64	69
86	Medium	15.33	12.89	4.59	Dark Green	Strong	60	66
88	Medium	36.16	10.6	3.49	Green	Medium	63	70
90	Medium	31.8	10.47	3.34	Green	Strong	63	68
95	Medium	30.24	11.58	3.88	Green	Medium	63	69
96	Medium	25.33	10.67	3.8	Green	Medium	65	72
97	Medium	26.89	15.8	4.75	Dark Green	Strong	62	68
98	Medium	30.82	11.87	4.01	Green	Medium	64	69
99	Medium	29.4	10.96	3.03	Green	Medium	65	72
100	Medium	29.36	10.19	3.54	Green	Strong	64	74
125	Medium	28.71	11.49	2.95	Green	Medium	65	70
126	Medium	29.87	11.02	3.05	Green	Medium	63	68
128	Medium	34.27	13.23	4.25	Green	Strong	62	67
130	Medium	30.1	11.18	3.41	Green	Medium	64	69
131	Medium	30.67	10	3.03	Green	Medium	63	68
132	Medium	25	14.33	3.2	Light Green	Medium	65	70
134	Medium	30.54	10.77	3.81	Green	Medium	63	68
135	Medium	28.42	10.6	3.06	Green	Medium	65	70
136	Medium	31.71	10.98	3.74	Green	Medium	65	70
137	Medium	17.84	8.31	4.34	Dark Green	Medium	56	62
138	Medium	30.14	10.05	3.97	Green	Medium	63	69
139	Medium	28.67	11.16	2.92	Green	Medium	63	68
140	Medium	30.49	9.6	3.63	Green	Medium	63	68
141	Medium	31.5	10.42	3.74	Green	Medium	64	69
142	Medium	27.5	10.11	3.91	Green	Medium	64	71
161	Less	33.03	10.51	4.03	Green	Medium	64	70
163	Medium	30.08	12.13	3.1	Green	Strong	64	61
168	Medium	27.5	9.67	3.7	Green	Strong	64	69
s		28.38	11.16	3.72			63	68

* a: genotype number b: leaf sizes (cm)c: leaf width (cm) d: the length of petioles (cm) e: the thickness of petioles (mm) f: the lobed structure in the leaf blades g: the color of leaf blades h: the existence of papilla in leaf blades i: the color of petioles j: the status of prickliness in petioles k: the length of sepals in female flowers (mm) l: the length of pedicles in male flowers (mm) m: the diameter of pedicles in male flowers (mm) n: the color of pedicles in male flowers o: the hairiness status of pedicles p: the period of observation of first male flowers (day) r: the period of observation of first female flowers (day) s: average

3.2. The Flower and Leaf Characteristics of Some Local Cucurbita moschata Duchesne Genotypes

The length of sepals in female flowers of *Cucurbita moschata* Duchesne genotypes, the length of pedicles in male flowers, the averages of the diameter of pedicles in male flowers were found 28.28 mm, 11,16 cm and 3.72 mm respectively. In the 2.22% of genotypes (1 genotype), male flower pedicle was light green, it was dark green in 15.56% of them (7 genotypes) while 82.22% of male flower pedicle was found green. The hairiness in the male flower pedicles in genotypes were determined in the rates of 68.89%, 31.11% , respectively as medium (31 genotypes) and strong (14 genotypes). The date of first male blossoming was determined as the 63.rd day after the sowing of the seeds while first blossoming date of female flowers was determined as the 68.th day after sowing the seeds. In the 100% of genotypes, male flowers blossomed first and protandry is dominant in all them.

Among the genotypes of *Cucurbita moschata* Duchesne, the length of leaves, the width of leaves, the length of petioles and the thickness of petioles were found as 16.64 cm, 20.75cm, 19.57 cm and 9.03 mm, respectively. When they are analyzed from the point of lobbed structure in leaf blades, 73.33% of genotypes (33 genotypes) had no lobbed structure, 24.44% of them (11 genotypes) had very slight and 2.22% of them (1 genotype) had slight lobbed structures. In the examination of genotypes from the point of the color of leaf blades, 20.00% of them (9 genotypes) were found green while the color of leaf blades in 80.00% of them (36 genotypes) were found as dark green. In the 91.11% of the genotypes (41 genotypes), no papilla was determined while it was observed in 8.89% of them (4 genotypes). The genotypes were analyzed from the point of the color of petioles; the rate of light green was 6.67% (3 genotypes, green ones were 77.78% (35 genotypes) and dark green ones were determined as 15.56% (7 genotypes). The observations which were carried out with regard to vestitures in the petioles were evaluated and the level of vestitures was found as little in the 11.11% of genotypes (5 genotypes), medium in the 86.67% of them (39 genotypes) and many in 2.22% of them (1 genotype).

4. Acknowledgements

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