

University of Florida
Central Florida Research & Education Center
Sanford, Florida

Research Report SAN 93-03

November 1992

EVALUATIONS OF PLANT INTRODUCTIONS OF DAUCUS SPECIES
FOR TOLERANCE TO ALTERNARIA DAUCI AND SOME OTHER
HORTICULTURAL CHARACTERISTICS

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INTRODUCTION - This report presents results obtained from a field evaluation of the U.S. Plant Introduction collection of Daucus spp. at Sanford, Florida, during the spring of 1992. The primary objective was to identify useful sources for resistance or tolerance to Alternaria leaf blight caused by the fungus Alternaria dauci. A secondary objective was to gather other useful data on horticultural characteristics of potential interest to plant breeders and geneticists such as root color and shape, flowering and flower characteristics, and growth habit. Most of the accessions tested in this experiment were new or different than those tested in 1989 (Strandberg et. al, 1989).

This research was supported, in part, with funds obtained from a Specific Cooperative Agreement with the U.S. Department of Agriculture, Agricultural Research Service and with assistance of The Root and Bulb Vegetable Crop Advisory committee.

METHODS - Seeds of Daucus accessions were kindly provided by the U.S. Plant Introduction Service, North Central Regional Plant Introduction Station at Ames, Iowa 50011. Most of the accessions were new or different than those tested in a previous test. However, some accessions from the previous test were retested from seed remnants. These are noted in data tables with an asterisk. The experimental plots were established on Myakka fine sand at Sanford, Florida. Carrot seeds hybrid cv. Apollo were planted for the infection rows on March 27. The infection rows consisted of the outside rows and every third row within the plot area; they were later artificially inoculated on two occasions with spores of Alternaria dauci (Strandberg, 1987). Rows were 280 feet long and were on 30-inch centers. Plants were later hand-thinned to 1-2 inches in the row. Plant introduction accessions were hand planted 1-2 days later and were also thinned by hand where needed. Thus, accessions were infected by natural inoculum spread from the adjacent infection rows. Each accession plot consisted of a single row 15 feet long. Cultural activities, pesticide and fertilization treatments with dates of application are presented later.

After disease symptoms appeared, accessions were sampled weekly by collecting 20 leaves at random from each plot. These leaves were compared with an Alternaria leaf blight damage key and classified as to the percent of leaf area damaged (Strandberg, 1988). The average percent leaf area damaged (IAD) on 20 leaves from each accession was calculated weekly.

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The weekly average percent leaf area damage values were used to calculate two types of disease progress curves for each accession. The first were the average LAD values plotted against time. The slopes of these curves (SLOPE) were obtained for each accession. The second was a simple transformation to $\text{Log}_e (X/(1-X))$, where X was the average percent LAD. These values are referred to as Log (X) values and the slopes as LOGSLOPES. The transformation tended to straighten the resulting disease progress curves. Regression lines of these weekly values were used to obtain the slope (SLOPE and LOGSLOPE) of the disease progress curves. Leaf sampling was discontinued when average LAD in the accession reached 40%. This value had been shown to be the maximum useful value for Alternaria leaf blight-damaged leaves; leaves with LAD >40% soon collapsed and died (author, unpublished data).

The subjective AR ratings (RATING) were made according to the following rating system: Subjective rating from 0 = no visible disease damage; 1 = few lesions mostly on older leaves; 2 = numerous lesions on older leaves, scattered on younger leaves; 3 = abundant lesions, some defoliation and leaf damage; 4 = abundant lesions, moderate leaf damage, defoliation; 5 = severe leaf damage and defoliation. Plots that were clearly judged to be intermediate between two classes were assigned fractional values. A plot that was intermediate between a 3 and a 4 rating was assigned a 3.5 rating. Only increments of 0.5 units were used. For some very susceptible lines, subjective ratings were made before the end of the experiment because the plants were rapidly being killed by the disease.

A special category called persistent leaves was used to describe lines where numerous leaves remained alive and persisted for several days or weeks in spite high disease damage ratings and LAD values of 40% or greater. It was concluded that these accessions may express useful levels of disease tolerance. Methods used to obtain observations on horticultural characteristics are described later.

RESULTS AND DISCUSSION

ALTERNARIA LEAF BLIGHT RATINGS -Disease development was very rapid and uniformly distributed in the plots because of the warm, moist, conditions that prevailed. The two inoculations were very effective in establishing disease on the infection rows. Disease damage to many of very susceptible accessions under test was severe within a few weeks after the second inoculation. Good subjective disease damage ratings were obtained for all accessions that germinated. It is unlikely that any lines escaped the severe inoculum loads provided by infection rows. Thus, accessions with low values of Alternaria leaf blight damage ratings (RATING, SLOPE, or LOGSLOPE) probably express useful tolerance (AR) to A. dauci. Subjective AR ratings (RATING) are included in Table 4.

Disease progress curves may also estimate tolerance to Alternaria leaf blight (ALB). Slopes of weekly LAD readings (SLOPE) were not very linear, and often the slope values were unusually large because high inoculum levels created very large weekly increments in disease damage. LAD (X) values transformed by $\text{Log}_e X/(1-X)$ hereafter referred to as Log (X) values produced more linear curves (LOGSLOPE). These values appeared to be more useful for identifying ALB tolerance and are presented in Table 4. Accessions with the lowest RATING, SLOPE, and LOGSLOPE values are summarized in Tables 11 - 15.

DESCRIPTIVE STATISTICS - SLOPES OF REGRESSION LINES OF LOG(x) AND LAD VALUES

VARIABLE	MEAN	S.D.	NON-MISSING	MISSING	MINIMUM	MAXIMUM
LOGSLOPE	5.049	4.272	424	8	-3.749E-02	51.76
SLOPE	1.796	1.313	424	8	-3.900E-03	7.996

FREQUENCY DISTRIBUTIONS

LOGSLOPE			SLOPE		
VALUE	FREQUENCY	% IN CLASS	VALUE	FREQUENCY	% IN CLASS
0	7	1.7	0	134	31.6
1	78	18.4	1	126	29.7
2	61	14.4	2	98	23.1
3	35	8.3	3	37	8.7
4	80	18.7	4	16	3.8
5	22	5.2	5	6	1.4
6	52	12.3	6	3	0.7
7	45	10.6	7	4	0.1
8	10	2.4			
9	7	1.7			
10	10	2.4			
11	1	.2			
13	3	.7			
14	2	.5			
15	1	.2			
17	3	.7			
18	1	.2			
19	1	.2			
23	2	.5			
24	1	.2			
25	1	.2			
51	1	.2			
			NON-MISSING	424	
			MISSING	8	
			TOTAL	432	
NON-MISSING	424				
MISSING	8				
TOTAL	432				

It was not clear from the results if slopes of LAD and Log (X) values were better than subjective ratings for estimating Alternaria leaf blight tolerance. It was thought that both these measurements would be superior to one-time subjective ratings taken at the end of the experiment, but this issue was not resolved. However, concurrent experiments were carried out to examine the relationships between LAD and Log (X) curves, subjective ratings and ratings obtained in controlled environments (Strandberg, 1988) but this study has not been completed. In the concurrent study, a replicated experiment involving 40 test lines, correlation coefficients (r^2) between subjective ratings (RATING) and LAD (SLOPE) and Log (X) (LOGSLOPE) values were 0.10 and 0.59, respectively. These values are low values, and the better correlation between RATING and LOGSLOPE may be due to the transformed values (Log (X)) producing more linear curves (and more realistic values). Thus, slopes of Log (X) (LOGSLOPE) values are proposed to be the better indicator of relative tolerance or resistance. It is also possible that subjective ratings and disease progress curves are estimates of different components of resistance. This possibility is demonstrated by the AR rating descriptor "persistent leaves" where foliage persists in spite of severe disease damage to most of the leaves (values presented in Table 4. Clearly, further analysis of the importance and relationships of these descriptors is needed. Nevertheless, they may all be useful indicators for plant breeders and are all included in this summary.

With the above considerations in mind, very few accessions were identified as having high tolerance to ALB. These were identified by arbitrary threshold values selected after examining the results and the statistical data presented below. Accessions judged to have particularly useful tolerance to ALB as determined by low values of RATING, SLOPE, and LOGSLOPE are listed in Tables 11 - 15.

DESCRIPTIVE STATISTICS FOR SUBJECTIVE ALTERNARIA RATINGS

VARIABLE	MEAN	S.D.	N	MISSING	MINIMUM	MAXIMUM
SUBJECTIVE RATING	3.70	8.833E-01	432	0	0.000	5.000

VALUE	FREQUENCY	PERCENT IN CLASS
0	4	0.1
1	8	1.9
2	21	4.9
3	80	18.5
4	230	53.2
5	89	20.6

TOTAL N = 432

OTHER OBSERVATIONS

VIGOR - Plant emergence and established stand were observed three weeks after emergence. Some accessions emerged later, but these were appropriately rated. A subjective rating was used: 0 = no plants; 1 = very small (< 2 inches); 2 = moderate top growth (2-4 inches); 3 = good top growth compared with Apollo (> 4 inches). These results are presented in Table 1.

STAND - Value shown indicates relative number of plants present and indicates the relative number of plants in the plot that were used to rate the accession as well as seed viability since approximately 100 seeds were planted in each plot. The subjective rating system listed below was used. Values are presented in Table 1.

- 0 No plants present
- 1 1 to 5 plants
- 2 6 to 15 plants
- 3 > 15 plants

HABIT - The growth habit of plants was observed 6-7 weeks after emergence and described with the simple descriptors listed below. These results are included in Table 2.

- P Procumbent
- S Spreading
- U Upright
- U/S Upright with slight spreading

FOLIAGE TYPE - Color of emerged foliage was rated at the same time growth habit was observed. Results are included in Table 2. The following simple descriptors were used:

- N Normal green as compared to cv. Apollo
- YG Yellow Green
- PG Pale Green
- DG Dark Green

FLOWERING - The relative time of flowering for each accession in relation to planting date was observed. Lines were scored as flowering when several plants within a plot, but not always all the plants, produced expanded and flowering umbels. Value shown is number of weeks from planting that open flowers were observed in a majority of plants. Blank = not flowering. These observations are summarized in Table 2.

FLOWER TYPE AND COLOR - Flower color was determined soon after plants flowered. Simple observations of flower color were taken for possible use as markers. Results for flower color are summarized in Table 2. Abbreviations used to describe flower color are listed below. Comments on type are self explanatory.

PCU	Purple-centered umbel (one or more center umbellets purple)
PCU (dark)	Unusually dark-purple pigmented
Red-CU	Red-centered umbel
YCU	Yellow-centered umbel
N	Normal white-flowered umbel
Lt. Pink	Light Pink Umbel
Blank	No special comments, missing or not rated
NF	Not flowering

ROOT COLOR - The predominant root color or mixtures of root color within an accession was determined by digging up several roots, the number of which depended on the uniformity of the sample. Roots were also cut to determine if interior color differed from outside color. Results are included in Table 3. Abbreviations used to describe root color are listed below. More than one descriptor separated by a dash (-) indicates a mixture of root types.

F	Fibrous white
NR	Not Rated
Or	Orange
dOr	Dark Orange
pOr	Pale Orange
P	Purple
dP	Dark Purple
pP	Pale Purple
R	Red
W	White
Y	Yellow

NOTE: Combinations
separated by /
(for example F/W =
fibrous/white)

ROOT SHAPE - Roots were classified with a diagrammatic key and the predominant root shape in the accession was assigned to the closest type which included; Fresh Market, Emperor, Nantes, Danvers, Chantenay, Large Fodder, White (with storage root) and White Fibrous Root. Roots were also classified as to relative size. These results are presented in Table 3.

OTHER DESCRIPTORS AND SPECIAL TABLES:

Origin, Species, Subspecies and Cultivar	Table 1
Accessions that include or had predominantly orange or dark orange roots	Table 5
Accessions that include or had predominantly purple or dark purple roots	Table 6
Accessions that include or had predominantly yellow roots	Table 7

Accessions with white fibrous or white storage roots	Table 8
Accessions that flowered and produced normal flowers	Table 9
Accessions that flowered and had novel flowering characteristics	Table 10
Accessions with subjective ALB damage ratings (RATING) of 2.0 or less; (useful AR)	Table 11
Accessions with persistent foliage; possible useful AR	Table 12
Accessions with slopes of LAD disease progress curves (SLOPE) of 2.0 or less; (useful AR)	Table 13
Accessions with slopes of LAD disease progress curves (SLOPES) of 0.5 or less	Table 14
Accessions with slopes of Log (X) disease progree curves (LOGSLOPE) of 1.5 or less	Table 15

ABBREVIATIONS OF ORIGIN USED BY PLANT INTRODUCTION SERVICE -

AFGTN	Afghanistan
AUSTRAL	Australia
CZECH	Czechoslovakia
ETHPA	Ethiopia
NLDS	Netherlands
NW ZLD	New Zealand
PKTN	Pakistan
R K	Republic of Korea
S AFCA	South Africa
SWTZLD	Switzerland
UK	United Kingdom
USA	United States of America
USAIDO	USA-Idaho
USAMD	USA-Maryland
YUGSVA	Yugoslavia

ACTIVITY DIARY FOR THIS PROJECT -

- MARCH 24 Beds prepared, Apollo infection rows planted
27 Test rows planted by hand
- APRIL 10 Nematicur Nematicide applied (6 lb./acre)
20-20-20 liquid fertilizer (32 lb./acre)
21 Fusilade herbicide applied
24 Dual herbicide applied (2 pts./acre)
10-4-10 fertilizer applied (550 lb./acre)
28 Mineral Spirits applied (25 gal./acre)
- MAY 3 First inoculation with *Alternaria dauci*
19 10-4-10 fertilizer applied (550 lb./acre)
26 Second inoculation with *Alternaria dauci*
27 Leaf Sampling begins
Mineral Spirits applied (25 gal./acre)
- JUNE 10 10-4-10 fertilizer applied (550 lb./acre)
15 Dual herbicide applied (1.5 pts./acre)
30 Final leaf ratings
Selective damage ratings
- JULY 3 Root and Flower ratings completed
7 Final leaf samples taken

REFERENCES

- Strandberg, J. O., 1987. Isolation, storage and inoculum production methods for *Alternaria dauci*. *Phytopathology* 77:1008-1012.
- Strandberg, J. O., 1988. Establishment of *alternaria* leaf blight on carrots in controlled environments. *Plant Disease* 72:522-526.

TABLE 1. ORIGIN, SUBSPECIES, CULTIVAR, STAND ESTABLISHMENT, AND PLANT VIGOR FOR PLANT INTRODUCTION ACCESSIONS OF DAUCUS CAROTA EVALUATED AT SANFORD, FLORIDA, MARCH-JULY 1992.

ITEM	ACCESSION	ORIGIN	SUB-SPECIES/CULTIVAR	STAND	VIGOR
1	163234	India		2	2
2	163235	India		3	3
3	163238	India		2	2
4	163239	India		1	2
5	163240	India		2	1
6	163241	India		2	3
7	164136	India		3	2
8	164344	India		3	2
9	164388	India		2	2
10	164461	India		2	1
11	164484	India		3	3
12	164689	India		3	3
13	164798	India		3	2
14	164942	Turkey		3	2
15	164943	Turkey		3	2
16	165051	Turkey		3	2
17	165484	India		2	2
18	165522	India		3	2
19	167055	Turkey		2	2
20	167082	Turkey		3	3
21	167143	Turkey		2	2
22	167211	Turkey		3	3
23	169480	Turkey		3	3
24	169482	Turkey		2	2
25	169483	Turkey		3	2
26	169484	Turkey		2	3
27	169485	Turkey		1	1
28	169486	Turkey		3	3
29	169487	Turkey		3	2
30	169488	Turkey		2	2
31	169489	Turkey		3	2
32	169490	Turkey		3	3
33	171641	Turkey		3	3
34	171642	Turkey		3	3
35	171643	Turkey		3	3
36	171644	Turkey		2	2
37	172886	Turkey		3	2
38	172887	Turkey		3	3
39	172890	Turkey		1	2
40	172891	Turkey		3	2
41	172892	Turkey		3	2
42	172893	Turkey		2	2
43	172894	Turkey		3	2
44	173687	Turkey		3	3
45	173688	Turkey		2	2
46	174205	Turkey		3	3
47	174206	Turkey		2	3
48	174207	Turkey		2	3
49	174208	Turkey		3	2
50	174828	India		3	2
51	175132	India		3	3
52	175715	Turkey		3	3
53	175716	Turkey		3	3
54	175717	Turkey		3	3
55	175719	Turkey		3	2
56	176556	Turkey		2	2
57	176557	Turkey		2	2
58	176558	Turkey		2	2
59	176559	Turkey		2	1
60	176560	Turkey		3	3
61	176561	Turkey		3	3
62	176563	Turkey		1	1
63	176564	Turkey		3	3

TABLE 1. CONT'D.

ITEM	ACCESSION	ORIGIN	SUB-SPECIES/CULTIVAR	STAND	VIGOR
64	176969	Turkey		2	2
65	176970	Turkey		2	2
66	177380	Turkey		3	3
67	177381	Turkey		2	1
68	177382	Turkey		2	1
69	177383	Syria		3	3
70	177384	Syria		3	2
71	178900	Turkey		2	3
72	179275	Turkey		2	2
73	179276	Turkey		2	3
74	179277	Iraq		2	2
75	179687	India		3	3
76	179689	India		3	3
77	179690	India		3	3
78	180436	India		2	3
79	181052	India		2	3
80	181765	Lebanon		3	2
81	181766	Lebanon		2	1
82	181767	Lebanon		2	1
83	181880	Syria		3	2
84	182204	Turkey		2	1
85	182206	Turkey		2	2
86	183401	India		2	2
87	187234	Belgium		3	1
88	187235	Belgium		3	1
89	187236	Belgium		3	2
90	187237	Belgium		3	2
91	193504	Ethiopia		3	2
92	196847	Ethiopia		3	3
93	200876	Afghanistan		3	3
94	204702	Turkey		2	2
95	204703	Turkey		2	2
96	204704	Turkey		3	3
97	205997	Sweden		3	1
98	205998	Sweden		2	2
99	205999	Sweden		3	2
100	206960	Turkey		3	3
101	211590	Afghanistan		2	2
102	211591	Afghanistan		3	3
103	211592	Afghanistan		2	2
104	212096	Afghanistan		1	3
105	213251	India		2	3
106	217527	Pakistan		2	2
107	218076	Pakistan		2	2
108	219914	Afghanistan		1	2
109	220014	Afghanistan		2	2
110	220285	Afghanistan		2	2
111	220517	Afghanistan		2	3
112	220657	Afghanistan		2	2
113	220794	Afghanistan		3	1
114	220795	Afghanistan		3	3
115	221924	Afghanistan		3	2
116	222249	Iran		3	2
117	222250	Iran		3	2
118	222794	Iran		3	3
119	223360	Iran		3	3
120	223361	Iran		3	1
121	223362	Iran		2	1
122	223504	Afghanistan		3	3
123	223777	Afghanistan		2	2
124	224689	Myanmar		3	2
125	225866	Denmark		3	2
126	225867	Denmark		3	1
127	225868	Denmark		3	2

TABLE 1. CONT'D.

ITEM	ACCESSION	ORIGIN	SUB-SPECIES/CULTIVAR	STAND	VIGOR
128	225869	Denmark		3	1
129	225870	Denmark		3	1
130	225871	Denmark		3	1
131	225872	Denmark		3	1
132	226043	Japan		3	1
133	226310	Mexico		3	3
134	226464	Iran		3	3
135	226636	Iran		2	1
136	227014	Iran		3	1
137	227116	New Zealand		2	1
138	229752	Iran		1	1
139	230243	Iran		3	3
140	230723	Netherlands		3	2
141	232073	South Africa		3	2
142	234619	South Africa		3	2
143	234620	South Africa		3	3
144	234621	South Africa		1	1
145	234622	New Zealand		2	1
146	234623	New Zealand		3	2
147	242385	USA-Maryland		3	2
148	249535	Spain		3	3
149	251522	Iran		2	2
150	254552	Afghanistan		3	2
151	256065	Afghanistan		2	1
152	256066	Afgahanistan		3	2
153	261613	Spain		3	2
154	261614	Spain		3	2
155	261646	Netherlands		2	2
156	261647	Netherlands		2	2
157	261648	Netherlands		3	2
158	261650	Netherlands		2	1
159	261781	France		2	2
160	261782	France		2	2
161	261783	France		2	3
162	263016	United Kingdom		2	2
163	263019	United Kingdom		1	1
164	263022	United Kingdom		2	2
165	263023	United Kingdom		2	1
166	263024	United Kingdom		2	1
167	263601	France		3	1
168	264232	France		3	2
169	264233	France		2	2
170	264234	France		3	2
171	264235	France		3	2
172	264236	France		3	2
173	264237	France		2	2
174	264238	France		2	2
175	264543	Japan		2	2
176	264669	Germany		3	2
177	267089	USSR		3	3
178	267090	USSR		1	2
179	267091	USSR		3	3
180	268382	Afghanistan		3	2
181	269316	Sweden	VERTOU	2	2
182	269317	Sweden	LONDON TORG	3	3
183	269318	Sweden	LONDON TORG II	3	2
184	269319	Sweden		3	2
185	269320	Sweden		3	1
186	269321	Sweden		2	1
187	269322	Sweden		2	1
188	269485	Pakistan		2	1
189	269487	Pakistan		2	2
190	269488	Pakistan		3	3

TABLE 1. CONT'D.

ITEM	ACCESSION	ORIGIN	SUB-SPECIES/CULTIVAR	STAND	VIGOR
191	271044	India		3	3
192	271470	India		3	3
193	271471	India		3	3
194	271473	India		3	3
195	272258	South Africa		2	1
196	273658	Ethiopia		2	2
197	274297	Pakistan		3	1
198	274298	Pakistan		2	1
199	274789	India		3	2
200	274909	Turkey	Rec'd as sp.	3	1
201	276325	Denmark		3	1
202	277065	USSR		3	1
203	277285	India		3	2
204	277668	Netherlands		3	2
205	277669	Netherlands		3	1
206	277709	Netherlands		3	2
207	277710	Netherlands		3	2
208	277711	Netherlands		3	2
209	279762	Hungary	NC-7	3	2
210	279763	Israel	*(D muricatus)	3	1
211	279775	Hungary		3	1
212	279777	Egypt		3	3
213	279782	Hungary		3	1
214	279784	Denmark		3	2
215	280702	Czechoslovakia		2	2
216	280706	Chile	*(pusillus)	2	2
217	282480	USSR		2	2
218	284700	Sweden		3	2
219	284701	Sweden		2	2
220	284773	Sweden		2	2
221	285612	Poland		2	2
222	285613	Poland		3	2
223	285614	Poland		3	2
224	285615	Poland		3	2
225	285616	Poland		3	1
226	285617	Poland		3	2
227	285618	Poland		2	2
228	285619	Poland		3	3
229	285620	Poland		3	2
230	285621	Poland		3	2
231	285622	Poland		3	2
232	285623	Poland		3	2
233	287113	Uruguay		2	1
234	287518	India		1	1
235	288242	Egypt		1	2
236	288243	Egypt		2	2
237	288457	India		3	3
238	288458	India		3	3
239	288461	India		3	3
240	288765	India		3	3
241	289700	Australia		3	1
242	290762	Netherlands		3	2
243	294079	Japan		3	2
244	294080	Japan		3	2
245	294081	Japan		2	2
246	294082	Japan		1	1
247	294083	Japan		3	2
248	294084	Japan		3	2
249	294086	Japan		3	1
250	294087	Japan		3	2
251	294088	Japan		3	3
252	294089	Japan		2	1
253	294090	Japan		3	2
254	294637	Jordan		3	3

TABLE 1. CONT'D.

ITEM	ACCESSION	ORIGIN	SUB-SPECIES/CULTIVAR	STAND	VIGOR
255	295861	Spain		3	1
256	295862	Spain		3	1
257	298415	Turkey		3	2
258	299026	Sweden		3	1
259	305443	USA-Idaho		3	1
260	306588	Japan		3	2
261	306810	New Zealand		3	3
262	308981	Romania		3	2
263	319858	Japan		3	3
264	319859	Japan		2	3
265	319860	Japan		3	2
266	321688	Japan		3	3
267	321689	Japan		3	2
268	324240	Sweden		3	2
269	324241	Sweden		3	2
270	325308	USSR		3	2
271	325984	USSR		3	2
272	325985	USSR		3	2
273	325986	USSR		2	2
274	325987	USSR		3	3
275	325988	USSR		3	2
276	325989	USSR		3	2
277	325990	USSR		2	2
278	325991	USSR		3	2
279	325992	USSR		3	3
280	325993	USSR		3	2
281	325994	USSR		3	2
282	325995	USSR		2	2
283	325996	USSR		2	2
284	325997	USSR		3	2
285	325998	USSR		2	1
286	325999	USSR		3	2
287	326000	USSR		3	2
288	326001	USSR		3	2
289	326002	USSR		3	2
290	326003	USSR		3	3
291	326004	USSR		2	2
292	326005	USSR		3	3
293	326006	USSR		3	2
294	326007	USSR		2	2
295	326009	USSR		2	2
296	326010	USSR		3	2
297	326011	USSR		3	3
298	326012	USSR		3	2
299	326013	USSR		3	3
300	326014	USSR		3	2
301	326015	USSR		3	2
302	339251	Turkey		3	3
303	339252	Turkey		2	3
304	339254	Turkey		3	2
305	341204	France	Flakkee	3	2
306	341205	France		3	2
307	341206	France	Nantaise de Maininet	3	2
308	341207	France		2	2
309	341208	France		3	2
310	341209	France	Touchon	3	2
311	341892	Uruguay		1	1
312	341902	Israel	*(littoralis)	3	1
313	344072	Turkey		2	3
314	344110	Poland		3	2
315	344360	Turkey		3	2
316	344361	Turkey		2	3
317	344362	Turkey		3	3
318	344363	Turkey		3	2

TABLE 1. CONT'D.

ITEM	ACCESSION	ORIGIN	SUB-SPECIES/CULTIVAR	STAND	VIGOR
319	344364	Turkey			
320	344446	Iran		3	2
321	344447	Iran		2	2
322	349267	Uruguay	*(pusillus)	3	1
323	357975	Yugoslavia	STIPSKI	3	2
324	357976	Yugoslavia	DOLG	2	2
325	357977	Yugoslavia	OHRIDSKI	0	0
326	357978	Yugoslavia	KONUSOVIDEN	2	2
327	357979	Yugoslavia	DOMASEN	2	2
328	357980	Yugoslavia	KUMANOVSKI	3	2
329	357981	Yugoslavia	PRILEPSKI	3	2
330	357982	Yugoslavia	DOMASEN	3	2
331	357983	Yugoslavia	STARA SORTA	3	3
332	357984	Yugoslavia	MESTEN	2	2
333	357985	Yugoslavia	TROMAK	3	2
334	357986	Yugoslavia	TAP	3	1
335	357988	Yugoslavia	BITOLSKI	3	3
336	368620	Yugoslavia	DOLG	3	2
337	368621	Yugoslavia	CRVEN	3	2
338	368622	Yugoslavia	OBICEN	3	3
339	368623	Yugoslavia	VRATNICKI	3	2
340	369349	Japan	SAPORO LARGE	3	1
341	370321	India		3	3
342	378533	Germany	HAUBNER RUBI	3	1
343	378882	Germany	KONFRIX	3	1
344	378883	Germany	KUNDULUS	3	2
345	379328	Yugoslavia	PRIZRENSKI	3	3
346	379329	Yugoslavia	IVANKOSKI	3	3
347	390882	Israel		3	2
348	390887	Israel		3	2
349	390891	Israel		2	1
350	390895	Israel		3	1
351	390899	Israel		2	3
352	390900	Israel		3	2
353	390901	Israel		3	1
354	390902	Israel		3	2
355	418967	China	SIAN CHI-TOU	3	3
356	419042	China	Hong Ting Hsian	3	3
357	419084	China		3	3
358	419109	China	Huang pi, hu lo pu	3	3
359	419110	China	Pien kan hung	3	3
360	419184	China	Pan Te Hung	3	3
361	430524	USSR		3	3
362	430525	USSR	Zardek	3	2
363	430527	USSR	Murzon	3	2
364	430528	USSR		3	2
365	430529	USSR	Mirzon Zeltaja	3	3
366	430530	USSR	Msaki Supx	3	3
367	430531	USSR		3	3
368	430532	USSR	Daghestan	3	2
369	430533	USSR		3	1
370	432898	China	Red carrot	3	3
371	432899	China	Chang hong	3	3
372	432901	China	Yellow carrot 12	3	3
373	432902	China	Xiao feng	3	3
374	432903	China	Sa-101	3	3
375	432904	China	H-001	3	3
376	432905	China	Sa-102	3	3
377	432906	China	Sa-103	3	3
378	451752	Netherlands	Lange witte groen kop	3	3
379	451753	Netherlands	Biariacus 801	3	2
380	451754	Netherlands	Mollestaart	3	2
381	451755	Netherlands	Lange gele stomper	3	3
382	451757	Netherlands	Flakee Samo	3	3

TABLE 1. CONT'D.

ITEM	ACCESSION	ORIGIN	SUB-SPECIES/CULTIVAR	STAND	VIGOR
383	451758	Netherlands	Lopee	3	3
384	451760	Netherlands	Flavius	3	2
385	451761	Netherlands	Mommersteeg Lange gele stoppel	3	3
386	458857	USSR		3	3
387	458858	USSR		3	3
388	458859	USSR		3	2
389	458860	USSR	Natez	3	2
390	478369	China	0 71	3	1
391	478370	China	0 70	3	3
392	478859	Italy		3	1
393	478860	France		3	1
394	478861	France		3	1
395	478862	France		3	1
396	478863	Germany		3	1
397	478864	Germany		3	1
398	478865	Germany		3	2
399	478866	Germany		3	2
400	478867	Germany		3	2
401	478869	Germany		3	2
402	478870	Germany		3	2
403	478871	Germany		3	2
404	478872	Germany		3	2
405	478873	Italy		3	2
406	478874	Italy		3	2
407	478875	Italy		3	2
408	478876	Italy		3	2
409	478877	Switzerland		3	2
410	478878	Switzerland		3	2
411	478879	Switzerland		3	2
412	478880	Switzerland		3	2
413	478881	United States		3	1
414	478882	Czechoslovakia		3	1
415	478883	France		2	1
416	483348	Japan	Fall-5 (Sinhukjen-5)	3	3
417	483349	Korea, Republic of	Spring F1 (Spring Favor)	3	3
418	483350	Japan	Spring-5 (Hong Sim-5)	3	3
419	483351	Korea, Republic of	HY Summer Flavor	3	3
420	483352	Japan	Summer-5	3	3
421	502914	Germany	Long red blunt	2	1
422	503345	USSR	Shatria 151-12-3; 2071	2	1
423	293425*	Cyprus	Murica	1	1
424	390881*	Israel		0	0
425	390893*	Israel		2	1
426	390887*	Israel		2	1
427	295863*	Spain	MURICA	1	1
428	390886*	Israel		1	1
429	298414*	Turkey	SP	2	1
430	295857*	Israel	BROTER	0	0
431	390898	Israel		1	1
432	390897*	Israel		1	1

TABLE 2. GROWTH AND FLOWERING CHARACTERISTICS OF PLANT INTRODUCTION ACCESSIONS OF DAUCUS CAROTA EVALUATED AT SANFORD, FLORIDA, MARCH-JULY 1992.

ITEM	ACCESSION	GROWTH HABIT	FOLIAGE TYPE	WEEK OF FLOWERING	FLOWER TYPE - COMMENTS
1	163234	U	N		NF
2	163235	U	N	8	N
3	163238	U	N-PG		NF
4	163239	U/S	N-YG	10	PCU, LG PETALS, FLAT UMBEL
5	163240	U/S	N	11	N, PINK IMMATURE
6	163241	U	N-P	9	PCU, LG PETALS
7	164136	U	N-YG	9	PINK CU, N
8	164344	U	N	11	N
9	164388	U/S	N	10	N
10	164461	U	PG		NF
11	164484	U	N	9	PINK FL.
12	164689	U/S	N	9	N
13	164798	U/S	PG/Y	10	PINK IMMATURE
14	164942	U	PG	9	N, COMPACT UMBEL
15	164943	U	N	11	N
16	165051	U	N	10	NO UMBELS SURVIVING
17	165484	U	N		NF
18	165522	U	N		NF
19	167055	U	PG		NF
20	167082	U	N	8	N
21	167143	U	N	11	N
22	167211	U	N	10	PINK IMMATURE, LG. PETALS, UNEVEN UMBEL
23	169480	U	N	11	N
24	169482	U	N	11	NO UMBEL
25	169483	U/S	N	11	NF
26	169484	U	N	9	N, SMALL PETALED
27	169485	U	N	11	NO UMBELS SURVIVING
28	169486	U	N	11	NF
29	169487	U	N		NF
30	169488	U	N	10	N
31	169489	U	N	12	
32	169490	U	N	12	
33	171641	U	N	12	
34	171642	U	N	11	N
35	171643	U/S	N		NF
36	171644	U/S	PG	12	NO UMBELS SURVIVING
37	172886	S	N		NF
38	172887	U	N	11	NO UMBEL
39	172890	U	YG	10	N
40	172891	U	PG	10	N
41	172892	U/S	PG	9	N
42	172893	S	PG	12	N
43	172894	U/S	N		NF
44	173687	U	N	11	RED/PCU, IMMATURE
45	173688	S	YG		NF
46	174205	U	N	11	NO UMBEL REMAINS
47	174206	U	YG	9	N
48	174207	U	YG	9	PINK IMMATURE
49	174208	U/S	N	11	NO UMBELS SURVIVING
50	174828	U	N	13	NF
51	175132	U	N	8	N
52	175715	U/S	YG	9	N, LG PETALS
53	175716	U	N	12	N, SMALL-PETALED
54	175717	U	YG	11	NO UMBELS SURVIVING
55	175719	U	N		NF
56	176556	U/S	N	12	NF
57	176557	S	YG	11	NF
58	176558	U/S	YG		NF
59	176559	U/S	N		NF
60	176560	U	N	11	N
61	176561	U	N	9	NF
62	176563	U	N		NF

TABLE 2. CONT'D.

ITEM	ACCESSION	GROWTH HABIT	FOLIAGE TYPE	WEEK OF FLOWERING	FLOWER TYPE - COMMENTS
63	176564	U/S	N	11	N
64	176969	U	N	11	NF
65	176970	U/S	YG		NF
66	177380	U	N		NF
67	177381	P	N	13	NF
68	177382	P	N	10	RED PCU, N
69	177383	U	N	10	PINK IMMATURE
70	177384	U/S	PG	9	N
71	178900	U	N	13	NF
72	179275	U/S	PG		NF
73	179276	U	N	9	N
74	179277	U/S	N	10	PINK IMMATURE
75	179687	U	N	8	PINK U, PCU, N
76	179689	U/S	N	8	N, LGT. PINK UMBEL, SMALL, PETALS
77	179690	U	N	9	PINK IMMATURE
78	180436	U/S	N	8	N
79	181052	U/S	YG	8	PINK IMMATURE, OPEN UMBEL
80	181765	U	N		NF
81	181766	U	YG		NF
82	181767	P	N		NF
83	181880	U	N	12	N
84	182204	S	N	11	NO UMBELS SURVIVING
85	182206	U/S	YG	10	N
86	183401	S	YG	9	PCU, LGT. PINK UMBEL, SMALL PETALS
87	187234	U	N		NF
88	187235	U	N		NF
89	187236	U	N		NF
90	187237	U	N		NF
91	193504	U/S	YG		NF
92	196847	U	N		NF
93	200876	U/S	N	8	PCU, PINK UMBEL
94	204702	U/S	N		NF
95	204703	S	N		NF
96	204704	U/S	N	10	NF
97	205997	U	N		NF
98	205998	U	N		NF
99	205999	U	N		NF
100	206960	U	N	9	N
101	211590	S	N	11	N, LARGE-PETALED
102	211591	S	N	9	N
103	211592	S	N	8	N, PINK U
104	212096	U/S	N	9	PINK IMMATURE, UNEVEN UMBEL
105	213251	U/S	N	8	PINK IMMATURE
106	217527	S	N	9	N
107	218076	U/S	YG	13	NF
108	219914	U/S	N		NF
109	220014	U/S	N	8	N, COMPACT UMBEL
110	220285	S	N	10	N, PINK UMBEL
111	220517	S	YG	9	N, PINK UMBEL
112	220657	S	PG	9	PINK IMMATURE
113	220794	U	PG	11	NO UMBELS SURVIVING
114	220795	U/S	N	9	N
115	221924	U/S	N	N	NF
116	222249	S	PG	8	PINK IMMATURE, COMPACT, THICK LEAF
117	222250	U	PG	10	N
118	222794	S	N	10	N
119	223360	S	N	8	PINK UMBEL, N
120	223361	U	PG	11	N
121	223362	S	N	10	N
122	223504	U	N	9	PCU, PINK UMBEL, N
123	223777	U/S	N	10	N
124	224689	U	N		NF
125	225866	U	N		NF

TABLE 2. CONT'D.

ITEM	ACCESSION	GROWTH HABIT	FOLIAGE TYPE	WEEK OF FLOWERING	FLOWER TYPE - COMMENTS
126	225867	U	PG		NF
127	225868	U	N		NF
128	225869	U	N		NF
129	225870	U	N		NF
130	225871	U	N		NF
131	225872	U	N		NF
132	226043	U	N		NF
133	226310	U	N	11	N
134	226464	U	N		NF
135	226636	P	PG	12	DARK PINK IMMATURE, LIGHTER MATURE
136	227014	S	PG	10	N
137	227116	U	N		NF
138	229752	S	PG	11	NO UMBELS SURVIVED, HAIRY LEAVES
139	230243	S	N	9	N
140	230723	U	PG		NF
141	232073	U	N		NF
142	234619	U	N		NF
143	234620	U	N		NF
144	234621	U	N		NF
145	234622	U	N		NF
146	234623	U	N		NF
147	242385	S	N	11	PCU, PINK IMMATURE
148	249535	U	N		NF
149	251522	S	PG	10	DARK PINK IMMATURE, HAIRY LEAVES
150	254552	S	N	9	N
151	256065	S	YG	9	PINK UMBEL, N
152	256066	S	YG	9	PINK IMMATURE
153	261613	U	N	11	N
154	261614	U	N		NF
155	261646	U	N		NF
156	261647	U	YG		NF
157	261648	U/S	YG		NF
158	261650	U	N		NF
159	261781	U	N	11	LARGE PETALS, N
160	261782	U	N		NF
161	261783	U	N	9	N
162	263016	U/S	N		NF
163	263019	U	N		NF
164	263022	U	N		NF
165	263023	U	N		NF
166	263024	U	N		NF
167	263601	P	N		NF
168	264232	U	N		NF
169	264233	U	N		NF
170	264234	U	N		NF
171	264235	U	N		NF
172	264236	U	N		NF
173	264237	U	N		NF
174	264238	U	N		NF
175	264543	U/S	N	10	N
176	264669	U	N		NF
177	267089	U	N		NF
178	267090	U	N	11	N
179	267091	U/S	N	9	WHITE, OPEN UMBEL
180	268382	S	N	10	N
181	269316	U/S	N		NF
182	269317	U	N		NF
183	269318	U	N		NF
184	269319	U/S	N		NF
185	269320	U/S	N		NF
186	269321	U	N		NF
187	269322	U	N		NF
188	269485	P	N	9	PINK TINTED PCU, N

TABLE 2. CONT'D.

ITEM	ACCESSION	GROWTH HABIT	FOLIAGE TYPE	WEEK OF FLOWERING	FLOWER TYPE - COMMENTS
189	269487	U/S	N	9	N
190	269488	U	N	12	N
191	271044	U	N	9	N, PINK UMBEL
192	271470	U	N	9	N
193	271471	U	N	8	PCU, N
194	271473	U/S	YG	8	PCU, N, SMALL PETALS
195	272258	U	N		NF
196	273658	U	N	11	NO UMBELS SURVIVING
197	274297	U	N	12	N
198	274298	U	N	11	N
199	274789	U/S	YG	10	N
200	274909	P	N	11	N
201	276325	U	N		NF
202	277065	P	N	12	DARK PCU
203	277285	U	N		NF
204	277668	U	N		NF
205	277669	U	N		NF
206	277709	U	N		NF
207	277710	U	N		NF
208	277711	U	N		NF
209	279762	U	N		NF
210	279763	P	N	9	PINK & PCU(DARK), SM.FLAT UMBEL
211	279775	U/S	N	10	N
212	279777	U/S	N	9	PCU(DARK), PINK UMBEL, N
213	279782	U/S	N	12	N
214	279784	U	N		NF
215	280702	U/S	N	11	N
216	280706	S	N	10	N
217	282480	U	N		NF
218	284700	U	N		NF
219	284701	U	N		NF
220	284773	U	N		NF
221	285612	U/S	N		NF
222	285613	U/S	N		NF
223	285614	U	N		NF
224	285615	U/S	N		NF
225	285616	U	N		NF
226	285617	U	N		NF
227	285618	U/S	N		NF
228	285619	U	N		NF
229	285620	U	N		NF
230	285621	U/S	N		NF
231	285622	U/S	N		NF
232	285623	U	N		NF
233	287113	P	N		NF
234	287518	U/S	N		NF
235	288242	S	YG	9	PINK UMBEL, N
236	288243	U	N	10	PINK IMMATURE
237	288457	U/S	YG	10	N
238	288458	U/S	N	9	N
239	288461	U	N	10	LIGHT PINK IMMATURE
240	288765	U/S	N	8	N
241	289700	U	N		PCU, N
242	290762	U	N		NF
243	294079	U	N	13	NF
244	294080	U	N		NF
245	294081	U/S	N		NF
246	294082	S	N		NF
247	294083	U/S	N	13	NF
248	294084	U	N		NF
249	294086	U/S	YG		NF
250	294087	U/S	N		NF
251	294088	U	N		NFU, N

TABLE 2. CONT'D.

ITEM	ACCESSION	GROWTH HABIT	FOLIAGE TYPE	WEEK OF FLOWERING	FLOWER TYPE - COMMENTS
252	294089	U/S	N		NF
253	294090	U	N		NF
254	294637	U/S	N	8	PC
255	295861	S	N	11	DARK PCU, N, PINK TIPS IMMATURE
256	295862	S	N	11	DARK PCU, N
257	298415	S	N	12	WHITE, PCU, PINK TIPS IMMATURE
258	299026	S	N		NF
259	305443	U/S	N		NF
260	306588	U	N		NF
261	306810	U	YG		NF
262	308981	S	N		NF
263	319858	U	N	13	NF
264	319859	U/S	N	11	N
265	319860	U	N	10	N
266	321688	U	N	12	NF
267	321689	U	YG	10	N
268	324240	U/S	N		NF
269	324241	U/S	N		NF
270	325308	U/S	N		NF
271	325984	U	N		NF
272	325985	U	N		NF
273	325986	U/S	N		NF
274	325987	U/S	N		NF
275	325988	U	N		NF
276	325989	U/S	N	13	NF
277	325990	U	N		NF
278	325991	U/S	N		NF
279	325992	U	N		NF
280	325993	U/S	N		NF
281	325994	U	N	11	N
282	325995	U	N		NF
283	325996	U/S	YG		NF
284	325997	U/S	YG		NF
285	325998	U/S	N		NF
286	325999	U	N		NF
287	326000	U	N		NF
288	326001	U	N		NF
289	326002	U	N		NF
290	326003	U	N		NF
291	326004	U/S	N		NF
292	326005	U/S	N		NF
293	326006	U	N		NF
294	326007	U	YG		NF
295	326009	U/S	N	12	N
296	326010	U/S	N	11	N
297	326011	U/S	N		NF
298	326012	U	N		NF
299	326013	U	YG		NF
300	326014	U/S	N		NF
301	326015	U	N		NF
302	339251	U/S	N		NF
303	339252	U/S	YG		NF
304	339254	U/S	N		NF
305	341204	U/S	N		NF
306	341205	U/S	N		NF
307	341206	U/S	N		NF
308	341207	U/S	N	12	NO UMBELS SURVIVING
309	341208	U	N		NF
310	341209	U	N		NF
311	341892	P	N		NF
312	341902	P	N	9	NO UMBELS SURVIVING
313	344072	U	YG	11	NO UMBELS SURVIVING
314	344110	U	N		NF

TABLE 2. CONT'D.

ITEM	ACCESSION	GROWTH HABIT	FOLIAGE TYPE	WEEK OF FLOWERING	FLOWER TYPE - COMMENTS
315	344360	U	N		NF
316	344361	U/S	N	11	NF
317	344362	U/S	PG	10	NO UMBELS SURVIVING
318	344363	U/S	YG	12	N
319	344364	U	YG	11	NF
320	344446	U/S	N	10	N
321	344447	U	N	10	N
322	349267	P	N		NF
323	357975	U/S	N		NF
324	357976	U/S	N		NF
325	357977	-	-		NF
326	357978	U/S	N		NF
327	357979	U	N		NF
328	357980	U/S	N		NF
329	357981	U	N		NF
330	357982	U	N		NF
331	357983	U	N		NF
332	357984	U	N		NF
333	357985	U	N		NF
334	357986	U	N		NF
335	357988	U	N	12	NF
336	368620	U	N		NF
337	368621	S	YG		NF
338	368622	U/S	N	11	N
339	368623	S	N		NF
340	369349	U	N		NF
341	370321	U	N	8	LIGHT PINK-CU, N
342	378533	U	N		NF
343	378882	U	N		NF
344	378883	U/S	N		NF
345	379328	U/S	N	11	DARK PCU, N
346	379329	S	N	11	DARK PCU, WHITE, LARGE PETALS
347	390882	S	N	8	PINK IMMATURE, PCU, DARK-PINK-CU
348	390887	S	N	8	PCU, PINK IMMATURE
349	390891	U/S	PG	9	PCU(DARK), PINK UMBEL, N
350	390895	P	PG	8	PINK IMMATURE, PCU
351	390899	S	PG	8	PCU, N
352	390900	S	PG	9	PCU(DARK), N
353	390901	S	YG	9	PCU, N
354	390902	S	YG	8	PINK IMMATURE, PCU
355	418967	U	N	10	N
356	419042	U	N	9	N
357	419084	U	N	9	N
358	419109	U/S	N	11	N
359	419110	U/S	N	11	N
360	419184	U/S	N	10	N
361	430524	U/S	PG		NF
362	430525	U/S	N		NF
363	430527	S	N		NF
364	430528	U/S	N	10	N
365	430529	U	N	10	N
366	430530	U	N		LGT.PINK IMMATURE
367	430531	U	N		NF
368	430532	U	N	10	PINK UMBEL, N
369	430533	U	N		NF
370	432898	U	N	11	PINK IMMATURE
371	432899	U/S	N		NF
372	432901	U	N		NF
373	432902	U	N		NF
374	432903	U	N	11	N
375	432904	U	N		NF
376	432905	U	YG	11	N
377	432906	U/S	N		NF

TABLE 2. CONT'D.

ITEM	ACCESSION	GROWTH HABIT	FOLIAGE TYPE	WEEK OF FLOWERING	FLOWER TYPE - COMMENTS
378	451752	U	N		NF
379	451753	U	N		NF
380	451754	U	N		NF
381	451755	U/S	N		NF
382	451757	U/S	N		NF
383	451758	U	N		NF
384	451760	U/S	N	10	NO UMBELS SURVIVING
385	451761	U	N		NF
386	458857	U	N		NF
387	458858	U	N		NF
388	458859	U	N		NF
389	458860	U	N		NF
390	478369	P	N	12	N
391	478370	U	N		NF
392	478859	P	N		NF
393	478860	P	N		NF
394	478861	P	N		NF
395	478862	P	N		NF
396	478863	P	N		NF
397	478864	P	YG		NF
398	478865	U/S	N		NF
399	478866	S	N		NF
400	478867	S	DG		NF
401	478869	S	DG		NF
402	478870	S	DG	10	DARK PCU, N
403	478871	S	DG	11	DARK PCU, N
404	478872	S	DG		NF
405	478873	P	N	10	LIGHT PINK IMMATURE, LARGE PETALS, PCU
406	478874	S	N	11	DARK PCU, N
407	478875	P	N		NF
408	478876	S	N		NF
409	478877	S	N	13	VERY SMALL FLOWERS
410	478878	S	N	12	N
411	478879	S	N	11	LGT.PINK IMMATURE
412	478880	S	N		NF
413	478881	S	N		NF
414	478882	S	N		NF
415	478883	P	N		NF
416	483348	U	N		NF
417	483349	U	N		NF
418	483350	U	N		NF
419	483351	U	N	11	N
420	483352	U	N	11	N
421	502914	U	N		NF
422	503345	U	N		NF
423	*293425	P	N		NF
424	*390881	-	-		NF
425	*390893	U/S	PG		NF
426	*390887	U/S	PG	10	N
427	*295863	S	PG		NF
428	*390886	U	N		NF
429	*298414	S	N		NF
430	*295857	-	-		NF
431	*390898	S	N	12	N
432	*390897	S	N	13	NF

TABLE 3. ROOT CHARACTERISTICS OF PLANT INTRODUCTON ACCESSIONS OF DAUCUS CAROTA EVALUATED AT SANFORD, FLORIDA, MARCH-JULY 1992.

ITEM	ACCESSION	ROOT TYPE	SIZE	ROOT COLOR(S)
1	163234	DANVERS	SM	Y, Or, W
2	163235	CHANTENAY	N	Or, dOr, P, Y, W
3	163238	DANVERS	N	Or, Y, P
4	163239	WHITE STORAGE		W
5	163240	WHITE STORAGE		W
6	163241	VY LG CHANT/FLAKEE	N	W, dP
7	164136	FRESH MKT	N	W
8	164344	FRESH MKT	SM	Or, W
9	164388	WHITE STORAGE		Y, Or
10	164461	FRESH MKT	N	Or
11	164484	WHITE STORAGE		P
12	164689	WHITE STORAGE		W, Y
13	164798	WHITE FIBROUS		W
14	164942	NANTES	SM	Or, W
15	164943	NANTES	SM	W, Y, Or, P
16	165051	IMPERATOR	N	Or
17	165484	DANVERS	LG	Or
18	165522	NANTES	N	dOr, Or
19	167055	WHITE FIBROUS		dP
20	167082	WHITE STORAGE		P, W
21	167143	FRESH MKT	SM	dP, W, Or, Y
22	167211	WHITE STORAGE		P, W
23	169480	VY LG CHANT/FLAKEE	SM	P, Or, Y
24	169482	IMPERATOR	SM	Or, Y
25	169483	IMPERATOR	SM	W, P, Y
26	169484	IMPERATOR	SM	Y, W
27	169485	FRESH MKT	VSM	W, Or
28	169486	FRESH MKT	SM	Or, Y, W
29	169487	VY LG CHANT/FLAKEE	N	Or, Y
30	169488	IMPERATOR	SM	Or, Y, W
31	169489	IMPERATOR	SM	Or
32	169490	VY LG CHANT/FLAKEE	VSM	Or, P, W
33	171641	VY LG CHANT/FLAKEE	VSM	P, Or, Y
34	171642	FRESH MKT	VSM	W, P, Y
35	171643	IMPERATOR	VSM	P, W
36	171644	DANVERS	VSM	Or, P, W
37	172886	DANVERS	VSM	Y
38	172887	FRESH MKT	VSM	Y, dP
39	172890	WHITE STORAGE		W, dP
40	172891	FRESH MKT	SM	dP, W
41	172892	VY LG CHANT/FLAKEE	N	W, P
42	172893	VY LG CHANT/FLAKEE	N	P, dP
43	172894	FRESH MKT	SM	Or, P, W
44	173687	VY LG CHANT/FLAKEE	SM	P, W
45	173688	DANVERS	N	Or, P, Y
46	174205	NANTES	SM	dOr, P, W
47	174206	WHITE STORAGE		P
48	174207	WHITE STORAGE		Y, W
49	174208	WHITE STORAGE		W
50	174828	VY LG CHANT/FLAKEE	SM	Or, Y
51	175132	WHITE STORAGE		W, P
52	175715	WHITE STORAGE		W
53	175716	WHITE STORAGE		W, P, Y
54	175717	FRESH MKT	VSM	P, W
55	175719	FRESH MKT	N	Or, Y, P
56	176556	IMPERATOR	VSM	Y, W
57	176557	WHITE STORAGE		Y
58	176558	DANVERS	VSM	P, W
59	176559	FRESH MKT	SM	P, W
60	176560	IMPERATOR	SM	P, W
61	176561	IMPERATOR	SM	Or, P, W
62	176563	WHITE FIBROUS		Y
63	176564	IMPERATOR	VSM	P, W

TABLE 3. CONT'D.

ITEM	ACCESSION	ROOT TYPE	SIZE	ROOT COLOR(S)
64	176969	IMPERATOR	SM	Y
65	176970	NANTES	VSM	dP, P, W
66	177380	NANTES	VSM	dP
67	177381	WHITE FIBROUS		W
68	177382	WHITE FIBROUS		W, P
69	177383	IMPERATOR	N	W, P, Or
70	177384	CHANTENAY	N	P, W
71	178900	IMPERATOR	SM	Or, W
72	179275	CHANTENAY	SM	dP, W
73	179276	VY LG CHANT/FLAKEE	VSM	W
74	179277	WHITE STORAGE		P, W
75	179687	VY LG CHANT/FLAKEE	N	dP
76	179689	VY LG CHANT/FLAKEE	N	Y, W, P
77	179690	VY LG CHANT/FLAKEE	N	P
78	180436	VY LG CHANT/FLAKEE	N	P, W
79	181052	CHANTENAY	N	dOr, P, Or
80	181765	NANTES	SM	dOr, Or, W
81	181766	NA		Or
82	181767	IMPERATOR	SM	Y
83	181880	FRESH MKT	SM	dOr, Y, W
84	182204	DANVERS	VSM	Y, W
85	182206	NANTES	SM	P, W
86	183401	WHITE STORAGE		P, Y
87	187234	FRESH MKT	N	dOr
88	187235	FRESH MKT	SM	Or
89	187236	NANTES	N	dOr, Or
90	187237	FRESH MKT	N	Or
91	193504	NANTES	N	Or
92	196847	NANTES	N	Or
93	200876	DANVERS	N	dP, W, Y
94	204702	WHITE STORAGE		Or, W
95	204703	FRESH MKT	VSM	Y
96	204704	FRESH MKT	N	Y, P
97	205997	IMPERATOR	N	Or
98	205998	DANVERS	N	Or
99	205999	IMPERATOR	N	Or
100	206960	IMPERATOR	SM	P, dP
101	211590	FRESH MKT	SM	W, P, Y
102	211591	WHITE STORAGE		W, P
103	211592	FRESH MKT	SM	W, P
104	212096	FRESH MKT	VSM	W
105	213251	WHITE STORAGE		P
106	217527	VY LG CHANT/FLAKEE	SM	dP, P
107	218076	VY LG CHANT/FLAKEE	N	Or
108	219914	NA	-	-
109	220014	IMPERATOR	SM	W, P
110	220285	WHITE STORAGE		W, dP
111	220517	IMPERATOR	SM	W, P, Y
112	220657	WHITE STORAGE		W, P
113	220794	IMPERATOR	VSM	Y
114	220795	WHITE STORAGE		dP, P, W
115	221924	IMPERATOR	VSM	P
116	222249	WHITE STORAGE		P, W
117	222250	DANVERS	N	Or
118	222794	IMPERATOR	SM	Y, W
119	223360	FRESH MKT	VSM	P, W
120	223361	FRESH MKT	VSM	P, dP, W
121	223362	FRESH MKT	VSM	W
122	223504	WHITE STORAGE		dP, W
123	223777	FRESH MKT	SM	P
124	224689	FRESH MKT	N	Y
125	225866	FRESH MKT	N	Or, dOr
126	225867	FRESH MKT	SM	Or
127	225868	DANVERS	N	Or

TABLE 3. CONT'D.

ITEM	ACCESSION	ROOT TYPE	SIZE	ROOT COLOR(S)
128	225869	FRESH MKT	SM	dOr
129	225870	IMPERATOR	SM	Or
130	225871	FRESH MKT	N	Or
131	225872	NANTES	N	Or
132	226043	IMPERATOR	N	dOr
133	226310	DANVERS	N	Or
134	226464	NANTES	N	Or, dOr
135	226636	WHITE STORAGE		W
136	227014	FRESH MKT	SM	P, W
137	227116	DANVERS	SM	Or
138	229752	IMPERATOR	VSM	W
139	230243	NANTES	SM	dP, W
140	230723	NANTES	N	Or
141	232073	DANVERS	LG	Or
142	234619	VY LG CHANT/FLAKEE	N	Or
143	234620	VY LG CHANT/FLAKEE	N	Or
144	234621	CHANTENAY	N	Or
145	234622	FRESH MKT	VSM	Or, Y
146	234623	VY LG CHANT/FLAKEE	N	Or
147	242385	WHITE FIBROUS		W
148	249535	NANTES	LG	Or
149	251522	IMPERATOR	SM	Y, W
150	254552	WHITE STORAGE		Or, dP
151	256065	WHITE FIBROUS		Or, P
152	256066	WHITE STORAGE		Or, P
153	261613	NANTES	LG	Or
154	261614	FRESH MKT	N	Or
155	261646	FRESH MKT	N	Or
156	261647	CHANTENAY	N	Or, dOr
157	261648	IMPERATOR	N	dOr
158	261650	IMPERATOR	N	dOr
159	261781	FRESH MKT	N	dOr
160	261782	NANTES	N	Or
161	261783	FRESH MKT	N	Or, dOr
162	263016	VY LG CHANT/FLAKEE	N	Or, dOr, W
163	263019	NANTES	VSM	Or
164	263022	NANTES	SM	dOr
165	263023	CHANTENAY	SM	dOr
166	263024	DANVERS	VSM	Or, dOr
167	263601	IMPERATOR	VSM	W
168	264232	CHANTENAY	N	Or
169	264233	NANTES	N	dOr, Or
170	264234	NANTES	N	dOr, Or
171	264235	CHANTENAY	SM	Or
172	264236	NANTES	SM	Or
173	264237	NANTES	SM	Or
174	264238	CHANTENAY	N	Or
175	264543	CHANTENAY	SM	P, W, Or
176	264669	FRESH MKT	N	dOr
177	267089	DANVERS	VLG	dP, Y
178	267090	CHANTENAY	N	Or
179	267091	CHANTENAY	SM	Y
180	268382	CHANTENAY	VSM	P, W, dP, Y
181	269316	FRESH MKT	SM	Or
182	269317	DANVERS	LG	Or
183	269318	FRESH MKT	N	Or
184	269319	NANTES	N	Or
185	269320	FRESH MKT	SM	Or
186	269321	CHANTENAY	N	Or
187	269322	NANTES	SM	Or
188	269485	IMPERATOR	VSM	W, P
189	269487	DANVERS	N	dP, P, W
190	269488	DANVERS	LG	Or
191	271044	VY LG CHANT/FLAKEE	LG	P

TABLE 3. CONT'D.

ITEM	ACCESSION	ROOT TYPE	SIZE	ROOT COLOR(S)
192	271470	VY LG CHANT/FLAKEE	N	Y, Or
193	271471	WHITE STORAGE		W
194	271473	WHITE STORAGE		W, P
195	272258	FRESH MKT	N	Y, Or
196	273658	NANTES	N	Or
197	274297	IMPERATOR	VSM	W
198	274298	WHITE FIBROUS		W
199	274789	NANTES	N	Or
200	274909	IMPERATOR	VSM	W
201	276325	FRESH MKT	SM	Or
202	277065	WHITE FIBROUS		W
203	277285	FRESH MKT	N	Or
204	277668	FRESH MKT	SM	Or
205	277669	FRESH MKT	N	Or
206	277709	CHANTENAY	N	Or
207	277710	FRESH MKT	N	Or
208	277711	NANTES	N	Or
209	279762	IMPERATOR	VSM	W
210	279763	WHITE FIBROUS		W
211	279775	WHITE STORAGE		W
212	279777	VY LG CHANT/FLAKEE	SM	Y
213	279782	IMPERATOR	VSM	W
214	279784	IMPERATOR	N	W
215	280702	IMPERATOR	SM	W
216	280706	FRESH MKT	VSM	Y, W, P
217	282480	NANTES	LG	Or
218	284700	DANVERS	N	Or
219	284701	NANTES	N	Or
220	284773	FRESH MKT	LG	Or
221	285612	DANVERS	LG	Y, Or
222	285613	NANTES	LG	W, Or
223	285614	FRESH MKT	SM	Or
224	285615	CHANTENAY	LG	Or
225	285616	NANTES	LG	Or
226	285617	FRESH MKT	LG	Or
227	285618	NANTES	N	Or
228	285619	DANVERS	LG	W
229	285620	DANVERS	SM	W
230	285621	VY LG CHANT/FLAKEE	SM	Y
231	285622	FRESH MKT	N	Y
232	285623	DANVERS	LG	Or
233	287113	WHITE FIBROUS		W, P
234	287518	IMPERATOR	VSM	W
235	288242	IMPERATOR	SM	Or
236	288243	NANTES	N	Or
237	288457	WHITE FIBROUS		P
238	288458	WHITE FIBROUS		P
239	288461	WHITE FIBROUS		dP
240	288765	WHITE STORAGE		P
241	289700	NANTES	SM	Y, Or
242	290762	NANTES	SM	Or
243	294079	DANVERS	N	Or
244	294080	DANVERS	SM	Or
245	294081	CHANTENAY	SM	Or
246	294082	NA	-	-
247	294083	CHANTENAY	SM	Or
248	294084	CHANTENAY	SM	Or
249	294086	IMPERATOR	N	dOr
250	294087	CHANTENAY	SM	Or
251	294088	CHANTENAY	LG	Or
252	294089	FRESH MKT	N	Or
253	294090	FRESH MKT	N	Or
254	294637	WHITE STORAGE		Y
255	295861	WHITE STORAGE		W, Or

TABLE 3. CONT'D.

ITEM	ACCESSION	ROOT TYPE	SIZE	ROOT COLOR(S)
256	295862	WHITE STORAGE		W
257	298415	WHITE STORAGE		W, P
258	299026	FRESH MKT	SM	W, Or
259	305443	CHANTENAY	SM	W, P
260	306588	NANTES	SM	Or
261	306810	FRESH MKT	SM	Or
262	308981	WHITE STORAGE		W
263	319858	FRESH MKT	N	Or
264	319859	FRESH MKT	N	Or
265	319860	FRESH MKT	N	Or
266	321688	FRESH MKT	N	P
267	321689	FRESH MKT	N	W, Or
268	324240	FRESH MKT	SM	Or
269	324241	FRESH MKT	SM	Or
270	325308	WHITE STORAGE		W
271	325984	FRESH MKT	LG	Y, Or
272	325985	FRESH MKT	N	Y, Or
273	325986	FRESH MKT	N	Y
274	325987	FRESH MKT	N	Or
275	325988	FRESH MKT	SM	Or
276	325989	NANTES	SM	Or
277	325990	NANTES	N	Or
278	325991	DANVERS	SM	Or
279	325992	DANVERS	LG	Or
280	325993	CHANTENAY	VSM	Or
281	325994	IMPERATOR	SM	W, Y
282	325995	NANTES	SM	Or
283	325996	DANVERS	SM	Or
284	325997	FRESH MKT	N	dOr, W
285	325998	NANTES	SM	Or
286	325999	FRESH MKT	SM	Or
287	326000	FRESH MKT	SM	Or
288	326001	NANTES	LG	Or, W
289	326002	FRESH MKT	N	Or
290	326003	VY LG CHANT/FLAKEE	LG	Or
291	326004	CHANTENAY	SM	Or
292	326005	CHANTENAY	VSM	Or
293	326006	CHANTENAY	SM	Or
294	326007	NANTES	SM	Or
295	326009	NANTES	SM	W, Or
296	326010	NANTES	N	Or
297	326011	NANTES	SM	Or
298	326012	DANVERS	SM	Or
299	326013	NANTES	N	Or
300	326014	NANTES	N	Or
301	326015	CHANTENAY	VSM	Or
302	339251	NANTES	SM	P
303	339252	FRESH MKT	VSM	dP
304	339254	CHANTENAY	SM	Y
305	341204	FRESH MKT	SM	Or
306	341205	FRESH MKT	SM	Y
307	341206	IMPERATOR	SM	Or, Y
308	341207	CHANTENAY	VSM	Or
309	341208	NANTES	SM	Or
310	341209	NANTES	SM	dOr
311	341892	NA	-	-
312	341902	IMPERATOR	VSM	Or
313	344072	NANTES	SM	W
314	344110	NANTES	SM	Or
315	344360	NANTES	N	Or
316	344361	FRESH MKT	N	W
317	344362	NA	-	-
318	344363	WHITE STORAGE		Y, Or
319	344364	WHITE STORAGE		W

TABLE 3. CONT'D.

ITEM	ACCESSION	ROOT TYPE	SIZE	ROOT COLOR(S)
320	344446	WHITE STORAGE		W, P
321	344447	WHITE STORAGE		W
322	349267	IMPERATOR	VSM	W, Or
323	357975	CHANTENAY	N	Or
324	357976	FRESH MKT	SM	Or
325	357977	NA	-	-
326	357978	FRESH MKT	VLG	Y
327	357979	IMPERATOR	N	Or
328	357980	FRESH MKT	N	Or
329	357981	IMPERATOR	N	Or
330	357982	IMPERATOR	N	Y, Or
331	357983	NANTES	SM	Y, Or
332	357984	NANTES	SM	Or
333	357985	IMPERATOR	SM	Or
334	357986	IMPERATOR	VSM	W, Or
335	357988	FRESH MKT	SM	Y, Or
336	368620	CHANTENAY	VSM	Or
337	368621	IMPERATOR	N	W
338	368622	IMPERATOR	N	W
339	368623	IMPERATOR	VSM	W, Y
340	369349	IMPERATOR	VSM	Or
341	370321	WHITE STORAGE		P
342	378533	CHANTENAY	VSM	Or
343	378882	CHANTENAY	SM	Or
344	378883	CHANTENAY	VSM	Or
345	379328	IMPERATOR	VSM	W
346	379329	IMPERATOR	N	W, Y
347	390882	IMPERATOR	VSM	W, P
348	390887	IMPERATOR	VSM	W
349	390891	IMPERATOR	VSM	W
350	390895	WHITE STORAGE		W
351	390899	IMPERATOR	VSM	W
352	390900	WHITE STORAGE		W, Or
353	390901	WHITE STORAGE		W, P
354	390902	WHITE STORAGE		W, Or
355	418967	IMPERATOR	N	Or
356	419042	IMPERATOR	N	dOr
357	419084	IMPERATOR	N	dOr
358	419109	WHITE FIBROUS		W, P
359	419110	WHITE FIBROUS		W
360	419184	IMPERATOR	N	dOr
361	430524	WHITE STORAGE		W, Y, P
362	430525	IMPERATOR	VSM	W, Or
363	430527	CHANTENAY	LG	Or
364	430528	IMPERATOR	N	Y
365	430529	IMPERATOR	VSM	W
366	430530	IMPERATOR	VSM	Or, W
367	430531	WHITE STORAGE		W
368	430532	NANTES	SM	W, Or
369	430533	NANTES	N	Or
370	432898	WHITE FIBROUS		W
371	432899	DANVERS	SM	P
372	432901	CHANTENAY	SM	Or
373	432902	FRESH MKT	VLG	Y
374	432903	FRESH MKT	N	dOr
375	432904	NANTES	N	Or
376	432905	IMPERATOR	N	Or
377	432906	FRESH MKT	N	Y, P
378	451752	IMPERATOR	N	Y
379	451753	IMPERATOR	SM	Y
380	451754	FRESH MKT	N	Y
381	451755	IMPERATOR	VSM	Y, W
382	451757	IMPERATOR	SM	Y, W
383	451758	IMPERATOR	N	Y

TABLE 3. CONT'D.

ITEM	ACCESSION	ROOT TYPE	SIZE	ROOT COLOR(S)
384	451760	IMPERATOR	SM	P
385	451761	IMPERATOR	N	Y
386	458857	CHANTENAY	SM	Or
387	458858	DANVERS	N	Or
388	458859	NANTES	N	Or
389	458860	IMPERATOR	N	Or
390	478369	WHITE STORAGE		W
391	478370	FRESH MKT	N	Or
392	478859	WHITE STORAGE		W, P
393	478860	WHITE STORAGE		W, P
394	478861	WHITE STORAGE		W
395	478862	WHITE STORAGE		W
396	478863	IMPERATOR	N	W
397	478864	WHITE STORAGE		W
398	478865	WHITE STORAGE		W
399	478866	WHITE STORAGE		W
400	478867	WHITE STORAGE		W
401	478869	WHITE STORAGE		W
402	478870	WHITE STORAGE		W
403	478871	IMPERATOR	VSM	W
404	478872	WHITE STORAGE		W
405	478873	WHITE STORAGE		W
406	478874	WHITE STORAGE		W
407	478875	IMPERATOR	SM	W
408	478876	WHITE STORAGE		W, P
409	478877	WHITE STORAGE		W
410	478878	WHITE STORAGE		W
411	478879	WHITE STORAGE		W
412	478880	WHITE STORAGE		W
413	478881	IMPERATOR	VSM	W
414	478882	IMPERATOR	VSM	Or
415	478883	IMPERATOR	VSM	W
416	483348	DANVERS	VLG	Or
417	483349	FRESH MKT	VLG	dOr
418	483350	FRESH MKT	VLG	dOr
419	483351	IMPERATOR	LG	dOr
420	483352	FRESH MKT	N	Or
421	502914	FRESH MKT	N	dOr
422	503345	FRESH MKT	N	Or
423	293425*	IMPERATOR	VSM	W, Or
424	390881*	NA	-	-
425	390893*	IMPERATOR	VSM	W
426	390887*	WHITE STORAGE		W
427	295863*	WHITE STORAGE		W
428	390886*	IMPERATOR	VSM	W
429	298414*	WHITE FIBROUS		W
430	295857*	NA	-	-
431	390898	IMPERATOR	VSM	W
432	390897*	IMPERATOR	VSM	W

TABLE 4. RESPONSES TO ALTERNARIA DAUCI BY PLANT INTRODUCTION ACCESSIONS EVALUATED AT SANFORD, FLORIDA, MARCH-JULY 1992.

ITEM	ACCESSION	ORIGIN	SUBJECTIVE RATING	PERSISTENT LEAVES	SLOPE X	LOG X
1	163234	India	3		2.072	4.050
2	163235	India	4		2.073	4.052
3	163238	India	4.5		0.897	1.789
4	163239	India	4.5		0.808	2.255
5	163240	India	3.5		1.045	4.133
6	163241	India	4		2.074	4.914
7	164136	India	3.5		2.070	4.879
8	164344	India	2.5		2.992	11.886
9	164388	India	4		0.961	2.375
10	164461	India	4		2.081	4.991
11	164484	India	4.5		2.375	6.627
12	164689	India	4		2.081	4.981
13	164798	India	3.5		2.445	6.981
14	164942	Turkey	4.5		2.056	4.804
15	164943	Turkey	3		2.702	8.646
16	165051	Turkey	5		0.483	1.390
17	165484	India	4.5		2.068	4.871
18	165522	India	4		2.574	7.814
19	167055	Turkey	5		2.048	4.770
20	167082	Turkey	5		0.527	1.660
21	167143	Turkey	3.5		2.074	4.915
22	167211	Turkey	4		1.009	3.666
23	169480	Turkey	4		2.079	4.959
24	169482	Turkey	5		0.477	1.338
25	169483	Turkey	4.5		2.073	4.907
26	169484	Turkey	4		0.585	1.978
27	169485	Turkey	4.5		2.076	4.926
28	169486	Turkey	4.5		2.080	4.975
29	169487	Turkey	4.5		2.513	7.382
30	169488	Turkey	4.5		0.715	1.818
31	169489	Turkey	4		0.480	1.352
32	169490	Turkey	4.5		0.435	1.128
33	171641	Turkey	5		0.730	1.853
34	171642	Turkey	4.5		0.560	1.782
35	171643	Turkey	4.5		0.437	1.104
36	171644	Turkey	3		0.697	1.742
37	172886	Turkey	4.5		0.716	1.832
38	172887	Turkey	5		2.051	4.785
39	172890	Turkey	5-s		2.051	4.785
40	172891	Turkey	5		0.678	1.658
41	172892	Turkey	5		0.415	1.071
42	172893	Turkey	4.5		0.413	1.035
43	172894	Turkey	4		0.859	2.515
44	173687	Turkey	4		2.080	4.975
45	173688	Turkey	4.5		2.066	4.858
46	174205	Turkey	3.5		0.733	1.884
47	174206	Turkey	5-s		0.863	2.527
48	174207	Turkey	5		0.677	1.640
49	174208	Turkey	5		0.899	2.762
50	174828	India	4.5		2.051	4.783
51	175132	India	4.5		0.903	2.778
52	175715	Turkey	5		0.497	1.267
53	175716	Turkey	5		0.447	1.213
54	175717	Turkey	5		0.467	1.265
55	175719	Turkey	4.5		2.069	4.876
56	176556	Turkey	4.5		2.055	4.802
57	176557	Turkey	4.5		2.050	4.777
58	176558	Turkey	5		0.423	1.069
59	176559	Turkey	5		2.066	4.854
60	176560	Turkey	5		0.581	1.979
61	176561	Turkey	5		2.064	4.847
62	176563	Turkey	2		1.503	5.048

TABLE 4. CONT'D.

ITEM	ACCESSION	ORIGIN	SUBJECTIVE RATING	PERSISTENT LEAVES	SLOPE X	LOG X
63	176564	Turkey	4.5		0.962	3.202
64	176969	Turkey	4.5		0.500	1.429
65	176970	Turkey	5		2.055	4.799
66	177380	Turkey	5		0.795	2.164
67	177381	Turkey	1.5		1.381	4.134
68	177382	Turkey	3.5		2.080	4.970
69	177383	Syria	4.5		0.945	3.069
70	177384	Syria	5		0.715	1.808
71	178900	Turkey	4.5		0.940	2.690
72	179275	Turkey	4.5		0.425	1.108
73	179276	Turkey	5-s		1.065	3.069
74	179277	Iraq	5		1.057	3.026
75	179687	India	4.5		0.637	2.611
76	179689	India	4.5		1.281	4.788
77	179690	India	5		0.458	1.268
78	180436	India	4.5		1.275	4.718
79	181052	India	4		0.949	2.487
80	181765	Lebanon	4		2.074	4.911
81	181766	Lebanon	4.5		1.063	3.074
82	181767	Lebanon	3.5		0.917	2.334
83	181880	Syria	5		0.939	2.484
84	182204	Turkey	5		0.884	2.174
85	182206	Turkey	4.5		0.891	2.238
86	183401	India	4		0.499	1.437
87	187234	Belgium	3.5		2.068	4.870
88	187235	Belgium	5		0.414	1.044
89	187236	Belgium	4		0.648	2.314
90	187237	Belgium	4		1.204	4.039
91	193504	Ethiopia	3.5		0.588	1.798
92	196847	Ethiopia	4.5		0.533	1.652
93	200876	Afghanistan	5		0.786	1.953
94	204702	Turkey	4.5		0.508	1.490
95	204703	Turkey	4.5		0.985	2.973
96	204704	Turkey	4.5		0.777	1.938
97	205997	Sweden	4		0.812	2.072
98	205998	Sweden	4		0.534	1.639
99	205999	Sweden	3		0.633	2.155
100	206960	Turkey	4.5		0.915	2.608
101	211590	Afghanistan	5		0.769	1.897
102	211591	Afghanistan	5		0.750	1.777
103	211592	Afghanistan	5		0.468	1.289
104	212096	Afghanistan	5		0.843	2.195
105	213251	India	4.5		0.559	1.807
106	217527	Pakistan	5-s		0.560	1.690
107	218076	Pakistan	4		2.077	4.938
108	219914	Afghanistan	5		2.063	4.840
109	220014	Afghanistan	5		1.176	4.495
110	220285	Afghanistan	5		0.570	1.879
111	220517	Afghanistan	5		0.917	2.514
112	220657	Afghanistan	5		0.774	1.889
113	220794	Afghanistan	5		0.762	1.793
114	220795	Afghanistan	5		1.064	3.377
115	221924	Afghanistan	5		0.816	1.952
116	222249	Iran	4		0.856	2.230
117	222250	Iran	4		0.769	1.835
118	222794	Iran	5		0.767	1.821
119	223360	Iran	5		0.414	1.072
120	223361	Iran	5		0.831	2.101
121	223362	Iran	5		0.775	1.910
122	223504	Afghanistan	5		1.121	3.856
123	223777	Afghanistan	5		1.026	3.117
124	224689	Myanmar	4.5		0.527	1.483
125	225866	Denmark	3.5		-0.003	-0.028

TABLE 4. CONT'D.

ITEM	ACCESSION	ORIGIN	SUBJECTIVE RATING	PERSISTENT LEAVES	SLOPE X	LOG X
126	225867	Denmark	3.5		1.167	4.360
127	225868	Denmark	4.5		0.486	1.296
128	225869	Denmark	4		0.544	1.623
129	225870	Denmark	4		0.581	1.859
130	225871	Denmark	4.5		1.160	4.257
131	225872	Denmark	5		1.092	2.592
132	226043	Japan	2.5		1.372	5.757
133	226310	Mexico	4.5		1.181	4.556
134	226464	Iran	5		2.545	5.964
135	226636	Iran	4.5		0.821	2.006
136	227014	Iran	5		0.427	1.218
137	227116	New Zealand	4.5		2.553	6.016
138	229752	Iran	5		2.528	5.889
139	230243	Iran	5		0.770	1.847
140	230723	Netherlands	4		2.569	6.218
141	232073	South Africa	4		2.561	6.077
142	234619	South Africa	4.5		2.554	6.023
143	234620	South Africa	4.5		2.567	6.174
144	234621	South Africa	3		1.814	6.608
145	234622	New Zealand	3.5		-0.003	-0.027
146	234623	New Zealand	3	YES	1.269	4.446
147	242385	USA-Maryland	2.5	YES	1.243	4.167
148	249535	Spain	4.5		1.235	3.384
149	251522	Iran	4		1.376	5.956
150	254552	Afghanistan	5		1.337	5.199
151	256065	Afghanistan	5		1.034	2.838
152	256066	Afgahanistan	5		0.913	2.251
153	261613	Spain	3.5		0.795	3.441
154	261614	Spain	4.5		0.714	2.973
155	261646	Netherlands	4		2.567	6.172
156	261647	Netherlands	4.5		0.684	2.520
157	261648	Netherlands	2.5	YES	0.713	2.958
158	261650	Netherlands	4-s		2.564	6.115
159	261781	France	4		1.336	5.209
160	261782	France	3.5		1.206	3.854
161	261783	France	4		0.472	1.342
162	263016	United Kingdom	2.5		1.295	4.676
163	263019	United Kingdom	2.5		NA	NA
164	263022	United Kingdom	3.5		1.221	3.963
165	263023	United Kingdom	4		2.563	6.105
166	263024	United Kingdom	4		2.565	6.138
167	263601	France	4		1.608	6.349
168	264232	France	4.5		1.351	4.019
169	264233	France	4.5		1.360	4.073
170	264234	France	4.5		2.563	6.108
171	264235	France	4.5		1.374	5.889
172	264236	France	4.5		1.228	4.011
173	264237	France	4.5		2.566	6.148
174	264238	France	4		1.519	5.236
175	264543	Japan	4		1.358	5.543
176	264669	Germany	4.5		0.700	2.724
177	267089	USSR	4.5		0.694	2.787
178	267090	USSR	4		1.276	4.458
179	267091	USSR	5		0.397	1.267
180	268382	Afghanistan	5		1.184	3.691
181	269316	Sweden	3		2.558	6.053
182	269317	Sweden	4		2.564	6.111
183	269318	Sweden	4		1.384	6.145
184	269319	Sweden	4.5		2.561	6.078
185	269320	Sweden	3	YES	2.569	6.202
186	269321	Sweden	3		1.527	4.405
187	269322	Sweden	4-s		2.571	6.277
188	269485	Pakistan	5		0.871	2.117

TABLE 4. CONT'D.

ITEM	ACCESSION	ORIGIN	SUBJECTIVE RATING	PERSISTENT LEAVES	SLOPE X	LOG X
189	269487	Pakistan	5		0.455	1.164
190	269488	Pakistan	4.5		0.622	2.046
191	271044	India	5		0.526	1.470
192	271470	India	3.5		2.568	6.193
193	271471	India	4.5		2.546	5.971
194	271473	India	5		1.340	5.234
195	272258	South Africa	4		2.559	6.061
196	273658	Ethiopia	4		2.563	6.108
197	274297	Pakistan	4.5		2.566	6.155
198	274298	Pakistan	3.5		2.569	6.206
199	274789	India	3.5		0.634	2.128
200	274909	Turkey	4.5		0.497	1.349
201	276325	Denmark	4		2.567	6.159
202	277065	USSR	3		1.377	5.402
203	277285	India	4.5		2.571	6.277
204	277668	Netherlands	4.5		2.557	6.041
205	277669	Netherlands	4		2.559	6.061
206	277709	Netherlands	4		2.568	6.195
207	277710	Netherlands	4		1.162	2.977
208	277711	Netherlands	4.5		2.556	6.036
209	279762	Hungary	3.5		1.302	4.744
210	279763	Israel	5		1.098	2.653
211	279775	Hungary	4		2.554	6.023
212	279777	Egypt	4		2.560	6.074
213	279782	Hungary	3.5		2.566	6.144
214	279784	Denmark	3.5	YES	1.303	4.743
215	280702	Czechoslovakia	3.5	YES	2.566	6.150
216	280706	Chile	3.5	YES	1.766	6.068
217	282480	USSR	4		0.438	1.594
218	284700	Sweden	4.5		1.083	2.540
219	284701	Sweden	3	YES	5.237	14.897
220	284773	Sweden	3	YES	NA	NA
221	285612	Poland	4		1.096	2.622
222	285613	Poland	4.5		2.547	5.977
223	285614	Poland	4.5	YES	2.553	6.017
224	285615	Poland	3.5	YES	2.562	6.094
225	285616	Poland	4.5		2.558	6.048
226	285617	Poland	4	YES	1.329	3.803
227	285618	Poland	3.5		0.040	0.137
228	285619	Poland	4.5		3.229	7.604
229	285620	Poland	4.5		3.240	7.705
230	285621	Poland	4	YES	3.231	7.618
231	285622	Poland	4	YES	1.371	3.554
232	285623	Poland	3	YES	3.222	7.558
233	287113	Uruguay	4		1.128	3.161
234	287518	India	3.5		3.244	7.771
235	288242	Egypt	5		3.200	7.454
236	288243	Egypt	4		0.730	2.682
237	288457	India	4		0.547	1.571
238	288458	India	4.5		0.492	1.345
239	288461	India	4.5		1.080	3.055
240	288765	India	4.5		0.453	1.167
241	289700	Australia	3	YES	7.742	23.956
242	290762	Netherlands	3	YES	6.662	17.819
243	294079	Japan	3.5		5.006	13.628
244	294080	Japan	3	YES	5.976	19.869
245	294081	Japan	3.5		2.563	6.099
246	294082	Japan	0		6.833	51.761
247	294083	Japan	3.5	YES	5.723	17.840
248	294084	Japan	3	YES	5.335	15.367
249	294086	Japan	3.5		5.781	18.272
250	294087	Japan	4		1.319	3.747
251	294088	Japan	4	YES	1.502	4.992

TABLE 4. CONT'D.

ITEM	ACCESSION	ORIGIN	SUBJECTIVE RATING	PERSISTENT LEAVES	SLOPE X	LOG X
252	294089	Japan	3.5		1.533	4.604
253	294090	Japan	3	YES	0.831	3.726
254	294637	Jordan	5		0.884	2.118
255	295861	Spain	4		3.243	7.755
256	295862	Spain	3.5	YES	2.115	7.478
257	298415	Turkey	4		1.269	4.257
258	299026	Sweden	3	YES	2.078	7.097
259	305443	USA-Idaho	4.5		0.453	1.180
260	306588	Japan	4.5		3.235	7.654
261	306810	New Zealand	4	YES	1.700	5.508
262	308981	Romania	3.5	YES	1.987	6.388
263	319858	Japan	4.5		3.240	7.710
264	319859	Japan	4		3.232	7.624
265	319860	Japan	4.5		0.939	2.438
266	321688	Japan	4.5		0.913	2.263
267	321689	Japan	4		3.234	7.640
268	324240	Sweden	5		3.240	7.707
269	324241	Sweden	4		1.783	6.208
270	325308	USSR	4.5		1.467	4.067
271	325984	USSR	4	YES	1.580	4.654
272	325985	USSR	4	YES	1.476	4.086
273	325986	USSR	4.5		3.242	7.745
274	325987	USSR	4.5		1.453	4.042
275	325988	USSR	5		1.449	3.928
276	325989	USSR	5		3.228	7.597
277	325990	USSR	5		0.492	1.345
278	325991	USSR	4.5		3.220	7.549
279	325992	USSR	4.5		0.562	1.668
280	325993	USSR	4.5		3.233	7.634
281	325994	USSR	4		3.243	7.747
282	325995	USSR	4	YES	1.449	3.962
283	325996	USSR	4.5		3.219	7.541
284	325997	USSR	4.5		3.223	7.565
285	325998	USSR	3		2.117	7.477
286	325999	USSR	3.5		1.983	6.324
287	326000	USSR	4		3.204	7.471
288	326001	USSR	4.5	YES	1.565	4.560
289	326002	USSR	5		1.153	3.468
290	326003	USSR	4.5		0.696	2.893
291	326004	USSR	4.5		3.231	7.620
292	326005	USSR	4.5		1.384	3.641
293	326006	USSR	4.5		3.238	7.684
294	326007	USSR	4.5		3.234	7.646
295	326009	USSR	5		1.017	2.706
296	326010	USSR	4.5		3.200	7.454
297	326011	USSR	4.5		3.233	7.633
298	326012	USSR	4.5		3.238	7.680
299	326013	USSR	4	YES	3.236	7.666
300	326014	USSR	4.5		3.239	7.692
301	326015	USSR	4.5		1.391	5.835
302	339251	Turkey	5		0.492	1.328
303	339252	Turkey	5		0.449	1.187
304	339254	Turkey	4.5		3.226	7.583
305	341204	France	4	YES	1.193	3.461
306	341205	France	4.5		3.247	7.863
307	341206	France	4.5		1.446	4.040
308	341207	France	4.5		1.003	2.679
309	341208	France	4	YES	1.481	4.149
310	341209	France	5		0.609	1.959
311	341892	Uruguay	4		3.228	7.595
312	341902	Israel	5		3.224	7.569
313	344072	Turkey	4.5		0.866	2.017
314	344110	Poland	4.5		3.241	7.717

TABLE 4. CONT'D.

ITEM	ACCESSION	ORIGIN	SUBJECTIVE RATING	PERSISTENT LEAVES	SLOPE X	LOG X
315	344360	Turkey	4		3.234	7.646
316	344361	Turkey	4.5		0.958	2.443
317	344362	Turkey	5		0.451	1.123
318	344363	Turkey	4.5		0.887	2.147
319	344364	Turkey	4.5		0.500	1.367
320	344446	Iran	5		0.453	1.163
321	344447	Iran	4.5		0.887	2.147
322	349267	Uruguay	4		3.239	7.694
323	357975	Yugoslavia	4.5		1.330	4.875
324	357976	Yugoslavia	4.5		3.231	7.620
325	357977	Yugoslavia	5		NA	NA
326	357978	Yugoslavia	4	YES	4.225	10.021
327	357979	Yugoslavia	4		3.924	10.110
328	357980	Yugoslavia	4.5		4.232	10.174
329	357981	Yugoslavia	4.5		4.215	9.926
330	357982	Yugoslavia	4.5		1.448	4.797
331	357983	Yugoslavia	4.5		4.226	10.041
332	357984	Yugoslavia	4.5		4.190	9.782
333	357985	Yugoslavia	4.5		4.219	9.956
334	357986	Yugoslavia	3.5		1.747	5.548
335	357988	Yugoslavia	4		1.629	7.272
336	368620	Yugoslavia	4.5	YES	1.018	2.414
337	368621	Yugoslavia	4	YES	1.677	4.552
338	368622	Yugoslavia	4		1.441	4.719
339	368623	Yugoslavia	4		1.158	3.032
340	369349	Japan	3	YES	1.474	4.035
341	370321	India	4.5		1.324	3.944
342	378533	Germany	4		1.630	4.278
343	378882	Germany	3.5		2.280	7.032
344	378883	Germany	4.5		4.208	9.874
345	379328	Yugoslavia	2.5	YES	2.193	6.422
346	379329	Yugoslavia	4		1.228	3.434
347	390882	Israel	5		1.023	2.458
348	390887	Israel	4		1.457	4.832
349	390891	Israel	4.5		1.082	2.741
350	390895	Israel	5		4.180	9.736
351	390899	Israel	5		0.496	1.263
352	390900	Israel	5		0.497	1.306
353	390901	Israel	5		1.329	3.942
354	390902	Israel	4.5		0.535	1.436
355	418967	China	4.5		1.104	2.844
356	419042	China	4.5		1.530	5.627
357	419084	China	4		0.778	3.469
358	419109	China	3.5	YES	4.230	10.098
359	419110	China	4		1.474	4.982
360	419184	China	3.5		2.113	5.989
361	430524	USSR	4.5		1.016	2.404
362	430525	USSR	4.5		0.697	2.250
363	430527	USSR	4.5		1.027	2.512
364	430528	USSR	5		1.026	2.495
365	430529	USSR	5		1.007	2.354
366	430530	USSR	5		0.494	1.226
367	430531	USSR	5		0.497	1.296
368	430532	USSR	4		1.722	4.690
369	430533	USSR	4.5		1.784	5.018
370	432898	China	3.5	YES	0.834	3.061
371	432899	China	4		1.760	4.909
372	432901	China	4.5		0.397	1.284
373	432902	China	4		1.579	4.015
374	432903	China	4.5		1.028	2.545
375	432904	China	3.5	YES	1.866	6.618
376	432905	China	4.5		1.465	4.919
377	432906	China	3.5	YES	4.573	13.263

TABLE 4. CONT'D.

ITEM	ACCESSION	ORIGIN	SUBJECTIVE RATING	PERSISTENT LEAVES	SLOPE X	LOG X
378	451752	Netherlands	3.5	YES	2.431	8.045
379	451753	Netherlands	3		1.436	3.827
380	451754	Netherlands	3.5		7.703	23.658
381	451755	Netherlands	4		1.494	3.646
382	451757	Netherlands	4		4.219	9.961
383	451758	Netherlands	4.5		1.708	4.633
384	451760	Netherlands	3.5		2.476	8.437
385	451761	Netherlands	4.5		1.657	3.871
386	458857	USSR	4		1.778	4.993
387	458858	USSR	4.5		2.033	6.638
388	458859	USSR	4.5		1.722	4.722
389	458860	USSR	4		1.938	6.003
390	478369	China	3		6.618	17.483
391	478370	China	4	YES	1.028	2.538
392	478859	Italy	2.5	YES	-0.003	-0.024
393	478860	France	2	YES	-0.003	-0.026
394	478861	France	2	YES	-0.004	-0.037
395	478862	France	1.5	YES	1.919	7.340
396	478863	Germany	1.5		NA	NA
397	478864	Germany	2	YES	1.767	4.392
398	478865	Germany	1.5	YES	1.767	4.364
399	478866	Germany	1	YES	2.524	8.963
400	478867	Germany	1	YES	2.517	8.997
401	478869	Germany	1.5	YES	1.874	6.684
402	478870	Germany	1.5	YES	2.501	8.701
403	478871	Germany	2	YES	2.458	8.351
404	478872	Germany	2	YES	2.475	8.499
405	478873	Italy	2.5		2.474	8.465
406	478874	Italy	3.5	YES	4.226	10.030
407	478875	Italy	2	YES	4.233	10.205
408	478876	Italy	3	YES	2.369	7.607
409	478877	Switzerland	4	YES	1.713	4.736
410	478878	Switzerland	3.5	YES	4.224	10.014
411	478879	Switzerland	3.5	YES	2.218	6.599
412	478880	Switzerland	3		1.742	5.585
413	478881	United States	3.5		4.235	10.347
414	478882	Czechoslovakia	2		7.996	25.887
415	478883	France	2	YES	4.234	10.234
416	483348	Japan	3.5	YES	2.014	5.632
417	483349	Korea, Republic of	4.5		1.445	4.212
418	483350	Japan	3.5	YES	7.814	24.582
419	483351	Korea, Republic of	3.5	YES	1.657	8.334
420	483352	Japan	3.5	YES	1.849	4.733
421	502914	Germany	3	YES	1.468	3.996
422	503345	USSR	3.5		2.234	6.719
423	293425*	Cyprus	0	YES	2.072	14.421
424	390881*	Israel	5		NA	NA
425	390893*	Israel	2		-0.002	-0.015
426	390887*	Israel	3.5		2.188	6.352
427	295863*	Spain	2.5		2.553	9.235
428	390886*	Israel	4-s		NA	NA
429	298414*	Turkey	0.5	YES	2.071	13.285
430	295857*	Israel	5		NA	NA
431	390898	Israel	4		NA	NA
432	390897*	Israel	3.5		1.756	4.161

TABLE 5. CARROT ACCESSIONS THAT INCLUDE ORANGE OR DARK ORANGE ROOTS.

ORANGE ROOTS					
163235	196847	263024	285614	325991	357981
163238	204702	264232	285615	325992	357982
164344	205997	264233	285616	325993	357983
164388	205998	264234	285617	325995	357984
164461	205999	264235	285618	325996	357985
164942	218076	264236	285623	325998	357986
164943	222250	264237	288242	325999	357988
165051	225866	264238	288243	326000	368620
165484	225867	264543	289700	326001	369349
165522	225868	267090	290762	326002	378533
167143	225870	269316	294079	326003	378882
169480	225871	269317	294080	326004	378883
169482	225872	269318	294081	326005	390900
169485	226310	269319	294083	326006	390902
169486	226464	269320	294084	326007	418967
169487	227116	269321	294087	326009	430525
169488	230723	269322	294088	326010	430527
169489	232073	269488	294089	326011	430530
169490	234619	271470	294090	326012	430532
171641	234620	272258	295861	326013	430533
171644	234621	273658	299026	326014	432901
172894	234622	274789	306588	326015	432904
173688	234623	276325	306810	341204	432905
174828	249535	277285	319858	341206	458857
175719	254552	277668	319859	341207	458858
176561	256065	277669	319860	341208	458859
177383	256066	277709	321689	341902	458860
178900	261613	277710	324240	344110	478370
181052	261614	277711	324241	344360	478882
181765	261646	282480	325984	344363	483348
181766	261647	284700	325985	349267	483352
187235	261782	284701	325987	357975	503345
187236	261783	284773	325988	357976	293425*
187237	263016	285612	325989	357979	
DARK ORANGE ROOTS					
163235	226043	263024	432903		
165522	226464	264233	483349		
174205	261647	264234	483350		
181052	261648	264669	483351		
181765	261650	294086	502914		
181880	261781	325997			
187234	261783	341209			
187236	263016	419042			
225866	263022	419084			
225869	263023	419184			

TABLE 6. CARROT ACCESSIONS THAT INCLUDE OR HAVE PREDOMINANTLY PURPLE OR DARK PURPLE ROOTS.

PURPLE					
163238	173687	177382	211592	256066	321688
164484	173688	177383	213251	264543	339251
167082	174205	177384	217527	268382	344446
167211	174206	179277	220014	269485	370321
169480	175132	179689	220517	269487	390882
169483	175716	179690	220657	271044	390901
169490	175717	180436	220795	271473	419109
171641	175719	181052	221924	280706	430524
171642	176558	182206	222249	287113	432899
171643	176559	183401	223360	288457	432906
171644	176560	204704	223361	288458	451760
172892	176561	206960	223777	288765	478859
172893	176564	211590	227014	298415	478860
172894	176970	211591	256065	305443	478876

DARK PURPLE					
163241	172891	179687	220795	267089	
167055	172893	200876	223361	268382	
167143	176970	206960	223504	269487	
172887	177380	217527	230243	288461	
172890	179275	220285	254552	339252	

TABLE 7. CARROT ACCESSIONS THAT INCLUDE OR HAVE PREDOMINANTLY YELLOW ROOTS.

171641	179689	234622	325984	379329
171642	181767	251522	325985	430524
172886	181880	267089	325986	430528
172887	182204	267091	325994	432902
173688	183401	271470	339254	432906
174207	200876	272258	341205	451752
174828	204703	279777	341206	451753
175716	204704	280706	344363	451754
175719	211590	285612	357978	451755
176556	220517	285621	357982	451757
176557	220794	285622	357983	451758
176563	222794	289700	357988	451761
176969	224689	294637	368623	
171641	179689	234622	325984	
171642	181767	251522	325985	
172886	181880	267089	325986	
172887	182204	267091	325994	
173688	183401	271470	339254	
174207	200876	272258	341205	
174828	204703	279777	341206	
175716	204704	280706	344363	
175719	211590	285612	357978	
176556	220517	285621	357982	
176557	220794	285622	357983	
176563	222794	289700	357988	
176969	224689	294637	368623	

TABLE 8. CARROT ACCESSIONS WITH WHITE FIBROUS OR WHITE STORAGE ROOTS.

163234	175132	212096	279762	357986	478863
163239	175715	220014	279763	368621	478864
163240	175716	220285	279775	368622	478865
163241	175717	220517	279782	368623	478866
164136	176556	220657	279784	379328	478867
164344	176558	220795	280702	379329	478869
164689	176559	222249	280706	390882	478870
164798	176560	222794	285613	390887	478871
164942	176561	223360	285619	390891	478872
164943	176564	223361	285620	390895	478873
167082	176970	223362	287113	390899	478874
167143	177381	223504	287518	390900	478875
167211	177382	226636	295861	390901	478876
169483	177383	227014	295862	390902	478877
169484	177384	229752	298415	419109	478878
169485	178900	230243	299026	419110	478879
169486	179275	242385	305443	430524	478880
169488	179276	251522	308981	430525	478881
169490	179277	263016	321689	430529	478883
171642	179689	263601	325308	430530	293425*
171643	180436	264543	325994	430531	390893*
171644	181765	268382	325997	430532	390887*
172890	181880	269485	326001	432898	295863*
172891	182204	269487	326009	451755	390886*
172892	182206	271471	344072	451757	298414*
172894	200876	271473	344361	478369	390898
173687	204702	274297	344364	478859	390897*
174205	211590	274298	344446	478860	
174207	211591	274909	344447	478861	
174208	211592	277065	349267	478862	

TABLE 9. ACCESSIONS OF DAUCUS CAROTA THAT PRODUCED NORMAL FLOWERS WITHIN 100 DAYS AFTER PLANTING.

2	163235	78	180436	180	268382	318	344363
8	164344	83	181880	189	269487	320	344446
9	164388	85	182206	192	271470	321	344447
12	164689	100	206960	197	274297	338	368622
15	164943	102	211591	198	274298	355	418967
20	167082	106	217527	199	274789	356	419042
21	167143	114	220795	200	274909	357	419084
23	169480	117	222250	211	279775	358	419109
30	169488	118	222794	213	279782	359	419110
34	171642	120	223361	215	280702	360	419184
39	172890	121	223362	216	280706	364	430528
40	172891	123	223777	237	288457	365	430529
41	172892	133	226310	238	288458	374	432903
42	172893	136	227014	240	288765	376	432905
47	174206	139	230243	264	319859	390	478369
51	175132	150	254552	265	319860	410	478878
60	176560	153	261613	267	321689	419	483351
63	176564	161	261783	281	325994	420	483352
70	177384	175	264543	295	326009	426	*390887
73	179276	178	267090	296	326010	431	*390898

TABLE 10. ACCESSIONS OF DAUCUS CAROTA THAT FLOWERED WITHIN 100 DAYS AFTER PLANTING WHICH EXHIBITED NOVEL FLOWERING CHARACTERISTICS.

4	163239	PCU, LG PETALS, FLAT UMBEL
5	163240	N, PINK IMMATURE
6	163241	PCU, LG PETALS
7	164136	PINK CU, N
11	164484	PINK FL.
13	164798	PINK IMMATURE
14	164942	N, COMPACT UMBEL
16	165051	NO UMBELS SURVIVING
22	167211	PINK IMATURE, LG. PETALS, UNEVEN UMBEL
24	169482	NO UMBEL
26	169484	N, SMALL PETALED
27	169485	NO UMBELS SURVIVING
36	171644	NO UMBELS SURVIVING
38	172887	NO UMBEL
44	173687	RED/PCU, IMMATURE
46	174205	NO UMBEL REMAINS
48	174207	PINK IMMATURE
49	174208	NO UMBELS SURVIVING
52	175715	N, LG PETALS
53	175716	N, SMALL-PETALED
54	175717	NO UMBELS SURVIVING
68	177382	RED PCU, N
69	177383	PINK IMMATURE
74	179277	PINK IMMATURE
75	179687	PINK U, PCU, N
76	179689	N, LGT. PINK UMBEL, SMALL, PETALS
77	179690	PINK IMMATURE
79	181052	PINK IMMATURE, OPEN UMBEL
84	182204	NO UMBELS SURVIVING
86	183401	PCU, LGT. PINK UMBEL, SMALL PETALS
93	200876	PCU, PINK UMBEL
101	211590	N, LARGE-PETALED
103	211592	N, PINK U
104	212096	PINK IMMATURE, UNEVEN UMBEL
105	213251	PINK IMMATURE
109	220014	N, COMPACT UMBEL
110	220285	N, PINK UMBEL
111	220517	N, PINK UMBEL
112	220657	PINK IMMATURE
113	220794	NO UMBELS SURVIVING
116	222249	PINK IMMATURE, COMPACT, THICK LEAF
119	223360	PINK UMBEL, N
122	223504	PCU, PINK UMBEL, N
135	226636	DARK PINK IMMATURE, LIGHTER MATURE
138	229752	NO UMBELS SURVIVED, HAIRY LEAVES
147	242385	PCU, PINK IMMATURE
149	251522	DARK PINK IMMATURE, HAIRY LEAVES
151	256065	PINK UMBEL, N
152	256066	PINK IMMATURE
159	261781	LARGE PETALS, N
179	267091	WHITE, OPEN UMBEL
188	269485	PINK TINTED PCU, N
191	271044	N, PINK UMBEL
193	271471	PCU, N
194	271473	PCU, N, SMALL PETALS
196	273658	NO UMBELS SURVIVING

TABLE 11. ACCESSIONS OF DAUCUS CAROTA WITH A SUBJECTIVE DAMAGE RATING LESS THAN OR EQUAL TO 2.0 (0-5 SCALE) INDICATING USEFUL TOLERANCE OR RESISTANCE TO ALTERNARIA LEAF BLIGHT.

ITEM	ACCESSION	ORIGIN	ALTERNARIA		
			RATING	ROOT TYPE	ROOT COLOR
62	176563	Turkey	2	WHITE FIBROUS	Y/W
67	177381	Turkey	1.5	WHITE FIBROUS	W/W
393	478860	France	2	WHITE STORAGE	W-pP/W
394	478861	France	2	WHITE STORAGE	W/W
395	478862	France	1.5	WHITE STORAGE	W/W
396	478863	Germany	1.5	IMPERATOR	W/W
397	478864	Germany	2	WHITE STORAGE	W/W
398	478865	Germany	1.5	WHITE STORAGE	W/Y
399	478866	Germany	1	WHITE STORAGE	W/W
400	478867	Germany	1	WHITE STORAGE	W/W
401	478869	Germany	1.5	WHITE STORAGE	W/W
402	478870	Germany	1.5	WHITE STORAGE	W/W
403	478871	Germany	2	IMPERATOR	W/W
404	478872	Germany	2	WHITE STORAGE	W/W
407	478875	Italy	2	IMPERATOR	W/W
414	478882	Czechoslovakia	2	IMPERATOR	Or/W
415	478883	France	2	IMPERATOR	W/W
423	293425*	Cyprus	0	IMPERATOR	W-pOr/W
425	390893*	Israel	2	IMPERATOR	W/W
429	298414*	Turkey	0.5	WHITE FIBROUS	W/W

TABLE 12. ACCESSIONS WITH ABUNDANT FOLIAGE THAT PERSISTED AFTER SEVERE ALTERNARIA LEAF BLIGHT DAMAGE.

ITEM	ACCESS	ORIGIN	ALTERNARIA RATING	ITEM	ACCESSION	ORIGIN	ALTERNARIA RATING
146	234623	New Zealand	3	337	368621	Yugoslavia	4
147	242385	USA-Maryland	2.5	340	369349	Japan	3
157	261648	Netherlands	2.5	345	379328	Yugoslavia	2.5
185	269320	Sweden	3	358	419109	China	3.5
214	279784	Denmark	3.5	370	432898	China	3.5
215	280702	Czechoslovakia	3.5	375	432904	China	3.5
216	280706	Chile	3.5	377	432906	China	3.5
219	284701	Sweden	3	378	451752	Netherlands	3.5
220	284773	Sweden	3	391	478370	China	4
223	285614	Poland	4.5	392	478859	Italy	2.5
224	285615	Poland	3.5	393	478860	France	2
226	285617	Poland	4	394	478861	France	2
230	285621	Poland	4	395	478862	France	1.5
231	285622	Poland	4	397	478864	Germany	2
232	285623	Poland	3	398	478865	Germany	1.5
241	289700	Australia	3	399	478866	Germany	1
242	290762	Netherlands	3	400	478867	Germany	1
244	294080	Japan	3	401	478869	Germany	1.5
247	294083	Japan	3.5	402	478870	Germany	1.5
248	294084	Japan	3	403	478871	Germany	2
251	294088	Japan	4	404	478872	Germany	2
253	294090	Japan	3	406	478874	Italy	3.5
256	295862	Spain	3.5	407	478875	Italy	2
258	299026	Sweden	3	408	478876	Italy	3
261	306810	New Zealand	4	409	478877	Switzerland	4
262	308981	Romania	3.5	410	478878	Switzerland	3.5
271	325984	USSR	4	411	478879	Switzerland	3.5
272	325985	USSR	4	415	478883	France	2
282	325995	USSR	4	416	483348	Japan	3.5
288	326001	USSR	4.5	418	483350	Japan	3.5
299	326013	USSR	4	419	483351	Korea, Republic of	3.5
305	341204	France	4	420	483352	Japan	3.5
309	341208	France	4	421	502914	Germany	3
326	357978	Yugoslavia	4	423	293425*	Cyprus	0
336	368620	Yugoslavia	4.5	429	298414*	Turkey	0.5

TABLE 13. ACCESSIONS WITH LOGSLOPE OF DISEASE PROGRESS CURVE LESS THAN OR EQUAL TO 2 AND INDICATING POSSIBLE TOLERANCE TO ALTERNARIA LEAF BLIGHT.

ITEM	ACCESSION	ORIGIN	RATING	PERSIST	SLOPE	LOGSLOPE
16	165051	Turkey	5		0.483	1.390
24	169482	Turkey	5		0.477	1.338
31	169489	Turkey	4		0.480	1.352
32	169490	Turkey	4.5		0.435	1.128
35	171643	Turkey	4.5		0.437	1.104
41	172892	Turkey	5		0.415	1.071
42	172893	Turkey	4.5		0.413	1.035
52	175715	Turkey	5		0.497	1.267
53	175716	Turkey	5		0.447	1.213
54	175717	Turkey	5		0.467	1.265
58	176558	Turkey	5		0.423	1.069
64	176969	Turkey	4.5		0.500	1.429
72	179275	Turkey	4.5		0.425	1.108
77	179690	India	5		0.458	1.268
86	183401	India	4		0.499	1.437
88	187235	Belgium	5		0.414	1.044
94	204702	Turkey	4.5		0.508	1.490
103	211592	Afghanist	5		0.468	1.289
119	223360	Iran	5		0.414	1.072
124	224689	Myanmar	4.5		0.527	1.483
125	225866	Denmark	3.5		-0.003	-0.028
127	225868	Denmark	4.5		0.486	1.296
136	227014	Iran	5		0.427	1.218
145	234622	New Zeala	3.5		-0.003	-0.027
161	261783	France	4		0.472	1.342
163	263019	United Ki	2.5		NA	NA
179	267091	USSR	5		0.397	1.267
189	269487	Pakistan	5		0.455	1.164
191	271044	India	5		0.526	1.470
200	274909	Turkey	4.5		0.497	1.349
220	284773	Sweden	3	YES	NA	NA
227	285618	Poland	3.5		0.040	0.137
238	288458	India	4.5		0.492	1.345
240	288765	India	4.5		0.453	1.167
259	305443	USA-Idaho	4.5		0.453	1.180
277	325990	USSR	5		0.492	1.345
302	339251	Turkey	5		0.492	1.328
303	339252	Turkey	5		0.449	1.187
317	344362	Turkey	5		0.451	1.123
319	344364	Turkey	4.5		0.500	1.367
320	344446	Iran	5		0.453	1.163
325	357977	Yugoslavi	5		NA	NA
351	390899	Israel	5		0.496	1.263
352	390900	Israel	5		0.497	1.306
354	390902	Israel	4.5		0.535	1.436
366	430530	USSR	5		0.494	1.226
367	430531	USSR	5		0.497	1.296
372	432901	China	4.5		0.397	1.284
392	478859	Italy	2.5	YES	-0.003	-0.024
393	478860	France	2	YES	-0.003	-0.026
394	478861	France	2	YES	-0.004	-0.037
396	478863	Germany	1.5		NA	NA
424	390881*	Israel	5		NA	NA
425	390893*	Israel	2		-0.002	-0.015
428	390886*	Israel	4-s		NA	NA
430	295857*	Israel	5		NA	NA
431	390898	Israel	4		NA	NA

TABLE 14. ACCESSIONS WITH SLOPE OF DISEASE PROGRESS CURVE LESS THAN OR EQUAL TO 0.5 INDICATING POSSIBLE TOLERANCE OR RESISTANCE TO ALTERNARIA DAUCI.

ITEM	ACCESSION	ORIGIN	ALTERNARIA RATING	SLOPE	ROOT TYPE
16	165051	Turkey	5	0.483	IMPERATOR
24	169482	Turkey	5	0.477	IMPERATOR
31	169489	Turkey	4	0.48	LG CHANTENAY/FLAKEE
32	169490	Turkey	4.5	0.435	IMPERATOR
35	171643	Turkey	4.5	0.437	LG CHANTENAY/FLAKEE
41	172892	Turkey	5	0.415	LG CHANTENAY/FLAKEE
42	172893	Turkey	4.5	0.413	WHITE STORAGE
52	175715	Turkey	5	0.497	WHITE STORAGE
53	175716	Turkey	5	0.447	MARKET
54	175717	Turkey	5	0.467	DANVERS
58	176558	Turkey	5	0.423	CHANTENAY
72	179275	Turkey	4.5	0.425	LG CHANTENAY/FLAKEE
77	179690	India	5	0.458	WHITE STORAGE
86	183401	India	4	0.499	MARKET
88	187235	Belgium	5	0.414	MARKET
103	211592	Afghanistan	5	0.468	MARKET
119	223360	Iran	5	0.414	MARKET
125	225866	Denmark	3.5	-0.003	DANVERS
127	225868	Denmark	4.5	0.486	MARKET
136	227014	Iran	5	0.427	MARKET
145	234622	New Zealand	3.5	-0.003	MARKET
161	261783	France	4	0.472	CHANTENAY
179	267091	USSR	5	0.397	DANVERS
189	269487	Pakistan	5	0.455	IMPERATOR
200	274909	Turkey	4.5	0.497	NANTES
217	282480	USSR	4	0.438	NANTES
227	285618	Poland	3.5	0.04	WHITE FIBROUS
238	288458	India	4.5	0.492	WHITE STORAGE
240	288765	India	4.5	0.453	CHANTENAY
259	305443	USA-Idaho	4.5	0.453	NANTES
277	325990	USSR	5	0.492	NANTES
302	339251	Turkey	5	0.492	MARKET
303	339252	Turkey	5	0.449	NA
317	344362	Turkey	5	0.451	WHITE STORAGE
320	344446	Iran	5	0.453	IMPERATOR
351	390899	Israel	5	0.496	WHITE STORAGE
352	390900	Israel	5	0.497	IMPERATOR
366	430530	USSR	5	0.494	WHITE STORAGE
367	430531	USSR	5	0.497	CHANTENAY
372	432901	China	4.5	0.397	IMPERATOR
392	478859	Italy	2.5+	-0.003	WHITE STORAGE
393	478860	France	2+	-0.003	WHITE STORAGE
394	478861	France	2+	-0.004	IMPERATOR
425	390893*	Israel	2	-0.002	IMPERATOR

*INDICATES SEED REMNANT FROM 1988 TEST

+INDICATES PERSISTENT FOLIAGE

TABLE 15. ACCESSIONS WITH SLOPE OF DISEASE PROGRESS CURVE (LOG X/1-X) LESS THAN OR EQUAL TO 1.5 INDICATING POSSIBLE TOLERANCE OR RESISTANCE TO ALTERNARIA DAUCI.

ITEM	ACCESSION	ORIGIN	ALTERNARIA RATING	ROOT TYPE	LOGSLOPE
16	165051	Turkey	5	IMPERATOR	1.390
24	169482	Turkey	5	IMPERATOR	1.338
31	169489	Turkey	4	IMPERATOR	1.352
32	169490	Turkey	4.5	LG CHANTENAY/FLAKEE	1.128
35	171643	Turkey	4.5	IMPERATOR	1.104
41	172892	Turkey	5	LG CHANTENAY/FLAKEE	1.071
42	172893	Turkey	4.5	MARKET	1.035
52	175715	Turkey	5	WHITE STORAGE	1.267
53	175716	Turkey	5	WHITE STORAGE	1.213
54	175717	Turkey	5	MARKET	1.265
58	176558	Turkey	5	DANVERS	1.069
64	176969	Turkey	4.5	IMPERATOR	1.429
72	179275	Turkey	4.5	CHANTENAY	1.108
77	179690	India	5	LG CHANTENAY/FLAKEE	1.268
86	183401	India	4	WHITE STORAGE	1.437
88	187235	Belgium	5	MARKET	1.044
94	204702	Turkey	4.5	WHITE STORAGE	1.490
103	211592	Afghanistan	5	MARKET	1.289
119	223360	Iran	5	MARKET	1.072
124	224689	Myanmar	4.5	MARKET	1.483
125	225866	Denmark	3.5	MARKET	-0.028
127	225868	Denmark	4.5	MARKET	1.296
136	227014	Iran	5	MARKET	1.218
145	234622	New Zealand	3.5	MARKET	-0.027
161	261783	France	4	MARKET	1.342
179	267091	USSR	5	CHANTENAY	1.267
189	269487	Pakistan	5	DANVERS	1.164
191	271044	India	5	LG CHANTENAY/FLAKEE	1.470
200	274909	Turkey	4.5	IMPERATOR	1.349
227	285618	Poland	3.5	NANTES	0.137
238	288458	India	4.5	WHITE FIBROUS	1.345
240	288765	India	4.5	WHITE STORAGE	1.167
259	305443	USA-Idaho	4.5	CHANTENAY	1.180
277	325990	USSR	5	NANTES	1.345
302	339251	Turkey	5	NANTES	1.328
303	339252	Turkey	5	MARKET	1.187
317	344362	Turkey	5	NA	1.123
319	344364	Turkey	4.5	WHITE STORAGE	1.367
320	344446	Iran	5	WHITE STORAGE	1.163
351	390899	Israel	5	IMPERATOR	1.263
352	390900	Israel	5	WHITE STORAGE	1.306
354	390902	Israel	4.5	WHITE STORAGE	1.436
366	430530	USSR	5	IMPERATOR	1.226
367	430531	USSR	5	WHITE STORAGE	1.296
372	432901	China	4.5	CHANTENAY	1.284
392	478859	Italy	2.5*	WHITE STORAGE	-0.024
393	478860	France	2*	WHITE STORAGE	-0.026
394	478861	France	2*	WHITE STORAGE	-0.037
425	390893*	Israel	2	IMPERATOR	-0.015