Project title:	Narcissus: Screening new varieties for basal rot susceptibility
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Project Leader:	Andrew Tompsett
Report:	Final report 2009
Previous reports:	Annual reports 2006, 2007 and 2008
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Key words:	daffodils, varieties, cultivars, basal rot, *Fusarium oxysporum f. sp. narcissi*

The results and conclusions in this report are based on a series of experiments conducted over a one-year period. The conditions under which the experiments were carried out and the results have been reported in detail and with accuracy. However, because of the biological nature of the work it must be borne in mind that different circumstances and conditions could produce different results. Therefore, care must be taken with interpretation of the results, especially if they are used as the basis for commercial product recommendations.

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GROWER SUMMARY

Headline

In a screening trial in the Isles of Scilly, of 111 bulb stocks exposed to high basal rot disease pressure, St. Keverne (Div. 2), Kerensa (Div. 1) and Lancaster (Div. 3) headed the list for basal rot resistance. Chinita, (a Div. 9 poet) was also resistant. Many new unnamed seedling stocks showed resistance and Actaea Seeding (Div.9) was also resistant.

Background and expected deliverables

Basal rot *(Fusarium oxysporum f. sp. narcissi),* is the most serious bulb-borne fungal disease of narcissus worldwide and has been damaging daffodil crops for at least 100 years. It remains one of the most intransigent problems for the industry. In the light of reducing availability of chemical controls, growers need to be aware of the relative susceptibility of stocks to basal rot in order to be able to dispose of susceptible stocks and concentrate on growing those showing a degree of disease resistance. In order to identify stock with good resistance to basal rot, a total of 111 bulb stocks were screened under high basal rot pressure in both one-year and two-year-down trials. This basal rot test was developed by Rosewarne Experimental Horticulture Station between 1980 and 1989. It involves planting a healthy test bulb beside a basal rot infested bulb cv. 'Golden Harvest'.

Summary of the project and main conclusions

Disease pressure applied in this test (equivalent to planting a stock with 50% rotten bulbs) revealed susceptibility ranging from 0% - 66%. Losses from two-year-down tests were similar to those occurring in one-year-down tests.

In previous assessments, the variety Dutch Master provided a standard as a moderately susceptible Division 1 trumpet daffodil variety and was therefore included in trial 1. Four stocks were more susceptible than Dutch Master and a total of 16 stocks were at least classed as moderately susceptible. St. Keverne and Kerensa (St. Keverne x Malvern City) showed good resistance with no losses in five of the six tests.

Figures for healthy bulb weight remaining are generally the converse of the basal rot percentage with St. Keverne and Kerensa showing increases of 39 and 27 % respectively. The jonquil hybrid Rosemoor Gold tops the list for bulb yield with 59% weight increase.

Observations on bulb quality revealed that basal rot attack frequently appears to result in poor bulb quality with an enlarged and corky base plate. It is likely that this results in poor root action and subsequent lower bulb yield.

The second trial was of 63 newer stocks and contained no 'standard' varieties. The levels of basal rot were lower than in trial 1. Many of these varieties were raised from the resistant varieties St. Keverne and Dawley. Of the 37 stocks rated resistant (less than 5% basal rot) 18 have St. Keverne or Dawley as one parent. Amongst the most disease resistant varieties were Actaea Seedling (Div. 9), Brackenhurst (Div. 2) and Poetaz Seedling (Div. 8). Actaea Seedling was also a high yielder as were about 17 of the ex-GCRI seedlings.

Financial benefits

Basal rot is probably the most intractable and costly disease that the bulb grower encounters.
Choice of variety depends upon many factors not least of which is the need to grow a sequence of high yielding varieties to provide flowering continuity whilst meeting the demands of the bulb trade. Identifying and discarding those stocks which are prone to basal rot is of huge financial importance. This particularly applies to new varieties where assessing susceptibility to basal rot is

essential as much time and expense will be devoted to building up stock and it is clearly a serious matter if such a variety subsequently proves susceptible to disease under commercial conditions.

Action points for growers

- The information on basal rot susceptibility provided in this project has been accumulated over several years and gives an essential guide to performance in commerce. Growers holding these stocks will be able to assess them for future priority treatment and propagation or as candidates for destruction. The complete list of varieties tested and results is given in the full report, available from HDC.

- Desirable stocks showing a susceptibility to basal rot will need to be observed closely on growers' farms for signs of problems developing and this may necessitate adopting special cultural practices and fungicide treatment.

SCIENCE SECTION

Introduction

Basal rot *(Fusarium oxysporum f. sp. narcissi),* is the most serious bulb-borne fungal disease of narcissus worldwide. The fungus causes root rot, premature leaf senescence and after lifting, bulbs feel soft and may become completely rotten. Basal rot has been damaging daffodil crops for at least 100 years and remains one of the most intransigent problems. Virtually all growers experience some problems and uncertainty every year. The disease causes major problems in the bulb trade, especially exports, and its presence in consignments reflects badly on the industry. For many years the two major varieties 'Golden Harvest' and 'Carlton', together with many others, have recorded varying, but significant, basal rot losses and have had to be routinely treated with fungicides. The replacement of these varieties with resistant stocks was long overdue but is now occurring.

Daffodil breeding at Rosewarne Experimental Horticulture Station and the Glasshouse Crops Research Institute created a pool of new varieties that were not screened for basal rot susceptibility. Resistant parents such as 'St. Keverne' were regularly used in these breeding programmes. A key to names and parentage of the lines tested is given in Appendix 1.

This work sought to give growers information on the basal rot susceptibility of some of the new clones and varieties. The project employed a test which had previously been applied to a range of Rosewarne raised clones. (Tompsett, Acta Horticulturae 177, 1986). To date, no reliable laboratory screening technique has been developed. The field test consisted of planting healthy bulbs of each stock next to inoculator bulbs (Fusarium - rotted 'Golden Harvest' bulbs) and assessing the result after one or two years.

Materials and methods

Trial design and bulb stocks

Healthy test bulbs of each stock were planted, each one touching a rotted 'Golden Harvest' bulb. 48 different stocks of narcissus were tested for basal rot susceptibility from 2005 and a further 63 from 2006. Tests continued until 2009. The candidate stocks for testing were supplied by growers, and had not received a fungicide dip in the previous two years. Each selection was exposed to a high level of Fusarium inoculum over one and two growing seasons.

Production of infected bulbs (Inoculators)

Each year 'Golden Harvest' bulbs were artificially infected with *Fusarium oxysporum f. sp. narcissi* by cutting the base plate of the bulbs, immersing them in an infected dip and then storing them at 25°C for up to 4 weeks to allow symptoms to develop. Only those bulbs developing symptoms of basal rot infection, that is, softness and whitish Fusarium sporulation around the base plate were used as inoculators.

Planting and layout of the trial

Each autumn bulbs of each stock were planted by hand, in nets, in a double row, 100 mm apart each way, in furrows as normal. An inoculator bulb was then placed touching each test bulb. Tubular netting was used to contain the test bulbs so that none was lost, and each could be accounted for at harvest. Also, no portion of the inoculator, should it survive, was mistakenly included in the result. Separation of the test bulbs in the tubular netting made it possible to record losses accurately.

For each variety, two blocks of ten bulbs were planted adjacent to each other. Therefore for each variety:

- The one-year test comprised 2 replicates x 10 bulbs per plot
- The two-year test comprised 2 replicates x 10 bulbs per plot

Thus, over a 4-year period each stock in part 1 was subjected to 4 x one-year tests and 2 x two-year tests. In part 2 the 3-year period allowed one two-year and 3 x one-year tests.

Cultivation followed standard bulb production management and standard hot-water treatment was not used.

Assessment of the trial
Annually, after one or two growing seasons, the bulbs from each trial were lifted. To advance the expression of disease these were stored at 25 C for 2 weeks and then at ambient temperature until recorded and re-assembled for replanting. The presence of basal rot was assessed visually and by applying pressure to the bulbs. Basal rot assessment was non-destructive so that the trial could continue. The number and weight of remaining healthy bulbs was recorded.

Assessment of infection:
Not infected = bulb survived and may have increased in weight or number, or
Infected = bulb rotted or an obvious gap, often with bulb residue remaining in the net.

Where there were insufficient survivors some spare bulbs were used to make good the number required for replanting. Occasionally, when this was insufficient the variety was eliminated from the trial. (See CABGA 43 and 52)

Analysis of results

The results were recorded as the number and % of rotted bulbs and the weight of firm bulbs remaining. The weight of firm bulbs remaining compared with the planted weight is expressed as % weight remaining. It will be seen that bulb weight increase (or survival) is generally inversely related to the amount of bulbs lost to disease.

One cause of some inconsistency in results was due to attack from Large Narcissus Fly especially in the two-year-down bulbs. Steps were taken to reduce the incidence of Fly attack by applying chlorpyrifos to the planting furrows and burning over in June, neither of which is particularly effective. It is worth pointing out that trials conducted in former years (1980/89) were routinely treated with aldrin to contol this pest. Aldrin is now unavailable following its withdrawal in 1989.

Results

Results are presented in two sections.

Part 1 is the trial first planted in 2005 and producing 6 sets of data.
Part 2 is the trial first planted in 2006 for which there are 4 sets of data.

The column entitled ‘Resistance category’ groups the varieties according to the mean result.

Under 5% =resistant
Under 10% = moderately resistant
Over 10% = moderately susceptible
Over 20% = susceptible

Well-known standard varieties are shown in heavy capitals.

RESULTS (PART 1)

The 48 varieties first planted in 2005 presented in order of basal rot susceptibility after 6 sets of results. (Cols. 1, 2, 4 and 5 = 1-year down, Cols. 3 and 6 = 2-year down)

Variety	% Basal Rot							
	Mean %	1	2	3	4	5	6	Resistance category
ST. KEVERNE	0.33	0	0	0	0	0	2	Resistant
Chinita	0.50	0	0	0	3	0	0	--
Lancaster	0.66	4	0	0	0	0	0	--
Kerensa	0.83	0	0	0	0	0	5	--
St. Peter	1.00	0	0	0	4	0	2	--
Rosemoor Gold	1.83	0	2	1	3	3	2	--
Cornish Chuckles	2.16	0	6	3	0	0	4	--
CABGA 37	2.33	0	0	0	11	3	0	--
Beauvallon	2.33	0	14	0	0	0	0	--
CABGA 50	2.50	3	3	0	0	0	9	--
Veryan	2.50	3	7	2	0	0	3	--
Jersey Roundabout	3.16	4	0	7	8	0	0	--
Trelawney Gold	3.66	4	6	7	0	3	2	--
Talwyn	4.00	0	6	0	3	0	15	--
Emblyn	4.16	9	3	0	13	0	0	--
Tamara	4.66	2	14	2	10	0	0	--
CABGA 65/45/2	4.83	0	3	0	3	0	23	--
Jersey Torch	4.83	8	0	0	14	7	0	--
CABGA 47	4.83	10	0	6	7	0	6	--
CABGA 21	5.00	18	6	0	3	3	0	Moderately resistant
Dellan	5.50	9	10	2	3	9	0	--
CABGA 39	6.16	3	17	5	6	6	0	--
CABGA 22	6.16	3	7	7	17	3	0	--
Jedna	6.50	5	3	0	15	11	5	--
CABGA 38	6.50	13	0	24	0	0	2	--
Gold Crest	6.66	8	12	5	9	4	2	--
Golden Anniversary	6.83	3	6	13	14	0	5	--
Gold Crown	8.00	15	8	0	15	10	0	--
Marjorie Hine	8.00	27	2	0	14	5	0	--
CABGA 20	9.66	14	10	6	0	18	10	--
Kingscourt	9.66	6	26	6	11	0	9	--
CABGA 48	9.66	7	14	7	19	3	8	--
Brabazon	11.00	34	11	8	2	0	11	Moderately susceptible
Irish Minstrel	11.50	16	20	7	7	15	4	--
RED DEVON	12.00	35	14	3	18	0	2	--
Tibet	13.00	6	19	4	19	18	12	--
Loch Owskeich	13.33	43	13	5	13	0	6	--
CABGA 8	15.83	3	8	15	14	19	36	--
STANDARD VALUE	17.33	19	36	36	0	0	13	--
CABGA 24	18.66	34	7	18	11	10	32	--
CABGA 19	20.16	0	19	17	21	10	54	Susceptible
Knight of St. John	20.16	22	37	17	26	14	5	--
CABGA 49	21.16	50	20	9	16	26	6	--
DUTCH MASTER	21.50	34	15	20	0	18	42	--
CABGA 55	24.00	50	30	19	15	11	19	--
GOLDEN DUCAT	28.83	44	27	20	29	8	45	--
CABGA 52	55.00	66	44	-	-	-	-	--
CABGA 43	66.00	82	50	-	-	-	-	--

Part 1 % bulb weight remaining							
Variety	Mean %	1	2	3	4	5	6
Rosemoor Gold	159	208	213	177	140	93	121
CABGA 38	146	153	178	163	146	110	124
ST. KEVERNE	139	161	158	137	134	101	144
Jedna	139	204	34	247	119	94	134
CABGA 65/45/2	137	182	160	193	121	81	87
Kerensa	127	122	167	113	161	91	105
Chinita	125	114	99	106	150	97	182
CABGA 37	123	147	95	129	126	102	138
Emblyn	121	173	115	78	117	104	140
Talwyn	120	159	125	145	104	104	84
St. Peter	119	148	88	127	129	100	124
CABGA 39	116	106	93	153	137	97	109
CABGA 22	115	140	118	118	98	89	126
Golden Anniversary	114	136	131	94	110	100	114
RED DEVON	113	96	119	138	92	105	125
CABGA 21	108	92	57	98	146	109	148
CABGA 8	108	175	105	137	92	85	55
Veryan	107	136	86	102	103	110	128
Tamara	105	116	76	112	112	97	118
Gold Crest	105	120	67	131	84	106	121
CABGA 19	105	147	131	108	126	82	35
Trelawney Gold	104	110	95	96	146	93	84
Lancaster	103	120	106	103	111	86	92
Dellan	103	117	94	91	106	89	120
CABGA 20	103	86	105	167	71	104	83
Marjorie Hine	102	153	90	120	79	77	91
Gold Crown	101	147	62	113	115	80	88
CABGA 47	100	94	63	105	153	83	102
Knight of St. John	96	153	89	55	84	95	100
CABGA 48	95	124	55	83	93	103	109
Kingscourt	94	121	78	72	117	88	90
CABGA 50	93	111	65	66	97	124	98
Jersey Roundabout	93	95	80	89	104	84	105
Brabazon	92	125	56	55	130	83	100
Cornish Chuckles	89	122	83	86	93	67	84
Irish Minstrel	88	100	61	79	127	73	87
DUTCH MASTER	88	127	89	86	110	70	48
Loch Owskeich	88	61	70	79	107	100	109
Beauvallon	87	88	48	73	135	76	104
Jersey Torch	83	94	71	78	91	77	85
CABGA 49	80	71	57	81	93	83	98
CABGA 24	77	78	65	55	123	69	70
Tibet	75	104	53	79	70	61	80
GOLDEN DUCAT	74	88	72	63	78	107	33
CABGA 55	67	42	37	48	93	87	97
STANDARD VALUE	66	90	57	33	-	81	70
CABGA 52	48	50	46	-	-	-	-
CABGA 43	17	19	15	-	-	-	-

RESULTS (PART 2)

The 63 varieties first planted in 2006 presented in order of basal rot susceptibility after 4 sets of results. (Cols. 1,2 & 4 = 1-year down, Col. 3 = 2-year down)

Variety	% basal rot					
	Mean %	1	2	3	4	Resistance category
Actaea Seedling	0.00	0	0	0	0	Resistant
24Q	0.00	0	0	0	-	--
134	0.00	0	0	0	0	--
323	0.00	0	0	0	0	--
650	0.00	0	0	0	0	--
106	0.25	0	1	0	0	--
Brackenhurst	0.50	0	2	0	0	--
Poetaz Seedling	0.50	0	2	0	0	--
30D	0.50	0	0	2	0	--
51C	0.50	0	2	0	0	--
121	0.50	0	0	2	0	--
124	0.50	0	0	2	0	--
401	0.50	2	0	0	0	--
Estremadura	0.75	0	0	3	0	--
442	0.75	3	0	0	0	--
Abba	1.00	0	0	0	4	--
Foxhunter	1.25	0	0	5	0	--
Rose of May	1.25	3	0	2	0	--
104	1.25	0	0	1	4	--
Articol	1.50	0	0	6	0	--
2J	1.50	0	0	2	4	--
35D	1.50	0	0	0	6	--
718	1.66	5	0	-	0	--
66C	1.75	0	0	0	7	--
23G	2.00	3	2	0	3	--
Pink Charm	2.25	3	0	0	6	--
19F	2.50	3	0	4	3	--
68H	2.50	0	0	0	10	--
Cornish Vanguard	3.00	0	0	4	8	--
45J	3.00	5	0	-	4	--
77	3.25	9	0	0	4	--
10P	3.50	2	3	5	4	--
Seagreen	4.00	11	5	0	0	--
385	4.50	2	5	7	4	--
635	4.50	11	0	7	0	--
Eden Gold	4.75	7	4	4	4	--
68K	4.75	0	2	11	6	--
Double Actaea	5.00	0	2	9	9	--
344	5.00	9	1	10	0	--
Lady Sainsbury	5.25	0	0	17	4	Moderately resistant
29K	5.25	6	0	0	15	--
Smiling Maestro	5.50	2	5	8	7	--
2E	5.50	0	0	19	3	--
Furbellow	5.75	5	0	11	7	--
36D	6.50	0	0	9	17	--

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Camilla	7.00	0	0	7	21	--
Cornish Pride	8.50	3	0	12	19	--
Flambards	10.00	4	7	25	4	--
Mellen	10.25	8	2	16	15	Moderately susceptible
47B	10.50	0	6	33	5	--
70H	10.50	6	10	22	4	--
Treglisson	10.50	8	14	12	0	--
CABGA 51	10.75	0	3	-	40	--
High Life	11.50	5	5	20	16	--
Tripartite	12.25	7	5	13	24	--
194	13.00	5	0	47	0	--
Ganilly	13.75	0	13	34	8	--
38H	15.00	0	8	45	7	--
470	15.50	12	5	25	20	--
Camelot	15.75	45	3	15	0	--
Nanpusker	17.50	29	3	30	8	--
530	18.75	13	24	24	14	--
232	20.50	9	8	42	23	Susceptible

Part 2 % bulb weight remaining					
Variety	Mean %	1	2	3	4
35D	147	157	116	168	78
401	145	134	193	139	112
134	142	149	119	195	103
45J	141	127	199	-	97
104	138	144	116	205	88
19F	135	138	151	152	100
121	134	143	148	148	97
51C	132	137	128	125	139
30D	131	133	195	97	100
36D	128	164	162	114	70
Actaea Seedling	127	130	201	105	73
385	127	153	135	123	95
2J	126	144	136	140	85
2E	126	149	153	108	93
718	124	154	139	-	79
10P	124	138	135	128	95
323	123	130	172	97	93
106	122	136	138	130	82
Abba	121	128	176	112	66
66C	120	119	168	115	78
Foxhunter	116	142	126	114	83
24Q	115	127	141	116	75
650	115	129	139	88	103
Estremadura	115	124	160	100	74
Ganilly	115	163	92	118	86
Articol	114	135	155	84	82
					Table continued

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Pink Charm	113	113	139	115	83
Camilla	110	131	147	92	69
77	109	101	135	105	95
68K	108	140	120	111	60
Brackenhurst	106	132	107	92	91
Poetaz Seedling	106	108	135	103	77
442	105	111	130	102	77
344	103	121	127	85	78
68H	100	125	98	128	50
47B	100	138	115	65	80
635	99	107	106	81	100
38H	99	145	110	60	82
Lady Sainsbury	98	77	185	62	69
Furbellow	96	100	98	110	77
194	94	115	140	47	73
23G	93	126	69	103	75
29K	93	105	113	78	74
124	91	121	101	91	50
Smiling Maestro	91	102	114	82	65
470	90	104	133	57	65
70H	88	122	108	48	73
Tripartite	86	77	201	35	30
CABGA 51	85	71	108	-	77
Rose of May	85	82	105	70	81
Seagreen	84	91	127	66	53
Camelot	82	70	91	94	71
Flambards	81	98	97	68	62
High Life	79	59	114	65	78
Cornish Pride	78	45	153	41	74
Treglisson	78	87	52	80	93
232	77	107	97	40	65
Double Actaea	76	91	115	58	38
Cornish Vanguard	74	73	85	48	89
Eden Gold	72	62	108	46	70
Nanpusker	72	48	114	50	76
Mellen	71	76	82	51	76
530	68	95	61	78	36

NB. The variety Treglisson in part 2 is the same stock as 65/45/2 in part 1

DISCUSSION

Between 1980 and 1989, the same screening test was applied to a range of varieties and un-named seedlings raised at Rosewarne EHS. The new data can now be placed alongside the former records for comparison and to add confidence in the results.

Variety	% basal rot	
	Mean 1980 –1989 tests	Mean 2005 – 2008 tests
GOLDEN DUCAT	59	28.8
DUTCH MASTER	31	21.5
RED DEVON	19	12.0
Talwyn	18	4.0
Golden Anniversary (CABGA 1)	16	6.8
Cornish Pride (CABGA 19)	13	8.5
Emblyn	12	4.2
Patrick Hackett (CABGA 8)	11	15.8
Dellan	8	5.5
Tamara	5	4.7
Jedna	4	6.5
ST. KEVERNE	0	0.3
Kerensa	0	0.8
Rosemoor Gold (CABGA 46)	0	1.8
Cornish Chuckles (CABGA 80)	0	2.2

The tests conducted in 1980-89 sought to avoid the release of new seedling stocks that could prove troublesome in commerce. The threshold proposed was that of Dutch Master, a variety that is moderately prone to disease in commercial practice. In the tests over 9 seasons Dutch Master averaged 31%. By comparison Golden Harvest and Carlton, varieties which have now declined in importance suffered 83 and 85 % losses respectively.

Throughout all the tests, past and present, the variety ‘St. Keverne’ has shown a high level of resistance. Research has shown that, unlike many other varieties it responds to fungal attack by producing barrier tissue within the base plate. Many varieties when subjected to inoculum, may not rot but do appear to develop a rather corky base plate

Breeding work using St. Keverne as a parent has increased the number of resistant stocks becoming available. This constitutes a generally favourable situation for the industry as it moves into an era of reduced fungicide availability.

Technology transfer

Interim results have been presented on several occasions at meetings of the Bulb Grower’s Forum at Duchy College, Rosewarne, Cornwall.
Articles have been published in HDC News and a further article will be presented in 2010.

Reference

Tompsett, A.A. (1986) Narcissus varietal susceptibility to *Fusariun oxysporum* (basal rot).Acta Horticulturae, 177, 77-83.

ACKNOWLEDGEMENTS

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APPENDIX

Final Report of HDC BOF 57 2009. Key to names and parentage of daffodils tested

Code	Name	Parentage
CABGA stocks		
8	Patrick Hacket	William the Silent x Malvern City
19	Cornish Pride	Dominator x Cibola
20	Fiery Maiden	Cibola x Trifine
21	Towan	St. Keverne x Golden Gift
22	Wendron	Malvern City x Kingscourt
24		Malvern City x 10/57
37		St. Keverne x 65/24/1
38		Foresight x 63/1/10
39	Cardiff	St. Keverne x Cibola
43		Joseph Macleod x Topnotcher
47		Malvern City x St. Keverne
48		St. Keverne x 67/81/1
49		Golden Gift x Ristin
50		St. Keverne x Yellow Triumphator
52		Brabazon x Toorak Gold
55		Golden Gift x Malvern City
65/45/2	Treglisson	Joseph Macleod x Malvern City
GCRI seedlings		
36D		Golden Harvest x St. Keverne
24Q		Ditto x St. Keverne
38H		Ditto x St. Keverne
68K		Ditto x St. Keverne
68H		Ditto x St. Keverne
10P		Ditto x St. Keverne
29K		Ditto x St. Keverne
70 H		Ditto x St. Keverne
47B		Ditto x Fortune
51C		St. Keverne x Malvern City
323		Ditto x Fortune
2E		Ditto x Dutch Master
66C		Ditto x Malvern City
2J		Ditto x Malvern City
35D		Ditto x King Alfred
23G		Ditto x Malvern City
30D		Ice Follies x St. Keverne
470		Ditto x Jedna
106		Ditto x Dawley
121		Ditto x Dawley
124		Ditto x Dawley
134		Ditto x Dawley
104		Ditto x Dawley
19F		Ditto x St. Keverne
194		Ditto x Dutch Master
650		Fortune x Tamara
232		Ditto x Feena
77		Ditto x Dawley
344		Unsurpassable x Fortune
442		Ditto x Ice Follies

401		Malvern City x Ice Follies
385		Dutch Master x Ice Follies
635		Ditto x Rijnveld's Early Sensation
530		Ditto x Malvern City