

Project Title: Narcissus: Tazetta varieties for the Isles of Scilly

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## **Background and Objectives**

The Tazetta breeding programme, which preceded this evaluation and selection project, began at Rosewarne Experimental Horticulture Station, Camborne, Cornwall in 1969. Its initial aim was to create tazetta narcissi for the Isles of Scilly which would flower naturally before Grand Soleil d'Or, which is the principal variety grown on the Islands. The commercial advantage of such stocks would be in avoiding the need for expensive advancing techniques which are necessary to obtain flowers of Soleil d'Or before Christmas. It was also considered desirable to widen the range of narcissus varieties for production in the Islands.

The basis of the programme was to utilise the natural earliness of a stock from New Zealand known as "Autumn Sol" which normally flowers in October / November without special treatment. Flowers of Autumn Sol are themselves of poor quality, but by crossing with French Sol, Newton, Gloriosus, Monarque, Avalanche and others, improvement was expected.

In 1971 Rosewarne embarked upon an extension of the programme using the American variety Matador. This fertile parent introduced vigour and quality hitherto unknown in the tazetta group (RHS Div. 8). This programme was augmented by a stock, which included a quantity of unselected seedling bulbs, mostly produced from crosses between Matador and Soleil d'Or, raised by the late Harry Tuggle, Maryland, USA.

During the early years of the programme, stocks, which were not expected to be hardy, were grown under protection at Rosewarne EHS. In 1988, with the imminent closure of Rosewarne, stocks were transferred to the Trenoweth Sub-Station on St. Mary's and the work became supported by the Horticultural Development Council and the Duchy of Cornwall.

Progress Reports on BOF 14 for HDC were produced for the period 1988-93 and 1994-96 and are available on request. Additional illustrated reviews appeared in HDC News as follows: No 21 (1993), No 40 (1996), No 48 (1998), No 61 (1999) and "Profit from Research" 1999.

### **Milestones in the development programme**

1982/84 First trial marketing of 2 tazettas (Innisidgen and Wingletang) and 2 Matador hybrids (Hugh Town and Martinsville). These were sold to Isles of Scilly Members of the Cornwall Area Bulb Growers Association (CABGA).

1986-88 Remainder of the stocks transferred to The Isles of Scilly Sub-Station. This totalled 65 tazettas (true tazettas) and 75 Matador derived stocks (Poetaz)

1989-92 Trial plots were duplicated to include burnt over and untreated areas. Burning over in summer is a widely adopted technique for advancing and improving the flowering of tazetta narcissi. Burnt plots generally out-yielded the untreated ones but since much of the improvement was considered to be due to reducing Narcissus Fly attack, from 1993, all plots were burnt over.

1989 The first tazetta stock released under the HDC project

1990 The first Matador stock released under the HDC project

1992 Trenoweth R & D Ltd established; an independent company owned and managed by island growers. The company took responsibility for the management of the tazetta project.

1989-1996 During this period much effort was devoted to propagation of the more promising bulb stocks. Both twin-scaling and chipping were used as appropriate.

1986-2000 detailed recording of each stock was undertaken and decisions made after at least 3 consecutive years records were available. Opinions on each stock were canvassed at various times and final decisions made by a group consisting of the Project Leader and two prominent grower-members of the Trenoweth Board. Details of the records made and selection criteria appear in progress reports. Stocks were released to shareholders in proportion to the number of shares held. The minimum quantity of bulbs required before distribution could take place was 100 kg.

1993 An ancillary trial began in 1993 to study the response of 4 of the Matador clones to the application of advancing and retarding techniques. The stocks had all been released previously and so useful information was obtained on extending the flowering season of each stock and the effect this has on yields.

1995 A large number of stocks (21 in all) had been released by this date so it was decided prudent to re-introduce into the trials a sample of each of the released stocks to provide reference material.

2000 The number of stocks released to growers under period of the HDC project reaches 18 tazettas and 27 Matador hybrids; i.e. total of 45 stocks not including the 4 stocks distributed in 1982/84.

## **Trialling method**

The trialling method is described fully in the interim reports.

Basically, it consisted of planting 24 bulbs of each stock for a 3-year crop duration.

Basic cultivation included routine hot-water treatment. Consequently no records were taken of first-year flowers. Plots were burnt over annually.

Records included;

- Date of first open flower

- Estimated 50% flowering date

- Date of final flower

- Flowers per plot

- Assessment of commercial potential on a scale of 1-4 as follows:

1. Poor quality and potential. Destroy.
2. Fair quality and potential but having significant faults
3. Good quality and potential but requiring further assessment and confirmation before release
4. Excellent quality and potential. If maintained this justifies release as and when quantity of bulbs is sufficient. If not propagate.

Standard varieties grown for comparative purposes were Soleil d’Or, Primo and Avalanche.

## Results

Detailed records for the major period of assessment are presented in the 1993 and 1997 interim reports.

Over the 12 years of the HDC project the total number of stocks released to Scillonian growers is 45. A total of 79 stocks were considered inferior and have been destroyed.

Group	No. released	No. destroyed	No. remaining	Total
Tazetta	18	39	8	65
Matador	27	40	8	75
TOTAL	45	79	16	140

The number of stocks remaining in trials at the end of the project in the year 2000 is 16. Most of these will merit distribution to shareholders when stocks increase. Most of these were raised at the very end of the breeding programme, or, were only propagated in recent years.

The reference numbers of stocks remaining are:

Tazetta: 26,32,38,51,62,63,64,65

Matador; 27,45,50,51,61,64,65,66

The characteristics of the stocks which have been released to date and those remaining are shown in the tabular summaries.

## Registration of the stocks by the RHS

Innisidgen and Wingletang were registered with the RHS in 1982 and Hugh Town and Martinsville in 1984.

Two further stocks were registered in 2000 namely M2 as “Scilly Valentine” and M6 as “Royal Connection”. Further registrations are planned when suitable names have been agreed.

**TAZETTAS RELEASES (Division 8 -true tazettas)**

<b>Release date</b>	<b>Code</b>	<b>Colour</b>	<b>Breeder's Ref. No</b>	<b>Cross</b>	<b>Flower season</b>	<b>Flower period</b>
1989	12	Y-O	69/305/5	French Sol x Autumn Sol	Nov	2
	15	Y-O	69/305/10	“	Nov	2
1992	3	Y-Y	69/299/9	Autumn Sol x Newton	Oct/Nov	1
	7	Y-Y	69/299/19	“	Dec	4
	9	Y-Y	69/299/22	“	Nov	2
	30	Y-Cr	77/62/1	“	Jan	6
1993	36	W-Y	78/84/3	Gloriosus x Early White	Jan	6
	37	W-Y	78/87/2	Gloriosus x Paper White	Dec	4
	46	W-Y	78/88/1	Gloriosus x Scilly White	Jan/Feb	7
1995	33	W-Y	78/77/1	Avalanche x Gloriosus	Jan/Feb	7
1996	40	W-Y	78/87/13	Gloriosus x Paper White	Jan/Feb	7
1998	39	W-Y	78/87/11	“	Dec/Jan	5
	43	W-Y	78/87/20	“	Dec	4
	44	W-Y	78/87/21	“	Feb	8
	45	W-Y	78/87/22	“	Dec/Jan	5
	52	W-Y	78/95/3	Monarque x Gloriosus	Feb/Mar	9
1999	34	W-Y	78/87/2	Avalanche x Gloriosus	Feb/Mar	9
	50	W-Y	78/95/1	Monarque x Gloriosus	Feb/Mar	9

**TAZETTA STOCKS REMAINING AT 2000**

<b>Release date</b>	<b>Code</b>	<b>Colour</b>	<b>Breeder's Ref. No</b>	<b>Cross</b>	<b>Flower season</b>	<b>Flower period</b>
	26	W-Y	76/147/2	01060/13 x Gloriosus	Dec	4
	32	W-Cr	77/66/1	Gloriosus x Ziva	Nov/Dec	3
	38	W-Y	78/87/10	Gloriosus x Paper White	Jan/Feb	7
	51	W-Y	78/95/2	Monargue x Gloriosus	Mar	10
	62	W-Y			Feb	8
	63	W-Y			Nov	2
	64	W-Y			Dec	4
	65	W-Y			Nov	2

**MATADOR HYBRID RELEASES (Division 8 – Poetaz)**

<b>Release date</b>	<b>Code</b>	<b>Colour</b>	<b>Breeder's Ref. No</b>	<b>Cross</b>	<b>Flower season</b>	<b>Flower period</b>
1990	2	Y-O	66/49/7	Matador x Soleil d'Or	Jan/Feb	7
	5	Y-O	66/49/17	“	Jan	6
	6	Y-O	66/49/19	“	Feb	8
1992	1	Y-O	66/49/1	“	Dec/Jan	5
	8	Y-O	66/49/23	“	Jan	
	28	Y-O	73/157/6	Matador x T12	Feb	8
1993	14	W-O	71/493/1	Matador x Autumn Sol	Jan/Feb	7
	35	Y-O	75/420/1	Matador x 69/305/3	Dec	4
1995	36	Y-O	75/422/3	Matador x 69/305/12	Feb	8
	40	Y-O	75/436/2	69/299/20 x Matador	Nov/Dec	3
1996	18A	Y-O	72/269/1	Matador selfed	Feb/Mar	9
	18B	W-O	72/269/2	Matador selfed	Feb	8
	21	W-O	73/154/1	Matador x Gloriosus	Feb	8
	30	Y-O	73/158/1	Matador x 69/307/3	Feb	8
	32	Y-O	74/262/1	Matador x 69/310/11	Feb	8
1997	55	Y-O	80/146/5	Matador x	Feb/Mar	9
1998	17	Y-O	71/496/2	Matador x French Sol	Feb	8
	26	Y-O	73/157/4	Matador x T12	Dec/Jan	5
	29	Y-O	73/157/7	“	Feb	8
	44	Y-O	80/0/4	Matador x	Feb/Mar	9
	53	Y-R	80/146/2	Matador x 70/347/1	Feb/Mar	9



**MATADOR RELEASES *CONT.***

1999	15	Y-O	71/493/3	Matador x Autumn Sol	Jan/Feb	7
	39	Y-O	75/436/1	69/299/20 x Matador	Nov/Dec	3
	54	Y-O	80/146/4	Matador x 70/347/1	Mar	10
	60	Y-O	80/149/2	Matador x 75/432/1	Feb	8
	63	W-Y	83/23/1	Monarque x Red Cottage	Mar	10
	67	W-Y	81/24/3	Monarque x Rob Roy	Mar	10

**MATADORS REMAINING AT 2000**

	27	Y-O	73/157/5	Matador x 69/305/5	Jan	6
	45	Y-O	80/0/7	Matador x	Mar	10
	50	Y-O	80/0/12	“	Feb/Mar	9
	51	Y-O	80/0/13	“	Feb/Mar	9
	61	W-O	80/150/1	Matador x 77/65	Mar	10
	64	W-Y	81/23/2	Monarque x Red Cottage	Mar	10
	65	W-O	81/24/1	Monarque x Rob Roy	Mar	10
	66	W-Y	81/24/2	“	Mar	10

## FLOWERING PERIOD COVERED BY THE NEW STOCKS:

Flower periods	Approx. Months of peak flowering	Tazettas Code Nos.	Matadors Code Nos.	Peak season of commercial stocks
1	Oct/Nov.	<b>3</b>		
2	Nov	<b>9,12,15,63,65</b>		Innisidgen
3	Nov/Dec.	32	<b>39,40</b>	Paper White
4	Dec.	<b>7,37,43,26,64</b>	<b>35</b>	Hugh Town
5	Dec/Jan.	<b>39,45</b>	<b>1,26</b>	Primo
6	Jan.	<b>30,36</b>	<b>8,27</b>	Soleil d'Or
7	Jan/Feb.	<b>33,40,46,38</b>	<b>2,5,14,15</b>	Martinette
8	Feb.	<b>44,62</b>	<b>6,17,18B,21,28 29,30,32,36,60</b>	Avalanche
9	Feb/Mar.	<b>34,50,52</b>	<b>18A,44,53,55, 50,51</b>	Monarque
10	Mar.	51	<b>54,63,67,45,61 64,65,66</b>	Golden Dawn

NB. Released stocks are printed in heavy type. The 16 stocks not yet released are included for completeness.

The flowering period of commercial stocks is frequently modified by treatments applied to the bulbs. The extent to which the seedling stocks can be advanced or retarded has not been fully tested but some critical information was obtained in an ancillary trial in which experimental treatments were applied to some Matador hybrids: Hugh Town, M2 (Scilly Valentine), M5, and M6 (Royal Connection)

This trial showed that these stocks are very responsive to advancing and retarding treatments to extend the flowering period. Within this group flowering was achieved from mid-November (advanced Hugh Town) to mid-March (retarded Royal Connection), a period of 24 weeks. The stock M5 was unsuitable for advancing as it proved susceptible to leaf scorch.

### Value of the project – market opportunities

1. The large number of new stocks released in this programme hugely increases the current range of tazetta varieties available to growers on the Isles of Scilly. Prior to this programme the number of commercial tazetta stocks used by growers was only about seven. Of these the only yellow / orange ones were Soleil d'Or and the late flowering Golden Dawn.

The arrival of over 45 new stocks offers a much needed opportunity to widen the range of colours and types but also reduces dependence on older stocks which may fail for various reasons, including virus infection.

2. The new stocks provide flowers from October / November until March. The earliest flowering of these could reduce the need to advance standard varieties to supply the pre-Christmas trade.

3. The quality, size and colour of flower within the Matador group represents a marketing opportunity for both bulbs and flowers which did not exist before.

4. Several of the Matador group have proved amenable to advancing and retarding treatments, increasing their usefulness in providing continuity. This has advantages as it can reduce the number of different stocks a grower needs to have to achieve a long season.
5. A number of the more recent releases in the tazetta group have shown to possess very healthy foliage, apparently resistant to fungal attack. This may be helpful in reducing the number of fungicide applications especially in the earlier part of the season.
6. Marketing opportunities for non-hardy tazetta bulbs is interesting. On the one hand their unsuitability for outdoor planting in the colder regions is a disadvantage, but having no cold requirement they are very well suited to indoor, greenhouse or conservatory culture and are mostly early flowering. The vigour and dramatic flowers of the Matador group in particular does present a marketing opportunity in the retail sector.
7. Finally, the provision of a large number of new stocks for Island growers has given the industry a much needed boost. Competition in flower markets is increasing and without the opportunities afforded by these new stocks, the Scillonian industry would have less grounds for optimism regarding its long-term future.

## **Promotion**

Promotion of the new stocks has been through publications such as HDC Project news and at shows such as Aalsmeer, BGLA, IFTEX. and local shows. These initiatives have been largely implemented by Mainland Marketing Ltd. (Scented narcissus), the Islands' principal marketing organisation.

However, these are stocks destined to be grown, at least initially, on the Isles of Scilly and competition from commercial production in other mild winter areas would be counter productive. As stocks prove themselves under commercial conditions and increase beyond the immediate needs of Scillonian growers, markets will need to be found for the bulbs. There is general agreement within the industry that bulb marketing should be directed towards retail outlets where returns would be higher and risk of competition reduced or at least delayed.

The need for promotion will be greater in a few years time than at present. The promotion will need to be directed towards the unique qualities of tazetta narcissi, whilst also recognising their limitations in global markets.

## **Summary**

The Rosewarne tazetta breeding programme which began in 1969 has achieved the stated objectives of creating families of new improved varieties many of which are early flowering. Over the past 30 years the work has proceeded despite the closure of Rosewarne EHS. With the assistance of HDC over the past 10 or so years the project has been brought to a satisfactory conclusion with 45 new stocks now in the hands of grower shareholders and more of these will be registered with the RHS and named as they fulfil expectations.

By the very nature of new variety introductions there will undoubtedly be a number which will still not find lasting favour with growers or the markets. Thus, further selection will take place within the rigorous commercial environment in the coming years.

## **Acknowledgements**

The present board of Trenoweth R & D Ltd acknowledge the help given by HDC in funding much of the recent work.

The efforts of a large number of people both at Rosewarne and Trenoweth since breeding began in 1969 is also acknowledged.