



HDC Project FV99  
Field Scale Adaptability of Ten  
Spring Sown Bulb Onion Varieties  
Which Have Performed Well in  
NIAB Trials.

FIELD SCALE BULK HANDLING ADAPTABILITY OF TEN SPRING SOWN BULB ONION VARIETIES  
WHICH HAVE PERFORMED WELL IN NIAB TRIALS

OBJECTIVE

To establish the suitability on a commercial scale of varieties of spring sown onions which have performed well in conventional NIAB trials by growing 0.04 Ha (1/10th acre) plots on two farms, situated on both peat and silt in Cambridgeshire.

METHOD

Two trial sites were used for the trials :

Site	Soil type	Drilling date	Mean plant population (ppm <sup>2</sup> )	Harvest date	Date of storage assessment
1. Barway	Black Peat	25.02.92	50.2	20.08.92	24.03.93
2. Leverington	Silt	05.03.92	48.2	03.09.92	23.04.93

Both trials were drilled to achieve an established population of 500 000 plants to the hectare or 50 plants per metre square (ppm<sup>2</sup>). An average population of approximately 50ppm<sup>2</sup> was achieved at both sites with all plots having a population within  $\pm 5\%$  of the mean. The trials were treated for pesticide and irrigation purposes in the same way as the commercial crop surrounding them. Malic Hydrazide was applied to the trial at approximately 10% foliage diedown.

Maturity was assessed for each variety at 80% foliage diedown. At maturity five samples of approximately 30Kg in weight were taken from a measured area of each plot. From these samples plant population was assessed.

The remaining trial produce was topped, windrowed and harvested into one tonne bulk bins. The area of plot needed to fill a one tonne bin was recorded at Leverington and so yield could be assessed, however this was not possible at Barway and therefore only the percentage in each size grade could be assessed.

One tonne samples from each plot were then dried according to commercial practice. Samples from the Barway site were stored in ambient storage at Arthur Rickwood EHF whilst the produce from Leverington was stored in refrigerated storage at Hickmans in Wisbech.

Both set of samples were removed from storage the following spring and graded over commercial graders and assessed for size, class, unmarketable fractions and bulb quality.

HDC Spring Sown Onion Trials 1992 Yield Results for Leverington Site

Courtesy of Proctor Bros. (Long Sutton) Ltd.

Variety	Source	Date of 80% foliage diedown	Plant population plants per m <sup>2</sup> (see note below)	Marketable yield (t/ha)			Total (inc. <40mm)	% Class II
				40-60mm in diameter	60-80mm in diameter	>80mm in diameter		
Markies Goldito Caribo	Van der Have	10 Aug	47	10.5	45.0	3.0	59.0	14
	Royal Sluis	11 Aug	49	11.5	46.5	3.0	61.5	22
	Breeders Seeds	12 Aug	47	12.0	45.0	3.0	60.0	16
Dinaro Hystar Karato	Royal Sluis	13 Aug	50	15.0	47.0	0.0	62.5	41
	Bejo	14 Aug	46	15.0	42.0	1.5	59.5	9
	Breeders Seeds	14 Aug	49	13.5	34.5	1.5	50.0	21
Alamo Polo Hysam	Breeders Seeds	15 Aug	49	15.0	43.5	3.0	62.0	18
	Nickersons	15 Aug	50	22.5	39.0	0.0	62.0	18
	Bejo	17 Aug	48	19.5	40.5	0.0	60.5	10
Marco	Nickersons	20 Aug	47	7.5	46.5	4.5	59.0	13

NB. Plant populations assessed using sub-samples.

HDC Spring Sown Onion Trials 1992 Quality and Storage Results for Leverington Site

Courtesy of Proctor Bros. (Long Sutton) Ltd.

Variety	Source	Bulb Quality						Storage Potential		
		Bulb Colour (1-9) 1=pale straw 9=dark straw	Skin Protection (1-9) 1=poor 9=good	Bulb Shape (1-9) 1=flat 5=globe 9=elongate	Bulb Uniformity (1-9) 1=poor 9=good	Bulb Firmness (1-9) 1=soft 9=firm	% Sound	% Rotten	% Skinned	
Markies	Van der Have	6.0	5.5	5.0	5.5	6.0	93.0	3.5	3.5	
Goldito	Royal Sluis	5.0	5.5	4.7	5.5	6.5	85.0	7.0	8.0	
Caribo	Breeders Seeds	5.5	5.0	5.0	5.7	6.0	92.0	3.5	4.5	
Dinaro	Royal Sluis	5.5	4.5	4.7	5.5	5.5	86.0	5.0	9.0	
Hystar	Bejo	5.5	6.0	4.7	6.5	6.5	98.0	1.0	1.0	
Karato	Breeders Seeds	5.0	5.5	5.0	6.0	5.5	89.5	6.5	4.0	
Alamo	Breeders Seeds	5.0	5.5	5.0	5.5	6.0	92.0	4.5	3.5	
Polo	Nickersons	5.0	5.0	5.0	5.5	5.5	92.5	4.5	3.0	
Hysam	Bejo	5.5	6.5	5.0	6.0	6.5	97.0	2.0	1.0	
Marco	Nickersons	5.0	5.5	4.7	5.5	6.0	92.0	5.5	2.5	

HDC Spring Sown Onion Trials 1992 Yield Results for Barway Site

Courtesy of G S Shropshire and Sons

Variety	Source	Date of 80% foliage diedown	Plant population plants per m <sup>2</sup> (see note below)	% of Class I Marketable Bulbs			% Class II
				40-60mm in diameter	60-80mm in diameter	>80mm in diameter	
Goldito	Royal Sluis	1 Aug	50	36	60	0.4	3.4
Caribo	Breeders Seeds	3 Aug	50	39	58	0.3	2.1
Karato	Breeders Seeds	3 Aug	49	48	48	0.3	3.1
Markies	Van der Have	3 Aug	50	42	57	0.1	1.3
Polo	Nickersons	3 Aug	49	45	52	0.0	2.7
Alamo	Breeders Seeds	6 Aug	51	43	55	0.4	2.2
Dinaro	Royal Sluis	6 Aug	50	41	53	0.5	5.2
Hysam	Bejo	10 Aug	51	45	54	0.1	0.8
Hystar	Bejo	11 Aug	50	43	56	0.5	0.8
Marco	Nickersons	12 Aug	52	42	56	0.0	1.2

NB. Plant populations assessed using sub-samples.

HDC Spring Sown Onion Trials 1992 Yield Results for Barway Site

Courtesy of G S Shropshire and Sons

Variety	Source	Bulb Quality						Storage Potential			
		Bulb Colour (1-9) 1=pale straw 9=dark straw	Skin Protection (1-9) 1=poor 9=good	Bulb Shape (1-9) 1=flat 5=globe 9=elongate	Bulb Uniformity (1-9) 1=poor 9=good	Bulb Firmness (1-9) 1=soft 9=firm	% Sound	% Rotten	% Skinned	% Double	
Markies	Van der Have	5.0	7.0	4.0	8.0	8.0	98.9	0.3	0.1	0.3	
Goldito	Royal Sluis	5.0	6.0	4.5	7.0	7.0	97.0	0.7	0.5	0.6	
Caribo	Breeders Seeds	4.5	6.5	4.5	7.0	6.0	98.9	0.3	0.1	0.3	
Dinaro	Royal Sluis	4.0	6.0	4.5	7.0	4.0	97.4	0.3	0.4	0.8	
Hystar	Bejo	4.5	7.0	4.5	7.0	6.5	98.3	0.6	0.0	0.6	
Karato	Breeders Seeds	5.0	6.0	4.5	7.0	6.0	97.4	0.5	0.1	1.0	
Alamo	Breeders Seeds	5.0	6.5	4.5	7.0	7.0	98.2	0.6	0.0	0.5	
Polo	Nickersons	4.5	6.5	4.0	8.0	7.0	97.9	0.5	0.1	0.4	
Hysam	Bejo	4.5	7.0	4.5	7.0	8.0	98.7	0.3	0.0	0.4	
Marco	Nickersons	4.5	6.5	4.5	7.0	6.5	98.9	0.3	0.1	0.2	

## RESULTS

### Comments on Varieties

**MARKIES** Early maincrop. The earliest maturing variety at Leverington, similar maturity to CARIBO at Barway. Average yields of mid to dark straw coloured bulbs. Above average skin protection, uniformity, firmness and storage potential at Barway.

**GOLDITO** Early maincrop. The earliest maturing variety at Barway, one day later than MARKIES at Leverington. Average yields of mid straw coloured, firmer than average bulbs at Leverington. Below average storage potential at both sites due to above average levels of rotten and skinned bulbs after storage.

**CARIBO** Maincrop. Average yields at Leverington of mid straw coloured bulbs. Above average storage potential at Barway.

**DINARO** Maincrop. Above average yields at Leverington. Below average % class 1 and below average storage potential at both sites. Below average skin protection at Leverington. Below average bulb firmness at Barway.

**HYSTAR** Maincrop. Average yields at Leverington of mid straw coloured bulbs. Above average skin protection, % class 1 and storage potential at both sites. Above average bulb uniformity and firmness at Leverington.

**KARATO** Maincrop. Below average yields at Leverington and a below average % of bulbs in the 60-80mm size range at Barway. Above average bulb uniformity at Leverington. Average storage potential at both sites, although above average levels of rotten bulbs at Leverington and double bulbs at Barway.

**ALAMO** Maincrop. Above average yields at Leverington. Average bulb quality and storage potential at both sites.

**POLO** Maincrop. Above average yields at Leverington. Above average uniformity at Barway. Average skin protection and storage potential at both sites.

**HYSAM** Maincrop. Average yields at Leverington. Above average skin protection, bulb firmness, % class 1 and storage potential at both sites. Above average bulb uniformity at Leverington.

**MARCO** Late maincrop. The latest maturing variety at both sites. Average yields at Leverington. Average skin protection and bulb uniformity at both sites. Above average storage potential at Barway.

## CONCLUSION

Generally results were fairly consistent both between sites and when compared to 1991/2 trial data.

The varieties HYSAM and HYSTAR, both from Bejo, performed particularly well, especially in terms of bulb quality and storage potential at both sites. MARKIES from Bejo also did well notably at the Barway site on peat soil with above average bulb quality and storage potential.

Three varieties produced above average yields at Leverington POLO (Nickersons), ALAMO (Breeders Seeds) and DINARO (Royal Sluis). Both POLO and ALAMO produced bulbs of average quality and average storage potential, DINARO however was rather prone to skinning at both sites after storage and as a result produced an above average level of class 2 bulbs at both sites.

Quality and storage potential of all the varieties was much improved over 1991/2 trials and this was predominantly due to much faster harvesting of the trials after maturity was reached.