



Agriculture & Horticulture
DEVELOPMENT BOARD



Grower Summary

FV 348c

Onions - Independent
assessment of field and storage
potential of varieties

Annual 2014

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Further information

If you would like a copy of this report, please email the HDC office (hdc@hdc.ahdb.org.uk), quoting your HDC number, alternatively contact the HDC at the address below.

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GROWER SUMMARY

Headline

- New varieties add positively to the choices available to growers offering excellent storage potential; a broader range of red varieties; and mildew resistance.

Background

The aim of the work is to provide independent assessment of the yield, quality and storage potential of new onion varieties propagated from seed. There are direct comparisons of new and established varieties and growers have the opportunity to inspect the trials at key stages.

Plant breeders continue to develop improved varieties with characteristics that meet grower requirements e.g. high yield, disease resistance, good quality and storability.

Drilled onions account for approximately 70% of the area grown in the UK. Early maturing varieties such as Hytech, Centro and Vision are becoming increasingly popular, Hybound is a promising new early variety. Maincrop varieties e.g. Arthur, Hybelle and Renate, still hold a large proportion of the acreage. Late maturing varieties such as Armstrong are still important in extending the harvest window.

Overwintered onions are still grown on a small scale but there are not enough varieties to warrant evaluation trials.

Results

Trial records and data collected –onion trials drilled from seed

Table A shows key areas of interest – maturity, marketable yield and storage data.

A full set of data tables is appended to the full report.

Trial site details

Sites were agreed with HDC/BOPA through a steering group, storage was at NIAB in an ambient store and at P G Rix in commercial CE store.

The trials were hosted by (with thanks) and located as follows:

- J Raker Farms, Croxton, Norfolk – drilled onions
- P G Rix Farms, nr Colchester, Essex – drilled onions

The trials were harvested on 5th and 11th Sept (Norfolk) and 23rd Sept and 9th Oct (Essex).

The 2013 season was drier than that of 2012 so mildew was not a major issue. A cool and grey April, May and June meant that crops were slow growing. A hot July and August meant that crops caught up well on light soils (i.e. Norfolk) but the heavier soils (Essex) were late maturing and some varieties were taken green.

Table A. NIAB Spring Sown Onion Trials from seed 2013 – Varieties, Maturities, Yield & Storage

Varieties in maturity order (mean of both sites); Main 3 replicates; *Preliminary 2 replicates of data*

Variety	Source	Maturity Date of 80% foliage fallover	Yield marketabl e (t/ha)	Ambient Storage % sound bulbs at end May	CE Storage % sound bulbs at end July
BROWNS					
Hypark	Bejo/DGS	10-Sep	65.4	20	12
Hybound	Bejo/DGS	13-Sep	67.5	29	36
Wellington	Syngenta	15-Sep	62.8	35	45
Hybing	Bejo/DGS	16-Sep	69.1	21	31
<i>Hysky</i>	<i>Bejo/DGS</i>	<i>17-Sep</i>	<i>55.7</i>	<i>46</i>	<i>44</i>
Medaillon	Syngenta	19-Sep	61.0	21	40
NIZ 37-83	Nickerson	20-Sep	67.8	29	31
<i>SV3700ND</i>	<i>Seminis</i>	<i>20-Sep</i>	<i>57.1</i>	<i>36</i>	<i>34</i>
Bennito	Seminis	21-Sep	66.9	11	17
Hytech	Bejo/DGS	21-Sep	67.3	18	15
Motion	Syngenta	21-Sep	64.8	31	39
Napoleon	Syngenta	21-Sep	59.2	25	39
Vision	Syngenta	21-Sep	58.1	41	63
Centro	Nickerson	21-Sep	62.2	20	21
RS 07751481	Seminis	21-Sep	60.6	13	27
NIZ 37-84	Nickerson	22-Sep	66.9	16	25
Paradiso	Advanta	22-Sep	60.9	21	22
Mannito	Seminis	22-Sep	64.9	25	31
<i>SV3557ND</i>	<i>Seminis</i>	<i>23-Sep</i>	<i>56.1</i>	<i>30</i>	<i>21</i>
Tangito	Seminis	23-Sep	63.3	15	20
<i>Hystore</i>	<i>Bejo/DGS</i>	<i>24-Sep</i>	<i>53.9</i>	<i>31</i>	<i>26</i>
Santero	Nickerson	25-Sep	62.5	18	38
NIZ 37-89	Nickerson	25-Sep	63.7	34	39
<i>SV9249ND</i>	<i>Seminis</i>	<i>25-Sep</i>	<i>68.1</i>	<i>18</i>	<i>8</i>
<i>RX 07764947</i>	<i>Seminis</i>	<i>25-Sep</i>	<i>66.3</i>	<i>19</i>	<i>9</i>
Action	Syngenta	27-Sep	57.2	47	38

Arthur	Advanta	27-Sep	60.2	9	6
Means		21-Sep	62.6	25	29
REDS					
Red Light	Bejo/DGS	30-Aug	69.6	12	54
<i>af 1.11</i>	<i>AFM</i>	<i>07-Sep</i>	<i>50.7</i>	<i>36</i>	<i>35</i>
Red Planet	AFM	15-Sep	52.0	18	18
Red Tide	Bejo/DGS	15-Sep	56.4	22	36
Redspark	Bejo/DGS	17-Sep	58.3	38	42
Red Comet	AFM	19-Sep	55.9	27	23
<i>af 222</i>	<i>AFM</i>	<i>21-Sep</i>	<i>58.0</i>	<i>36</i>	<i>28</i>
Retano	Nickerson	21-Sep	51.6	14	28
Red Baron	Bejo/DGS	23-Sep	58.4	21	18
Means		15-Sep	56.8	25	31

The following varieties are of most interest to the industry. Full information on all varieties can be found in the 'Full Trial Report'.

There is a good range of maturities allowing growers to spread their harvest period. The later maturing varieties were taken green which meant some varieties were harder to dry and some 'telescoping/tubing' was seen commercially and in the graded trial material.

For organic growers and for high disease pressure years the mildew resistant varieties such as Santero offer potential.

Establishment was good but cold grey conditions through April, May and June meant that growth was slow and plants had to catch up in the hot conditions in July and August. Crops on light soils caught up quickly but on heavier soils this did not happen and thus they were harvested late and/or 'green'.

Hybound and Hypark were the earliest maturing varieties of the drilled trials. However the cold start meant that some varieties matured out of sequence.

Mildew was at low enough levels to be kept under control by regular fungicide applications.

The mean trial yields in Norfolk were above the 10 year average but the yield in Essex was below average due to losses from slow development and harvesting green.

In the Essex trial the highest yielding brown varieties were Bennito, NIZ39-89 and RX07764947.

Red Light was the highest yielding red variety.

In the Norfolk trial Hytech, NIZ 37-84 and Hybing were the highest yielding browns. Red Light was the highest yielding red variety.

There were few rots in the harvested material of both the drilled trials but there were double in lots of varieties and there was a large amount of losses due to material harvested green sprouting or having thick necks.

Hypark, Hysky, Motion, Santero and NIZ 37-89 were the best of the varieties for having high percentages of single centres.

Storage assessments in an ambient store were recorded in late-April and late-May 2014.

Storage potential continues to be a key factor for drilled crops. As in 2012/13, Wellington, and Vision had above average percentages of sound bulbs at the late-May assessment. Hysky, SV3700ND and Action also performed above average in 2012/13. Redspark and AF1.11 continued to perform well in storage as did AF22 in the reds.

Stored bulb quality was generally very good throughout most of the varieties. Global and Testa Rossa were slightly soft and loose skinned. Neither of these varieties is suitable for storage.

The highest percentage of sound bulbs from the controlled environment store was from Vision, several others performed well Hybound, Wellington, Hysky, Medaillon, Motion, Napoleon, Santero, NIZ37-89 and Action. Red Light and Redspark had the highest percentage of sound bulbs in the reds.

Main Conclusions

The yield potential of varieties can vary greatly. In the drilled trials this was approx. 20t/ha between the highest and lowest yields (mean of both trials).

Yield out of store is also important. Drilled material show a difference of approx 40% between the best and worst storage potential from ambient store and of almost 60% from CE store.

Mildew resistant varieties require fewer and or cheaper fungicide programmes.

Action Points

- Select a range of varieties with different maturities to spread the harvest - Earlier varieties are generally favoured such as the Hybing or Hybound (early), Cento or Vision (early main-crop), but late varieties such as Arthur or Armstrong are still used on black soils
- Select varieties best suited to your storage facilities –Vision is consistently the best storing brown variety in ambient and CE stores. Redspark has been the best storing red variety.
- For varieties not suited to long term storage growers must be able to sell their produce quickly - Only produce as many early sets, e.g Jagro, as you have an immediate market for Sturon or similar types for storage until Christmas
- In high disease pressure years growers should take advantage of material with disease resistance e.g. mildew resistance - Santero and Hylander both have resistance to downy mildew