



Grower Summary

FV 348d

Onions - Independent
assessment of field and storage
potential of varieties

Annual 2016

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Before using all pesticides check the approval status and conditions of use.

Read the label before use: use pesticides safely.

Further information

If you would like a copy of the full report, please email the AHDB Horticulture office (hort.info.@ahdb.org.uk), quoting your AHDB Horticulture number, alternatively contact AHDB Horticulture at the address below.

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AHDB Horticulture is a Division of the Agriculture and Horticulture Development Board.

Project title: Onions - Independent assessment of field and storage potential of varieties

Project number: FV 348d

Project leader: Bruce Napier, NIAB

Report: Annual Report 2016

Previous report:

Key staff: Bruce Napier
Shaun Coleman

Location of project: NIAB, Cambridge
Drilled trials: Essex and Norfolk

Industry Representative: Tom Will, VCS

Date project commenced: 01 April 2015

Date project completed 30 July 2018

(or expected completion date):

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 Hybing, Centro and Vision are popular. Hybound is a promising new early variety that continues to gain popularity. Maincrop and late maturing varieties still hold a large proportion of the acreage e.g. varieties such as Hytech and Armstrong are still important in extending the harvest window. Red Baron still commands a large percentage of the red area with Redspark also being popular.

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

Results of the Variety Trials

Drilled Onions

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 AHDB Horticulture/BOPA through a steering group, storage was at NIAB in an ambient store and at P G Rix in commercial Controlled Environment (CE), cold store.

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

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

The trials were harvested on 10th September (Norfolk) and 11th September (Essex). The 2015 season maturities were approx a week earlier than the 10 year averages while 2014 season was 3 weeks earlier than the average. Establishment conditions were good and the season as a whole didn't have too many extremes of temperature. This contrasted starkly with 2014 where mean temperatures above the long term averages for the months March to July contributed to the earlier maturities.

Mildew was not a major problem in either trial.

Table A. NIAB Spring Sown Onion Trials drilled from seed 2015 – 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 marketable (t/ha)	Ambient Storage % sound bulbs at end May	CE Storage % sound bulbs at end July
BROWNS					
Hybound	Bejo/DGS	14-Aug	85.4	68	60
BGS298	Bejo/DGS	16-Aug	90.5	54	78
Hypark	Bejo/DGS	16-Aug	88.0	41	45
Hybing	Bejo/DGS	17-Aug	91.5	51	50
Hytune	Bejo/DGS	17-Aug	98.5	49	67
Medaillon	Syngenta	19-Aug	81.9	71	62
SV3557ND	Seminis	19-Aug	85.1	51	61
Centro	Hazera	20-Aug	87.2	48	56
Vision	Syngenta	20-Aug	84.2	66	85
SV8528ND	Seminis	20-Aug	79.1	60	75
RS 07751481	Seminis	21-Aug	85.8	35	35
Hytech	Bejo/DGS	21-Aug	91.2	47	47
Napoleon	Syngenta	21-Aug	87.2	59	32
Wellington	Syngenta	24-Aug	80.6	52	86
SV3700ND	Seminis	24-Aug	85.1	57	40
Motion	Syngenta	26-Aug	84.3	72	67
Hysky	Bejo/DGS	26-Aug	89.8	60	68
Arthur	Hazera	27-Aug	86.8	35	48
SV1332ND	Seminis	28-Aug	83.3	49	47
Hyfive	Bejo/DGS	28-Aug	81.3	55	53
Chico	Hazera	29-Aug	78.6	53	71
Paradiso	Hazera	30-Aug	74.7	50	57
Hyway	Bejo/DGS	30-Aug	85.7	60	69
Progression	Syngenta	01-Sep	85.6	48	72
Santero	Hazera	07-Sep	77.1	43	32
Means		23-Aug	85.1	53	59
REDS					
Red Light	Bejo/DGS	15-Aug	92.1	4	65
Red Tide	Bejo/DGS	19-Aug	75.7	56	45
Redspark	Bejo/DGS	27-Aug	74.4	48	53
Retano	Hazera	28-Aug	71.3	45	49
NIZ 37-110	Hazera	28-Aug	71.1	38	50
ABS 212	Allium Seeds	29-Aug	71.1	65	41
ABS 217 (Red)	Allium Seeds	30-Aug	73.7	31	33
Garnet	Allium Seeds	31-Aug	71.7	33	38
Red Baron	Bejo/DGS	31-Aug	73.4	40	38
Means		28-Aug	74.9	40	47

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. In cooler years, such as 2013, the opportunities to harvest later maturing varieties can run over into October which can result in bulbs being harder to dry.

For organic growers and for high disease pressure years the mildew resistant varieties offer potential – Santero was the highest yielding variety on the mildew affected Norfolk site in 2014 – neither of the 2015 trials had significant levels of mildew.

Establishment was good. Seed beds were generally of a good quality; cold temperatures in March and April meant that growth was slow; a dry spring meant that there wasn't much damping off but the dry conditions meant some commercial crops were susceptible to and suffered from blow. June was also dry but a wet late July and early August helped with bulb filling.

Hybound, BGS298 (Drytan), Hytune, Hypark and Hybing were the earliest maturing brown varieties of the drilled trials. Red Light and Red Tide were the earliest of the reds. Vision, and Centro are also consistently at the earlier end of the spectrum.

The mean of trial yields in Norfolk was 69t/ha browns and 62t/ha reds, some early competition from weeds and the dry weather on a sandy soil may have contributed to the yields not achieving more.

The Essex trial had record yield means of 102t/ha browns and 88t/ha reds. A good start on virgin onion land with minimal disease pressure all contributed to showing the upper end of the yield potential of the varieties.

The highest yielding brown varieties were Hybing, BGS298 (Drytan), Hytune and Hytech. Red Light was the highest yielding red variety.

There were a minimal number of rots in the harvested material and this was reflected in the storage results too. Some commercial crops still had issues with Fusarium.

Hytune, SV8528ND, SV1332ND, SV3700ND, Hyfive, Chico, Hyway, Progression and ABS217 were the best of the varieties for having high percentages of single centres.

Hybound, Hybing, Hypark, Hysky, Progression, Chico, AF1.11 and Red Planet all performed well in 2014. Hypark, Hysky and Chico in 2013.

Storage assessments in an ambient store, were recorded in late-April and late-May 2016.

Storage potential continues to be a key factor for drilled crops. As in 2012/13, 2013/14, 2014/15 Vision had above average percentages of sound bulbs at the late-May assessment. Hybound, Medaillon and Motion also performed above average in 2015/16.

Red Tide and ABS212 performed well in the reds. Redspark was average but had performed above average in previous years.

Stored bulb quality was generally very good throughout most of the varieties.

The highest percentage of sound bulbs from the controlled environment store was from Vision, as in previous years, others which performed above the average in 2015/16 and 2014/15 were Wellington and Chico.

BGS298, SV8528ND, Hyway and Progression were all above average in 2015/16.

Red Light had the highest percentage of sound bulbs in the reds.

Main Conclusions

Drilled Trials

In the drilled trials there was approx. 24t/ha between the highest and lowest yields (mean of both trials).

Drilled material showed a difference of over 65%, between the best and worst storage potential from ambient store and of approx. 50% from CE cold storage.

Mildew resistant varieties require fewer and or cheaper fungicide programmes.

Action Points

- Select a range of varieties according to soil type, desired harvest period, habit vigour and disease tolerance.
- Select varieties best suited to your storage facilities.
- For varieties not suited to long term storage growers must be able to sell their produce quickly.
- In high disease pressure years growers should take advantage of material with disease resistance e.g. mildew resistance.