

Blackberry and Hybrid Berry

Final Trials Report

2013 – 2015



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RHS Trial of Blackberry and Hybrid Berry

Introduction to *Rubus*

Rubus is a genus of around 250 species of plant. They are either deciduous or evergreen shrubs or climbers. They are found in a range of different habitats all over the world and can be found growing in places including mountain slopes, woodlands and coastal sand dunes. *Rubus* species vary from frost to fully hardy and like to be grown in moderately fertile, well-drained soil.

The plants produced saucer or cup-shaped flowers (generally white or pink) followed by edible fruit. Some entries had stems bearing thorns whilst others were thornless.

Trial objectives

To select suitable cultivars which are worthy of the Award of Garden Merit (AGM) and suitable for the amateur to grow in a garden. Also to demonstrate the cultivation of blackberries and hybrid berries.

Evaluation

The Fruit Trials Forum assessed entries in the trial for the Award of Garden Merit on the following dates:

2013: 17 July, 7 August, 28 August, 2 October.

2014: 25 June, 16 July, 13 August, 1 October.

2015: 15 July, 19 August, 30 September.



Assessment 7 August 2013



Assessment 30 September 2015

The judging criteria were as follows:

- **Reliable crops** – good, regular crops every year; crops were weighed and both good fruit and un-useable fruit were recorded.
- **Easy to manage** – spine free preferably; not over vigorous; adequate cane replacement every year; crop easy to pick with well-presented fruits.
- **Resistance** to disease with no obvious failings.
- **Fruit quality** – good size (10-40mm); good appearance (bright and fresh); good flavour, judged both as fresh fruit and cooked fruit (fruits were cooked and tasted without and with a standard amount of added sugar). Brix test was made on the fresh juice; brix test is a measure of the amount of sucrose present in the juice. In the trial the levels varied from 4 to 12 – a brix of 4 would have little sucrose whilst one of 12 would be less sharp.
- **Length of harvest** – was recorded, but whether the amateur needs or would wish for the very long periods of harvest shown by some of the cultivars is questionable.

Entries

Nineteen cultivars were entered for trial, which were submitted by various commercial growers across the UK, listed as supplying certified stock in the DEFRA Plant Health Propagation Scheme list. Three plants of each cultivar were planted, except for the primocane cultivar Ruben, of which nine were planted.

Cultivation

The trial entries were received as either 9 cm plants, 1 litre plants or bare rooted. They were planted in the Trials Field in November 2011, with the exception of 'Asterina' which was planted in April 2012 as it was received late.

The initial planting of 'Buckingham' tayberry was removed as not being true to type and replaced with new stock on 4 May 2012.

Two replacement plants of 'Natchez' were planted as the original plants died. One replacement was planted on 4 May 2012, the other on 10 September 2012. This later planted replacement would not be included in the cropping records.

Soil analysis was undertaken to establish nutrient levels and the following granular fertilisers were applied to the trial plot on 2 April 2012:

- Sulphate of Potash 16 g/m²
- Kieserite 21 g/m² (Magnesium)

On 17 July and 19 August 2012 the trial was sprayed with Epsom Salts at a rate of 10 g/litre as some of the leaves were showing Magnesium deficiency. This was repeated on 8 July 2014.

In 2014, following soil analysis, the following fertilisers were applied to the trial:

- 9 April Sulphur chips 70 g/m²
- 9 April Sulphate of Potash 36 g/m²
- 29 April Sulphate of Ammonia

No fertilisers were applied to the trial in 2013 or 2015.

Florican entries (1-17) produce fruit on the previous year's growth and these were planted in rows with 3 m between each plant. The primocane entry (19 'Reuben') produces fruit on the current year's growth and these were planted in a row spaced 1 m apart. There was a permanent drip irrigation put in place at the base of the plants.

The first crop was taken in 2013.

In the autumn, after the floricanes had finished cropping, the spent canes were removed and the new canes were trained and tied into position. New canes that were too long were shortened.

The primocanes were cut back to ground level in late winter. In the second year new growth was stopped in late spring, at approximately 1 m, to encourage further growth.

RHS advice on pruning and training blackberries and hybrid berries can be found here: <https://www.rhs.org.uk/advice/profile?pid=93>

RHS advice on growing your own blackberries can be found here: <https://www.rhs.org.uk/advice/grow-your-own/fruit/blackberries>

Pest and Disease

A fruit cage was installed to protect the ripening fruit from birds and an electric fence was used to protect it from badgers.

Preventative controls:

- Blackberry midge - a new type of pheromone traps was used to control this pest. It was vivid red in colour to deter beneficial insects, as they are generally not so attracted to red. The trap contained a pheromone to attract the midges and a sticky pad to stop them from escaping.
- Raspberry leaf and bud mite (*Phyllocoptes gracilis*) - the microscopic raspberry leaf and bud mites feed on the underside of the leaves and cause yellow blotches on the foliage. Bio-control in the form of *Amblyseius cucumeris* mites were used to combat this pest. RHS advice can be found here: <https://www.rhs.org.uk/Advice/profile?PID=696>

The following pests and diseases were encountered during the trial:

- Aphids – controlled using a foliar spray of SB Plant Invigorator. RHS advice can be found here: <https://www.rhs.org.uk/advice/profile?pid=181>
- Leaf hopper – controlled with the insecticide Spruzit (active ingredient pyrethrins)
- Red berry mite (*Acalitus essigi*) – these mites cause internal damage to the droplets of the berries which stops them from ripening. Biological control was used against this pest.
- Fireblight (*Erwinia amylovora*) – confirmed in a sample of ‘Karaka Black’. This is a bacterial disease which kills the shoots of a number of different plants. RHS advice can be found here: <https://www.rhs.org.uk/advice/profile?pid=160>
- Honey fungus (*Armillaria*) - confirmed in a sample of ‘Helen’. This fungal disease causes the death of the plant by attacking and killing its roots. RHS advice can be found here: <https://www.rhs.org.uk/advice/profile?PID=180>
- Phytophthora root rot – confirmed in a sample of ‘Black Butte’ and thought to have killed ‘Loch Ness’. The affected plants and their surrounding soil were removed and destroyed to prevent this disease spreading to other plants in the trial. RHS advice can be found here: <https://www.rhs.org.uk/advice/profile?PID=542>
- Purple blotch (*Septocyta ruborum*) – a fungal disease causing purple blotches and lesions and bud or shoot dieback.
- Raspberry cane spot (*Elsinoë veneta*) - confirmed in a sample of tayberry . ‘Tayberry’. This causes dark spots with paler centres to form on the leaves and stem in May or June. In some cases the spots spread and can kill off the cane / distort the fruit. Affected stems were removed and then Folicur (active ingredient tebuconazole) was applied to the trial.
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- Verticillium wilt (*Verticillium dahliae*) - confirmed in a sample of 'Navaho'. This soil-borne fungal disease causes dieback and the leaves to wilt. Affected canes were removed and a drench of Triatum P (*Trichoderma harzianum* T-22) was periodically applied to the trial. This product contains a fungus to promote plant growth and increase the plant's resistance to stress caused by diseases etc. RHS advice can be found here: <https://www.rhs.org.uk/advice/profile?PID=255>

Flowering and Cropping

Flowering started very early in 2014 (April/May) whilst in 2013 and 2015 most were in flower May/June.

Likewise picking started in June in 2014, and in July in 2013 and 2015. The 2013 season was short ranging from 40-70 days whilst in 2014 and 2015 it carried on with many plants still bearing edible but rather tasteless fruit into November.

Overall yields varied with 'Asterina' giving the heaviest crop over the three years (averaging 15.7 kg/bush/annum) compared to 'Loch Ness' average 9.8 kg. 'Tayberry' averaged 3.4 kg. Loganberry averaged 4.8 kg. 'Ouachita' averaged 9.8 kg.

Harvest

The fruit was harvested regularly by gently pulling the ripe berries from each plant. Even though some of the blackberries looked fully ripe in colour, they could be very sharp indicating that they needed a little longer on the plant to gain more sweetness. Selecting plump, firm, fully coloured berries is therefore recommended. Unripe berries do not ripen once picked.

Eat the fresh berries within a few days of harvesting. Some varieties were found to keep better than others. Alternatively, they can be frozen, cooked, or made into jam or jelly.

Scoring Scale

A scoring scale from 1-5 was used throughout the trial; this was used for each evaluation criteria in the records compiled by the Fruit Trials Forum.

Conclusions and Recommendations

1. AGM should be awarded to blackberry 'Loch Tay'.
2. AGM re-confirmed for tayberry 'Tayberry'.
3. AGM re-confirmed for blackberry 'Loch Ness'.
4. Loganberry 'Ly 654' retains its AGM, but this trial cannot be used to re-confirm this, as there is some difficulty in correctly identifying the cultivar sent by the supplier.

Plants Receiving the Award of Garden Merit



The following are the plants thought to fulfil the Award of Garden Merit criteria during the trial and to be worthy of receiving the award. The criteria which a plant needs to fulfil in order to receive the award are:

- excellent for ordinary use in appropriate conditions
- available
- of good constitution
- essentially stable in form and colour
- reasonably resistant to pests and diseases

Hardiness ratings are as follows:

H5 = Hardy - cold winter (-15°C – -10°C)

H6 = Hardy - very cold winter (-20°C – -15°C)

Names that are struck through have been updated / corrected by RHS Botanists during the course of the trial.

Plants Awarded AGM:

Blackberry 'Loch Tay' AGM (H5) 2015

Trial entry: 11

Sent by: Hargreaves Plants

Season: early

Thornless

Origin: "Protected by EU PVR 16917. Bred at Scottish Crop Research Institute (SCRI); Loch Ness x SCRI 82417D.

Comments and Conclusion:

Vigour: medium vigour

Canes: spine free; plenty of new growth and canes from year 2.

P&D: some chlorosis on all plants.

Fruit: nice, shiny fruits. Easy to pick.

Yield: good/heavy; weight good fruit per plant: 8-11.6 kg; 89-97% fruit useable.

Cropping period: long, over 2-4 months.

Quality: fruit rather small, resembling a wild blackberry in shape, attractive appearance, excellent eating quality, though berries need to be fully ripe. Cooked fruit: unsweetened – good flavour, sharp; sweetened: good flavour.

Brix test: 9-11.

'Loch Tay' has medium vigour, spine free canes and excellent quality fruit, well suited to the garden. It is recommended for AGM.



Reconfirmed AGMs:

**Tayberry Tayberry 'Tayberry' AGM (H5)
1993, reconfirmed 2015**

Trial entry: 5

Sent by: Hargreaves Plants

Season: main season.

Has thorns

Origin: Raised by Dr. D. Jennings, SCRI, Dundee; introduced 1979; Aurora blackberry x raspberry hybrid.

Comments and Conclusion:

Vigour: medium vigour

Canes: spiny; plenty of new canes. The red canes provide additional decorative winter interest once the leaves have fallen.

P&D: two healthy plants; one showed weak growth.

Fruit: can suffer from heat damage in very hot weather. Easy to pick.

Yield: good; weight per plant good fruit 2.2-4.8 kg; useable fruit 69-84%.

Cropping period: average 1 month.

Quality: medium size berries are deep red and soft when fully ripe. They are attractive with very good eating quality; sharp, but pleasant; taste can be perfumed and excellent. Cooked fruit: unsweetened - good intense flavour; sweetened – very good flavour.

Brix test: 9-11.

Confirmed award of AGM to 'Tayberry'.



Blackberry 'Loch Ness' AGM (H6) 1993, reconfirmed 2015

Trial entry: 16

Sent by: Hargreaves Plants

Season: mid

Thornless

Origin: Raised Dr. Derek Jennings, SCRI, Dundee.

"UK Grant No 4017" source/sender.

Comments and Conclusion:

Vigour: medium vigour.

Canes: spine free; plenty of new canes.

P&D: one plant was removed due to *Phytophthora* (root rot disease).

Fruit: nice, bright looking fruit. Easy to pick.

Yield: variable; weight per plant good fruit – 7.6-13.8 kg; 70-93% useable fruit.

Cropping period: long, 2-4 months.

Quality: large, attractive black berries; fully ripe berries have good flavour, but must be well ripened otherwise sour and acidic.

Cooked fruit: unsweetened – good/sharp flavour; sweetened – good flavour.

Brix test: 4-9.

'Loch Ness' is a medium vigorous variety and spine free. The fruits are large and can have an attractive flavour, provided they are well ripened. Recommended that the AGM for Loch Ness be re-confirmed.



Other entries in the trial which were not given an award:

Blackberry 'Obsidian'

Trial entry: 1

Sent by: RW Walpole Ltd

Season: early

Has thorns

Origin: Raised by USDA breeding programme Corvallis, Oregon; complex parentage introduced in 2005.

Comments and Conclusion:

Vigour: fairly vigorous.

Canes: spiny, can be very prickly; plenty of new canes and growth by second and third years. Canes can snap quite easily. Some very late blossom on primocanes which would be useful.

P&D: reasonable healthy.

Fruit: exhibits its fruit incredibly well and the fruit is easy to pick.

Yield: is moderate to good, with weight varying from 4.08 – 10.2 kg good fruit per plant and 82 - 89% of crop useable.

Cropping period: starts cropping about a month earlier than wild blackberries.

Cropping for around 2 months.

Quality: good - quite large, good-looking, dark black, shiny berries, hence its name. Berries taste nice but the flavour declined as the season progressed. Flavour varied from highly rated to satisfactory. Cooked fruit – very acid and sharp without sugar; moderately pleasant with sugar.

Brix test on fresh juice, 7-11.

'Obsidian' has good/quite good flavour and comes into cropping early, before wild blackberries are available and so useful in the garden. Quite vigorous and reasonably manageable in this respect, but it is thorny and not exceptionally well flavoured.

A majority of members were not in favour of awarding Obsidian an AGM.

Not recommended for AGM.



Blackberry 'Karaka Black'

Trial entry: 2

Sent by: RW Walpole Ltd

Season: early

Has thorns

Origin: "Bred by Harvey Hall of the HortResearch breeding programme in New Zealand, using parent material from both Oregon and Arkansas programmes" source/sender.

Comments and Conclusion:

One plant died in second year and all plants were removed in third year, due to disease, so incomplete data on this cultivar.

Vigour: quite weak vigour, small compact plant. Good plants for a small garden.

Canes: spiny; adequate cane replacement; good autumn foliage colour.

P&D: all plants succumbed to disease – *Phytophthora* and fireblight.

Fruit: easy to pick (av. score 4).

Yield: good, 4.5-5.5 kg good fruit per plant with 77-86% of fruit useable.

Cropping period: 7-9 weeks (48-64 days).

Quality: quite large, attractive fruits; good flavour, not too sharp, can be perfumed. No fruit available for cooked tests.

Brix test: 6-13.

'Karaka Black' can have an attractive, distinctive flavour and it is not very vigorous so suited to the garden, but spiny.

Suffered with disease and the plants all died so unable to assess during the whole trial. This ruled it out for an AGM at this time. Nevertheless, because of its excellent fresh fruit flavour, the forum will continue to monitor this cultivar in the model fruit garden at Wisley and elsewhere.



Blackberry 'Helen'

Trial entry: 3

Sent by: RW Walpole Ltd

Season: early

Thornless

Origin: Bred by Dr. Derek Jennings, introduced by Medway Fruits" source/sender.

Comments and Conclusion:

Vigour: weak in first two years, but good growth in third year; overall not a vigorous plant; reported to take some time to establish. As the plants are a bit smaller than some other cultivars they can be planted closer together in the garden situation. Look neat and tidy and are easy to manage.

Canes: spine free, easy to train; adequate cane renewal.

P&D: one plant died year 3 due to honey fungus.

Fruit: reasonably easy to pick.

Yield: variable, poor to moderate (1.66- 4.42 kg); 57-80% useable fruit.

Cropping period: variable, 6-9 weeks.

Quality: small black berries, reasonably attractive, variable eating quality; can be quite good with traditional blackberry flavour, but can be sharp, acidic, poor and overall not good. Cooked fruit: unsweetened - some blackberry flavour; sweetened – good flavour.

Brix test: 5 – 7.

'Helen' will make a relatively small, manageable plant with spine free canes and so suited to the amateur, but in this trial the plants suffered from a fair amount of disease with one plant dead by year 3. Not recommended for AGM.



Blackberry 'Natchez'

Trial entry: 4

Sent by: Hargreaves Plants

Season: early

Thornless

Origin: Raised University of Arkansas; complex parentage.

Comments and Conclusion:

Vigour: vigorous.

Canes: spine free; plenty of new canes.

P&D: healthy plants.

Fruit: very glossy and shiny fruits, generally easy to pick.

Yield: good/heavy; 5.0-14.6 kg good fruit per plant; 76-94% useable.

Cropping period: 2-3 months.

Quality: large, black berries, but can be variable size, shape and appearance; variable flavour recorded - pleasant/good taste to sharp and acidic.

Brix test: 8-10.

'Natchez' makes a very large plant putting out long, thick canes, it is spine free and so could be managed and cut back in the spring to make a more compact plant; could also be regarded as ornamental with large bold foliage. Considered to be far too vigorous for most amateur gardens. Not recommended for AGM.



Tayberry 'Buckingham'

Trial entry: 6

Sent by: RW Walpole Ltd

Season: early

Thornless

Origin: Spineless form of Tayberry; discovered in Buckinghamshire 1998, introduced shortly afterwards.

Comments and Conclusion:

Vigour: rather poor plants with weak growth.

Canes: poor, few/moderate replacement canes.

P&D: all plants weak growth.

Fruit: easy to pick.

Yield: very poor; weight of good fruit per plant less than 1kg; useable fruit 44-85%.

Cropping period: 1 month.

Quality: very poor; small fruits.

Brix test: 9 for one season

Not recommended for AGM.



Tummelberry

Trial entry: 7

Sent by: RW Walpole Ltd

Season: early

Has thorns

Origin: Bred by the Scottish Crop Research Institute in 1973. A cross between tayberry and an unnamed hybrid seedling 69102/18.

Comments and Conclusion:

Vigour: medium vigour. Took a long time to get properly established.

Canes: spiny; good cane replacement.

P&D: healthy plants.

Fruit: easy to pick.

Yield: varied from poor to good; weight good fruit per plant - 0.4-4.8 kg; useable fruit 87-89%.

Cropping period: around 1 month.

Quality: medium sized, red berries with moderate eating quality; weak flavour in comparison with Tayerry. Cooked flavour unsweetened – sharp; sweetened – pleasant.

Brix test: 8-10.

'Tummelberry' is usually recommended for jam making, but in this trial had a weak flavour. It is moderately vigorous so can be managed in a garden, but spiny. Not recommended for AGM.



Loganberry Loganberry 'AO numbered'

Trial entry: 8

Sent by: Hargreaves Plants

Season: early - mid

Thornless

Origin: Loganberry was raised 1880 by Judge Logan in California; cross between a raspberry and a blackberry and the best known of the hybrid berries. The thornless form LY654 was selected 1960s-1970s. The identity of the cultivar in this trial - Loganberry 'AO numbered' is not clear.

Comments and Conclusion:

Vigour: medium vigour, but growth variable between plants.

Canes: spine free; plenty of new growth by year 2 on good plant.

P&D: variation between plants.

Fruit: easy to pick.

Yield: good by year 2; weight per plant of good fruit 2.0-6.5 kg; 73-84% useable fruit.

Cropping period: 1-3 months.

Quality: medium sized, attractive red fruits with excellent flavour; quite sharp and perfumed. Cooked fruit unsweetened: sharp good flavour; sweetened: good flavour. Known to make good jam.

Brix test: 10-12.

Moderately vigorous, spine free plant with good yields of high quality fruit; strongly recommended for amateurs.

Loganberry 'Ly 654' already has an AGM and we are looking to reconfirm this.

However, in this trial, the identity of the spine free Loganberry could not be confirmed with Hargreaves to be Loganberry LY654 and this could not be used to re-confirm the AGM to loganberry 'Ly 654' at this time. The AGM to loganberry 'Ly 654' remains in place.

Further investigation is necessary concerning the loganberry in this trial. It was suggested that thorned and thornless loganberries (including 'Ly 654') be grown at Wisley for the Fruit Trials Assessment Forum members to monitor over the next few years.



Blackberry 'Black Butte'

Trial entry: 9

Sent by: RW Walpole Ltd

Season: early

Has thorns

Origin: Raised by USDA Corvallis, Oregon.

Comments and Conclusion:

Vigour: medium vigour, but two plants removed during trial.

Canes: spiny, good new cane growth by the second year.

P&D: two unhealthy plants, both dead by year 3; both suspected infected with *Phytophthora*.

Fruit: very large berries, nice and shiny and quite long. Easy to pick.

Yield: moderate with only one plant by year 3; weight per plant of good fruit: 2.8-4.35 kg; 65-89% good fruit.

Cropping period: 1–3 months.

Quality: large, attractive black berries; generally poor flavour, very acidic. Can ripen unevenly. Cooked fruit: very dark colour; unsweetened taste generally judged moderate to poor, very sharp; sweetened - taste improved.

Brix test: 5-5.5.

'Black Butte' makes a moderately vigorous plant, but with spiny canes. Fruit is large, suitable for the show bench. Not recommended for AGM.



Blackberry 'Asterina'

Trial entry: 10

Sent by: RW Walpole Ltd

Season: late

Thornless

Origin: Raised by Peter Hauensein, Switzerland; cross between 'Loch Ness' and 'Chester'.

Comments and Conclusion:

Vigour: very vigorous; decorative large pink flowers and large ornamental leaves.

Canes: spine free, plentiful new growth and canes.

P&D: generally healthy.

Fruit: easy to pick and well presented.

Yield: high; average weight good fruit per plant -14.5-17.2 kg, 62-82% of crop useable.

Cropping period: over 1 month initially, then up to 3 months.

Quality: medium/large, black berries; attractive appearance; flavour can be good when fully ripe, but can be very sour and acidic. Cooked fruit flavour: unsweetened very sharp, but some flavour; sweetened improved.

Brix test: 7.

'Asterina' is a vigorous, spine free cultivar, however, it takes up too much room for its variable quality; it could be managed and made more compact by cutting back the canes. The berries are a good size and attractive appearance, but very sharp unless fully ripe. Crops over a very long period.

Not recommended for AGM.



Blackberry 'Čačanska Bestrna'

Trial entry: 12

Sent by: RW Walpole Ltd

Season: late

Thornless

Origin: "Raised in 1984 from the cross Dirksen Thornless and Black Satin in Serbia. It was tested as 1-III-87" source/sender.

Comments and Conclusion:

Vigour: very vigorous.

Canes: spine free; attractive red stems add decorative appeal. Plenty of new canes.

P&D: 2 plants not healthy.

Fruit: bright, glossy, attractive berries. Easy to pick, well presented.

Yield: heavy; weight per plant of good fruit 12.6-14.5 kg first and second year. Third year disappointing 6.6kg/plant.

Cropping period: long; over 1 month to nearly 4 months.

Quality: varies from quite small to quite large; very sour and acidic unless very well ripened. Cooked fruit: unsweetened - very sharp; sweetened - weak flavour.

Brix test: 6-7.

'Čačanska Bestrna' makes a very vigorous plant with spine free canes, which could be shortened to make a more compact plant, but it would need plenty of room. Flavour is very sharp and we would not recommend for a garden. Not recommended for AGM.



Blackberry 'Ouachita'

Trial entry: 13

Sent by: Hargreaves Plants

Season: mid

Thornless

Origin: "EUPVR app no. 2006/2430, USPP 11762. The latest cultivar from the University of Arkansas" source/sender.

Comments and Conclusion:

Vigour: very vigorous but one plant was not as good as the others. Has enormous leaves.

Canes: spine free; plenty of new growth and replacement canes.

P&D: reasonably healthy.

Fruit: easy to pick. Well displayed.

Yield: good; weight good fruit per plant 7.2-11.8 kg; 69-92% useable fruit.

Cropping period: long, 2-3 months.

Quality: large, attractive black berries; uneven fruit size; eating quality - fairly sharp; some fruit good, quite sweet and juicy; often disappointing for such an attractive looking berry. Cooked fruit: without sugar – sour, little flavour; sweetened – weak to pleasant flavour.

Brix test: 7-8.

'Ouachita' is very vigorous, making a very large plant; it is spine free so could be managed and made more compact. Large attractive looking berries with flavour varying from sharp to quite good. Hard to tell when the berries are fully ripe. Heavy crops over a very long season. Not recommended for AGM.



Blackberry 'Navaho'

Trial entry: 14

Sent by: Hargreaves Plants

Season: mid - late

Thornless

Origin: "US Plant Patent 6679. From the University of Arkansas." source/sender.

Comments and Conclusion:

Vigour: very vigorous; attractive, large ornamental flowers and foliage.

Canes: spine free; plenty new growth replacement canes. Some primocane flowering and fruiting. Suckers needed to be removed.

P&D: healthy plants.

Fruit: has a nice colour and is very shiny. Easy to pick. Displayed well and clear of the foliage.

Yield: good; weight per plant good fruit – 8.6-18 kg; 66-85% useable fruit.

Cropping period: long; 2-3 months.

Quality: large, attractive, bright, black berries; flavour can be good, quite sweet and pleasant, but needs to be well ripened otherwise sour and acidic. Cooked fruit: unsweetened – some flavour; sweetened – pleasant.

Brix test: 8.

'Navaho' is very vigorous producing very long canes with attractive flowers and foliage; canes are spine free so could be managed and cut back to a more compact habit. Fruit is large, with attractive appearance and reasonably good flavour when fully ripe; heavy crops over a long period.

Some members were in favour of awarding this an AGM but not the majority.

Not recommended for AGM.



Blackberry 'Loch Maree'

Trial entry: 15

Sent by: RW Walpole Ltd

Season: mid

Thornless

Origin: "A variety from the SCRI breeding programme." source/sender.

Comments and Conclusion:

Vigour: weak/medium vigour; attractive, unusual pink double blossom which ages to white.

Canes: spine free; adequate new canes.

P&D: all plants showing some signs of disease, weak, poor growth by the end of the trial.

Fruit: easy to pick.

Yield: variable – 3.8-8.8 kg good fruit per plant; 81-90% useable fruit.

Cropping period: 2-3 months and longer.

Quality: small, black fruits, varying in quality from a good wild blackberry flavour to rather weak and sour. Cooked fruit: unsweetened – very sharp/moderately good; sweetened – quite good, pleasant.

Brix test: 8.

'Loch Maree' shows modest vigour with spine free canes and so suited to the garden, however, it did not perform well in this trial.

Not recommended for AGM.



Blackberry 'Chester'

Trial entry: 17

Sent by: Hargreaves Plants

Season: late

Thornless

Origin: Raised by University of Maryland.

Comments and Conclusion:

Vigour: very vigorous with thick long canes and decorative large, pale pink flowers and large leaves.

Canes: spine free, plenty of new canes.

P&D: all plants healthy.

Fruit: easy to pick; displays fruit well.

Yield: heavy; 12.8-16.8 kg good fruit per plant; 65-80% useable fruit.

Cropping period: very long, by year 2 – over 3 months. Finished picking end of November.

Quality: medium/large, black berries; eating quality generally disappointing; bland and acidic; must be well ripened for eating fresh.

Cooked fruit: unsweetened – sour, very sharp; sweetened - good/pleasant.

Brix test: 7-8.

'Chester' is very vigorous producing enormous spine free canes, making a very large plant. Heavy crops are produced over a very long period, but it is doubtful whether the moderate quality fruits are worth the amount of space the plant will occupy.

Not recommended for AGM.



Blackberry 'Triple Crown'

Trial entry: 18

Sent by: RW Walpole Ltd

Season: late

Thornless

Origin: raised at the University of Maryland.

Comments and Conclusion:

Vigour: medium/vigorous.

Canes: spine free; plenty of new canes.

P&D: healthy plants.

Fruit: easy to pick.

Yield: medium; weight good fruit per plant 7-8.3 kg; 67-99% useable fruit.

Cropping period: long and by year 2 extending over 3-4 months.

Quality: medium/quite large, attractive, black berries; eating quality is variable. Fruit can have a poor, weak, woody flavour. Cooked fruit: unsweetened – sour, poor; sweetened - quite good.

Brix test: 7-10.

'Triple Crown' is not as vigorous, as for example, 'Chester' and spine free, but we considered its quality only moderate, although it is generally regarded as superior to 'Chester'.

Not recommended for AGM.



Blackberry 'Reuben'

Trial entry: 19

Sent by: Hargreaves Plants

Season: late primocane

Has thorns

Origin: raised at University of Arkansas.

Comments:

Vigour: weak/medium.

Canes: spiny; adequate number of new canes.

P&D: plants appeared healthy with ornamental large white but few flowers.

Fruit: easy to pick.

Yield: virtually no crop year one. Year 2 and 3: first pick mid-August and still fruiting mid/late November. Poor crop: 0.3-3.7 kg good fruit per plant; 47-66% useable fruit.

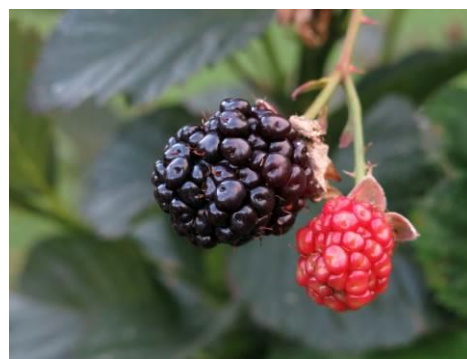
Cropping period: late into flower and very late ripening. First year only 1 pick; year 2 and 3 extended over 3 months.

Quality: berries are attractive in appearance - large, black – though generally lacked flavour, but there was insufficient crop to properly taste this cultivar. Cooked fruit: unsweetened - very poor flavour; sweetened – improved.

Brix test: 7.

Crop is very late in maturing. It performed well the last year of the trial but did not perform well in previous years. This ruled it out for an AGM at this time.

Nevertheless, it was believed that this cultivar needed to be given a longer period of evaluation and also because of its more promising performance in 2015, The Forum will continue to monitor these plants in their current location at Wisley. Not recommended for AGM.



Yields during the course of the trial

3 plants present per entry unless otherwise specified

Usable yield = yield of saleable quality. Waste = yield NOT of saleable quality.

% Good = % of total crop that was of saleable quality. Weight per bush Good = Weight per bush of saleable quality fruit

<u>2013</u>	1 blackberry 'Obsidian'	2 blackberry 'Karaka Black'	3 blackberry 'Helen'	4 blackberry 'Natchez'	5 tayberry 'Tayberry'	6 tayberry 'Buckingham'	7 tummelberry	8 loganberry loganberry 'AO numbered'	9 blackberry 'Black Butte'	10 blackberry 'Asterina'
Brix reading	11,12,14 (06/08/13)	10,12,10 (06/08/13)	10,10,8 (06/08/13)	10,10,8 (06/08/13) 11,11 (06/09/13)	10,11,10 (06/08/13)	8,8 (06/08/13)	7,7 (06/08/13)	7,8,11 (06/08/13)	6.5,8.5,8 (06/08/13)	7,7 (06/09/13)
1st Flower	03/06/2013	03/06/2013	03/06/2013	10/06/2013	03/06/2013	06/06/2013	07/06/2013	10/06/2013	10/06/2013	01/07/2013
Full Flower	10/06/2013	10/06/2013	10/06/2013	10/06/2013	10/06/2013	07/06/2013	10/06/2013	17/06/2013	17/06/2013	10/07/2013
Start Picking	15/07/2013	12/07/2013	17/07/2013	22/07/2013	12/07/2013	24/07/2013	12/07/2013	17/07/2013	17/07/2013	19/08/2013
Finished	23/09/2013	29/08/2013	27/08/2013	02/10/2013	12/08/2013	27/08/2013	12/08/2013	02/09/2013	27/08/2013	05/11/2013
Usable Yield Kg	13.05	13.52	5.00	14.67	6.46	0.52	1.30	5.34	13.07	49.05
Waste Kg	1.58	2.11	1.21	1.16	1.25	0.34	0.16	1.24	1.06	13.15
% Good	89.22	86.53	80.58	92.67	83.76	60.59	89.01	81.14	92.53	78.86
Weight per bush Good. Kg	4.35	4.51	1.67	7.30 (2 plants)	2.15	0.17	0.43	1.78	4.36	16.35
Comments				Left and middle plants only						

<u>2013</u>	11 blackberry 'Loch Tay'	12 blackberry 'Čačanska Bestrna'	13 blackberry 'Ouachita'	14 blackberry 'Navaho'	15 blackberry 'Loch Maree'	16 blackberry 'Loch Ness'	17 blackberry 'Chester'	18 blackberry 'Triple Crown'	19 blackberry 'Reuben'
Brix reading	9,10,8.5 (06/08/13) 11,7 (06/09/13)	6,9 (06/09/13)	11,11,12 (06/08/13) 11,11 (06/09/13)	12,12,10 (06/08/13) 9,9 (6/9/13)	5,5,5 (06/08/13) 10,6 (06/09/13)	7.5, 8,10 (06/08/13) 3,7 (06/09/13)	8,8 (06/09/13)	8,9 (06/09/13)	(No Brix results given)
1st Flower	10/06/2013	01/07/2013	12/06/2013	12/06/2013	03/06/2013	05/06/2013	30/06/2013	24/06/2013	29/07/2013
Full Flower	17/06/2013	09/07/2013	17/06/2013	20/06/2013	10/06/2013	10/06/2013	01/07/2013	01/07/2013	
Start Picking	17/07/2013	19/08/2013	01/08/2013	30/07/2013	17/07/2013	24/07/2013	23/08/2013	05/08/2013	30/09/2013
Finished	03/10/2013	05/11/2013	05/11/2013	05/11/2013	28/10/2013	05/11/2013	05/11/2013	05/11/2013	05/11/2013
Usable Yield Kg	27.06	45.78	37.54	34.23	17.91	44.16	53.54	23.76	0.23
Waste Kg	0.71	10.71	4.35	9.14	2.70	5.58	16.38	10.39	0.31
% Good	97.46	81.04	89.61	78.93	86.90	88.78	76.57	69.58	42.06
Weight per bush Good. Kg	9.02	15.26	12.51	11.41	5.97	14.72	17.85	7.92	0.025
Comments									9 plants

<u>2014</u>	1 blackberry 'Obsidian'	2 blackberry 'Karaka Black'	3 blackberry 'Helen'	4 blackberry 'Natchez'	5 tayberry 'Tayberry'	6 tayberry 'Buckingham'	7 tummelberry	8 loganberry loganberry 'AO numbered'	9 blackberry 'Black Butte'	10 blackberry 'Asterina'
Brix reading	7,8,8 (6/8/14)	6,8,10 (7/14) 12. (6/8/14) 13,10,10 (11/8/14)	8,9,9 (6/8/14)	6,10,11 (6/8/14)	(No Brix results given)	9 (7/14)	(No Brix results given)	11,12,10 (7/14) 11,11 (6/8/14)	9 (7/14) 8 (6/8/14)	8,7,7 (22/8/14)
1st Flower	23/04/2014	23/04/2014	23/04/2014	05/05/2014	28/04/2014	07/05/2014	28/04/2014	28/04/2014	12/05/2014	04/06/2014
Full Flower	28/04/2014	12/05/2014	12/05/2014	19/05/2014	05/05/2014	19/05/2014	12/05/2014	05/05/2014	06/06/2014	19/06/2014
Start Picking	16/06/2014	10/06/2014	20/06/2014	02/07/2014	10/06/2014	25/06/2014	13/06/2014	13/06/2014	16/06/2014	16/07/2014
Finished	01/09/2014	03/09/2014	01/09/2014	16/10/2014	19/09/2014	19/09/2014	18/08/2014	17/09/2014	19/09/2014	03/11/2014
Usable Yield Kg	29.27	15.91	15.44	9.01	6.21	0.42	13.98	17.71	9.01	47.81
Waste Kg	4.06	4.38	4.34	2.22	2.68	0.45	1.51	3.25	4.48	29.92
% Good	87.82	78.41	78.07	80.23	69.84	47.92	90.25	84.51	66.77	61.51
Weight per bush Good. Kg	9.76	5.30	7.72 (2 plants)	4.51 (2 plants)	2.07	0.14	4.66	5.90	3.00	15.94
Comments			Right plant removed 14/5/14	Left and middle plants only						

<u>2014</u>	11 blackberry 'Loch Tay'	12 blackberry 'Čačanska Bestrna'	13 blackberry 'Ouachita'	14 blackberry 'Navaho'	15 blackberry 'Loch Maree'	16 blackberry 'Loch Ness'	17 blackberry 'Chester'	18 blackberry 'Triple Crown'	19 blackberry 'Reuben'
Brix reading	6,8,9 (6/8/14)	7,7,7 (11/8/14)	10,9,10 (11/8/14)	11,12,11 (22/8/14)	4,6,7 (6/8/14) 6,6,6 (11/8/14)	6,8,9 (6/8/14) 8,6,8 (11/8/14)	7,7,7 (11/8/14)	10,10,10 (11/8/14)	7,9 (6/8/14) 5,9,8 (11/8/14)
1st Flower	12/05/2014	02/06/2014	19/05/2014	19/05/2014	12/05/2014	12/05/2014	19/05/2014	02/06/2014	16/06/2014
Full Flower	02/06/2014	10/06/2014	02/06/2014	02/06/2014	19/05/2014	19/05/2014	16/06/2014	16/06/2014	
Start Picking	18/06/2014	11/07/2014	14/07/2014	14/07/2014	27/06/2014	30/06/2014	18/07/2014	11/07/2014	06/08/2014
Finished	03/11/2014	18/11/2014	18/11/2014	18/11/2014	03/11/2014	18/11/2014	18/11/2014	18/11/2014	18/11/2014
Usable Yield Kg	23.11	34.44	19.67	23.74	10.17	6.59	43.49	14.99	2.84
Waste Kg	2.35	18.51	8.84	12.08	1.98	2.58	23.58	6.88	4.66
% Good	90.76	65.04	68.99	66.28	83.70	71.84	64.84	68.53	37.86
Weight per bush Good. Kg	7.70	11.48	6.56	7.91	3.39	3.29 (2 plants)	14.50	5.00	0.32
Comments						Middle plant removed 20/08/14			9 plants

<u>2015</u>	1 blackberry 'Obsidian'	2 blackberry 'Karaka Black'	3 blackberry 'Helen'	4 blackberry 'Natchez'	5 tayberry 'Tayberry'	6 tayberry 'Buckingham'	7 tummelberry	8 loganberry loganberry 'AO numbered'	9 blackberry 'Black Butte'	10 blackberry 'Asterina'
Brix reading (all taken 23/7/15)	9, 7, 11		5, 6, 7	9, 8, 10	10, 9, 11	(No Brix results given)	9, 10, 8	10, 11, 12	5, 5, 5	7, 7, 7
1st Flower	17/05/2015	No plants	10/05/2015	17/05/2015	20/05/2015	26/05/2015	17/05/2015	20/05/2015	20/05/2015	
Full Flower	01/06/2015		01/06/2015	01/06/2015	25/05/2015	07/06/2015	25/05/2015	25/05/2015	01/06/2015	
Start Picking	02/07/2015		02/07/2015	09/07/2015	02/07/2015	17/07/2015	01/07/2015	01/07/2015	07/07/2015	24/07/2015
Finished	25/09/2015		28/08/2015	12/10/015	12/08/2015	23/09/2015	03/08/2015	11/09/2015	24/08/2015	13/11/2015
Usable Yield Kg	12.23		8.84	29.19	14.64	0.01	14.17	19.54	2.65	43.85
Waste Kg	2.74		6.60	1.75	3.41	0.11	1.88	7.25	0.68	21.99
% Good	81.69		57.24	94.35	81.12	8.47	88.31	72.95	79.58	66.60
Weight per bush Good. Kg	4.08		4.42 (2 plants)	14.59 (2 plants)	4.88	0.00	4.72	6.51	2.65 (1 plant)	14.62
Comments		all 3 plants removed May 2015	Right plant removed 14/5/14	Left and middle plants only					Left and Middle Plants Removed 24/07/15	

<u>2015</u>	11 blackberry 'Loch Tay'	12 blackberry 'Čačanska Bestrna'	13 blackberry 'Ouachita'	14 blackberry 'Navaho'	15 blackberry 'Loch Maree'	16 blackberry 'Loch Ness'	17 blackberry 'Chester'	18 blackberry 'Triple Crown'	19 blackberry 'Reuben'
Brix reading (all taken 23/7/15)	10, 9, 11	6, 7, 6	7, 8, 7	8, 8, 8	5, 5, 6	5, 4, 4	8, 7, 8	4, 8, 7	7, 7, 7
1st Flower	25/05/2015	15/06/2015	20/05/2015	17/05/2015	17/05/2015	10/05/2015	10/06/2015	08/06/2015	15/06/2015
Full Flower	01/06/2015	28/06/2015	01/06/2015	01/06/2015	01/06/2015	01/06/2015	25/06/2015	20/06/2015	
Start Picking	07/07/2015	17/07/2015	15/07/2015	15/07/2015	07/07/2015	13/07/2015	17/07/2015	17/07/2015	19/08/2015
Finished	12/10/2015	17/11/2015	20/11/2015	20/11/2015	07/10/2015	20/11/2015	17/11/2015	17/11/2015	20/11/2015
Usable Yield Kg	34.92	19.70	30.95	54.62	26.48	15.92	50.38	23.72	3.38
Waste Kg	2.64	8.41	7.24	12.17	3.06	3.27	23.49	9.67	1.79
% Good	92.96	70.08	81.04	81.78	89.65	82.95	68.20	71.05	65.36
Weight per bush Good. Kg	11.64	6.57	10.32	18.21	8.83	7.96 (2 plants)	16.79	7.91	0.38
Comments						Middle plant removed 20/08/14			9 plants

Cooked Tasting Comments – summarised by M Moulton (Forum Member)

Forum members tasted each entry after it had been cooked, both sweetened and unsweetened.

No	Entry name	No Sugar	With added sugar
1	blackberry 'Obsidian'	Poor flavour, acid /sharp (4)	Moderate, pleasant flavour, too sweet (2)
2	blackberry 'Karaka Black'	No Fruit Available	No Fruit Available
3	blackberry 'Helen'	Slight blackberry flavour (2) weak	Too sweet, but blackberry flavour(3)
4	blackberry 'Natchez'	Moderate flavour, lacking, unpleasant after taste	Far too sweet,(2) not blackberry, nice
5	tayberry tayberry 'Tayberry' AGM (H5) 1993	Pleasant(2), good, strong flavour(2)	Very good(1)
6	tayberry 'Buckingham'	No Fruit Available	No Fruit Available
7	tummelberry	Sharp, good colour, bland,(2) watery	Jam, good flavour(2), pleasant
8	loganberry	Sharp,(3) not pleasant, good	Too sweet(2), good flavour (2)
9	blackberry 'Black Butte'	Quite pleasant(2), unpleasant after taste(3)	Very good, very dark colour
10	blackberry 'Asterina'	Unpleasant, very sharp, good flavour	Too much sugar, No taste, good flavour
11	blackberry 'Loch Tay'	Rasp flavour, fair, sharp	Good, too much sugar, pleasant (2)
12	blackberry 'Čačanska Bestrna'	Very sharp, unpleasant, poor(4)	Too much sugar, not blackberry, nothing.
13	blackberry 'Ouachita'	Unpleasant, sour(3), no real taste.	Weak flavour, too sweet(2), pleasant (1)
14	blackberry 'Navaho'	Blackberry flavour, some flavour (2)	Good colour, pleasant, just passable
15	blackberry 'Loch Maree'	Not blackberry, very sharp, good,	Quite good, pleasant,
16	blackberry 'Loch Ness' AGM (H6) 1993	Good, not pleasant, sharp	Good colour- taste(2), too much sugar
17	blackberry 'Chester'	Poor flavour, sour, very sharp	Good flavour, pleasant
18	blackberry 'Triple Crown'	Sour,(2) unpleasant, poor	Good, too sweet
19	blackberry 'Reuben'	Horrid, very poor, awful, large pips	Good(3), too much sugar(3), dark colour

Trial Index and Senders Details

No	Type	Cultivar	Sender	Awards
1	blackberry	'Obsidian'	RW Walpole Ltd	
2	blackberry	'Karak Black'	RW Walpole Ltd	
3	blackberry	'Helen'	RW Walpole Ltd	
4	blackberry	'Natchez'	Hargreaves Plants	
5	tayberry tayberry	'Tayberry'	Hargreaves Plants	AGM (H5) 1993
6	tayberry	'Buckingham'	RW Walpole Ltd	
7	tummelberry		RW Walpole Ltd	
8	loganberry		Hargreaves Plants	
9	blackberry	'Black Butte'	RW Walpole Ltd	
10	blackberry	'Asterina'	RW Walpole Ltd	
11	blackberry	'Loch Tay'	Hargreaves Plants	
12	blackberry	'Čačanska Bestrna'	RW Walpole Ltd	
13	blackberry	'Ouachita'	Hargreaves Plants	
14	blackberry	'Navaho'	Hargreaves Plants	
15	blackberry	'Loch Maree'	RW Walpole Ltd	
16	blackberry	'Loch Ness'	Hargreaves Plants	AGM (H6) 1993
17	blackberry	'Chester'	Hargreaves Plants	
18	blackberry	'Triple Crown'	RW Walpole Ltd	
19	blackberry	'Reuben'	Hargreaves Plants	

Senders:

- Hargreaves Plants, Cowpers Gate, Long Sutton, Spalding, Lincs, PE12 9BS
www.hargreavesplants.com
- R W Walpole Ltd, Ivy Farm, Terrington St. Clement, King's Lynn, Norfolk PE34 4PX
www.rwwalpole.co.uk

Fruit Trials Forum members:

Dr J Morgan (Chair); S Brice; H Baker; J O Edgeley; G M Edwards; M Moulton; Dr D Pennell; Dr D J Quinlan; RR Stapleton; A Tokely.

J Arbury (RHS Fruit and Trials Specialist) provided additional advice to the Forum members and curatorial staff looking after the trial.

Source: Horticultural Trials and Relations,
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