

Black and red currant cultivars for organic production.

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Organic black and red currant in Denmark



› *Use:*

Mainly produced for industry use and machine harvested.

› *Area:*

Black currants: 23 growers with 30 ha, biggest grower 5,8 ha.

Red currants: 11 growers with 18,5 ha, biggest grower 9,3 ha.

› *Yield:*

› Blackcurrants: 2-4 t/ha. Red currants: 4-7 ton ha.

› *Challenges:*

black currant gall mite (*Cecidophyopsis ribis* Westwood) and reversion virus (*Atavismus*).

Weed control.

Some pest and diseases.

Very few products for control allowed: Dipel-Bt.

Looking for cultivars better suited for organic unsprayed production.



Planted April 2003 at Department of Food Science.

One year old plants.

Planting distances 3.5 x 0.5 m
Plots of 6 bushes, 3 replications

Planted in Mypex

Irrigated the first two years

Manuring, poultry manure pellets

Unsprayed





American gooseberry mildew
(*Sphaerotheca mors-uvae*
Schweinitz).



white pine blister rust
(*Cronartium ribicola*
J.C. Fischer).

Black currant gall mite
(*Cecidophyopsis ribis*
Westwood)



Leaf spot (*Gloeosporidiella*
ribis Libert).



Black currants

- › Origin, harvest date, yield, berry size, foreign elements in the harvested product in 13 cultivars of black currants in average of 2009-2011.

Black currants	Origin	Harvest	Yield	Berry size
Cultivar	Country	Date	Tonne/ha	G/100 berries
Baldwind	Scotland	7 Aug	3.4 ef	60 e
Ben Alder	Scotland	3 Aug	5.7 bcd	62 e
Ben Avon	Scotland	26 Jul	6.1 bc	81 ab
Ben Dorain	Scotland	27 Jul	4.3 cdef	63 e
Ben Gairn	Scotland	21 Jul	4.1 def	74 cd
Ben Hope	Scotland	1 Aug	7.8 a	74 cd
Ben Lomond	Scotland	2 Aug	8.8 a	84 a
Ben Tirran	Scotland	3 Aug	7.4 ab	76 bc
Narve Viking	Norway	3 Aug	8.9 a	70 d
Tiben	Poland	29 Jul	5.2 cde	77 bc
Titania	Sweden	23 Jul	2.8 fg	76 bc
8944-4	Scotland	23 Jul	1.6 g	50 f
8944-13	Scotland	23 Jul	4.8 cde	63 e



Black currants

- › Scores for growth, leaf healthiness, infestations of aphids, infections of mildew, rust and leaf spot in 13 cultivars of black currants in average of 2009-2011.

Black currants	Growth, June	Leaf Healthiness, June	Aphids, June	Mildew, June	Rust, August	Leaf Spot, August	Leaf Healthiness, August
Cultivar	Score 1-9 1= no growth	Score 1-9 1= no leaves	Score 1-9 1= no infestation	Score 1-9 1= no infection	Score 1-9 1= no infection	Score 1-9 1= no infection	Score 1-9 1= no leaves
Baldwind	4.8 d	5.5 e	1.7 f	2.8 b	2.8 f	8.2 a	1.8 d
Ben Alder	4.7 d	6.2 d	2.7 bc	1.2 cd	3.9 de	6.4 cd	3.2 c
Ben Avon	6.2 c	6.6 c	3.3 a	1.1 cd	4.4 c	6.0 def	3.5 c
Ben Dorain	4.9 d	5.9 de	2.3 de	1.2 cd	5.1 ab	5.6 f	3.5 c
Ben Gairn	5.1 d	5.7 de	3.0 ab	1.0 d	3.0 f	4.2 g	5.1 a
Ben Hope	6.1 c	6.9 bc	1.7 f	1.0 d	4.7 bc	6.3 cde	3.3 c
Ben Lomond	6.0 c	7.1 abc	2.1 ef	3.1 a	3.5 e	7.3 b	2.1 d
Ben Tirran	5.8 c	6.7 c	2.2 de	1.2 cd	4.4 cd	6.4 cd	3.1 c
Narve Viking	6.4 abc	7.3 ab	2.0 ef	1.0 d	5.5 a	1.7 h	5.2 a
Tiben	6.8 ab	7.5 a	2.9 ab	1.2 cd	2.6 f	6.9 bc	3.4 c
Titania	6.8 a	7.1 abc	2.8 bc	1.0 d	1.0 h	5.7 ef	4.2 b
8944-4	4.8 d	4.8 f	2.5 cd	1.0 d	2.0 g	7.3 b	3.0 c
8944-13	5.9 c	6.9 bc	2.5 cd	1.3 c	2.7 f	6.6 cd	4.1 b

Numbers followed by the same letter for the same species in columns do not differ significantly for $P \leq 0.05$.



Black currants

- › soluble solids, citric acid and colour content of the juice in 13 cultivars of black currants in average of 2009-2011.

Black currants	Soluble solids	Citric Acid	Colour, Malvidin Chloride
Cultivar	%	Mg/g	Mg/100g
Baldwind	18.0 a	34.6 h	441 g
Ben Alder	16.4 g	36.1 f	691 b
Ben Avon	15.4 i	35.3 g	485 f
Ben Dorain	17.4 b	38.4 c	651 c
Ben Gairn	17.2 c	29.2 k	772 a
Ben Hope	16.8 e	36.3 e	637 c
Ben Lomond	16.6 f	37.6 d	542 e
Ben Tirran	15.8 h	40.6 a	502 f
Narve Viking	15.5 i	29.6 j	638 c
Tiben	17.0 d	40.4 a	640 c
Titania	18.0 a	39.9 b	526 e
8944-4	15.0 j	25.1 l	498 f
8944-13	14.1 k	31.5 i	598 d

Numbers followed by the same letter for the same species in columns do not differ significantly for $P \leq 0.05$.



Red Currants

- › Origin, harvest date, yield, berry size, foreign elements in the harvested product in 10 cultivars of red currants in average of 2009-2011.

Red Currants	Origin	Harvest	Yield	Berry size	Foreign elements in the harvested product
Cultivar	Country	Date	Tonne/ha	G/100 berries	Score 1-9 1=nothing
Augustus	Holland	14 Aug	14.4 ab	40 e	5.0 ab
Red Lake	North America	4 Aug	0.8 d	33 f	4.0 d
Red Poll	England	7 Aug	17.3 a	53 cd	5.0 ab
Red Start	England	31 Jul	0.6 d	37 ef	3.8 d
Rolan	Holland	31 Jul	13.0 abc	57 bc	5.0 ab
Rondom	Holland	4 Aug	10.5 bc	50 d	5.1 a
Roodneus	Holland	7 Aug	15.4 ab	55 bcd	5.1 a
Rosetta	Holland	7 Aug	8.3 c	60 ab	4.6 c
Rovada	Holland	7 Aug	14.5 ab	63 a	4.7 bc
Tatran	Slovakia	9 Aug	12.5 abc	51 cd	5.1 a

Numbers followed by the same letter for the same species in columns do not differ significantly for $P \leq 0.05$.

Red currants

- › Scores for growth, leaf healthiness, infestations of aphids and leaf spot in 10 cultivars of red currants in average of 2009-2011.

Red Currants	Growth, June	Leaf Healthiness, June	Aphids, June	Leaf Spot, June	Leaf Spot, August	Leaf Healthiness, August
Cultivar	Score 1-9 1= no growth	Score 1-9 1= no leaves	Score 1-9 1= no infestation	Score 1-9 1= no infection	Score 1-9 1= no infection	Score 1-9 1= no leaves
Augustus	5.4 bc	7.1 cd	1.2 abc	2.3 b	8.6 ab	1.4 de
Red Lake	3.9 e	4.4 g	1.3 abc	3.1 a	.	1.0 e
Red Poll	6.4 a	7.6 ab	1.6 a	1.5 de	6.7 d	3.2 a
Red Start	4.1 e	3.9 h	1.3 abc	2.9 a	.	1.0 e
Rolan	4.7 d	6.7 ef	1.2 bc	1.6 de	8.8 ab	1.7 d
Rondom	5.6 bc	7.3 bc	1.5 ab	1.8 cd	7.7 c	2.6 bc
Roodneus	6.6 a	8.0 a	1.4 abc	1.6 de	7.1 d	3.0 ab
Rosetta	4.8 d	6.3 f	1.1 c	1.3 e	8.3 bc	2.3 c
Rovada	5.9 b	7.8 a	1.1 c	2.0 c	9.0 a	1.1 e
Tatran	5.2 cd	6.7 de	1.4 abc	1.6 de	8.3 bc	1.8 d

Numbers followed by the same letter for the same species in columns do not differ significantly for $P \leq 0.05$.

Red currants

- › soluble solids, citric acid and colour content of the juice in 10 cultivars of red currants in average of 2009-2011.

Red Currants	Soluble solids	Citric Acid	Colour, Malvidin Chloride
Cultivar	%	Mg/g	Mg/100g
Augustus	9.0 j	27.9 b	68 e
Red Lake	10.4 h	25.2 e	67 e
Red Poll	13.2 b	30.2 a	123 a
Red Start	10.3 i	27.7 d	63 f
Rolan	12.6 d	21.4 g	71 c
Random	13.6 a	23.8 f	71 c
Roodneus	12.5 e	27.6 c	122 b
Rosetta	12.1 f	21.0 h	59 g
Rovada	11.4 g	28.2 b	69 d
Tatran	12.7 c	27.5 c	67 e

Numbers followed by the same letter for the same species in columns do not differ significantly for $P \leq 0.05$.

Conclusions

- › The black currant cultivar 'Narve Viking' was the best cultivar for organic production. This cultivar had high yield, good juice quality and resistance to pests and diseases. But also the more disease susceptible cultivars 'Ben Lomond', 'Ben Hope' and 'Ben Tirran' had high yields and good juice quality when grown unsprayed.
- › The red currant cultivar 'Red poll' had the highest yield, the best juice quality and was most resistant to diseases when grown unsprayed. 'Roodneus' also had a high yield and acceptable juice quality and disease resistance.



Narve Viking



BenLomond



Ben Hope



Ben Tirran



Red Poll



Roodneus

Thank you very much for
your attention