

MASTER

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Year 1



Horticultural Development Council

Working for Growers

Research Report

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Brussels Sprouts Taste testing 1992/3



**BRUSSELS SPROUTS
TASTE TESTING**

1992/93

**Vegetable Trials Section
on behalf of HDC**

BRUSSELS SPROUTS TASTE ASSESSMENTS 1992/93

Project No.: FV 98a

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Introduction

15 Brussels sprout taste panels were carried out over the 1992/93 winter period. 39 varieties of sprouts were tested, of which 32 had been previously tested in 1990 &/or 1991. 20 of these varieties were in the 1992 NIAB performance trial, each variety being tested at least 3 times, from different sites. The remaining 19 varieties were demonstration varieties. Many of these demonstration varieties were also tested more than once, from different sites.

In previous years, tests have been carried out on material from mainly one site. It was considered important to test produce from a range of soil types to determine if the bitterness of varieties relative to one another varies according to where they are grown.

Objective

To assess for bitterness produce from varieties listed on the NIAB Descriptive List of Brussels Sprout varieties, and newer varieties currently in trial, from a selected range of soil types. To make this information available to growers and consumers and encourage increased consumption of sprouts.

Method

Sprouts were hand picked and transported to NIAB HQ. They were refrigerated overnight before being prepared for the taste test the following day.

The sprouts were trimmed in the usual domestic manner, put in separate but identical saucepans with just enough water to cover and boiled until cooked but still firm.

Eight varieties were tested on most occasions. The panel members sampled varieties in different orders to eliminate any bias due to "taste bud fatigue". Tap water and cream crackers were provided to cleanse the palate between varieties.

The panel members were taken from a pool of 16, which included both men and women, ranging in age from 18-58. There were 6 core panel members and although at least 3 of them were present on all the panels, it was not always possible to have the same 6 panel members for each tasting.

The sprouts were scored on a 1-5 scale for sweetness, bitterness, flavour and pleasantness. Texture was also scored.

Results

1. Site comparisons

Generally the material from Kirton and Biggleswade was very similiar, but the material from Tarleton was more bland.

The mean scores for bitterness for each taste test was generally lower at Tarleton(2.1) than at the other 2 sites, Kirton(2.7) and Biggleswade(2.6).

There was a lot of disease present on the material from Tarleton, which resulted in more leaves having to be removed from the sprouts in preparation for cooking, in order to make them presentable for eating.

The low bitterness scores at Tarleton could be due to this removal of more outer leaves from the sprouts, as it is considered that bitterness is found in the outer leaves.

2. Variety Comparisons

a) Consistency of Results

There was generally good consistency of results within the variety between the different taste panels in 1992/93. Although as mentioned above, Tarleton did produce lower scores.

The 1992/93 results compare very well with the results from previous years.

b) Bitterness

Mean scores ranged from 1.7 - 4.8. The early varieties (October, November) were generally less bitter than the later varieties. It was not until early December that the first signs of significant bitterness were tasted in Rampart.

In 1992/93 there were six varieties which had one or more taste panels with a mean score above 4.0 for bitterness: Rampart, Ajax, Lauris, Odette, Tardis and Stephen. These varieties all had overall mean scores above 3.0. Roger and Edmund also had overall mean scores above 3.0. These eight varieties had all been previously tested in 1990 &/or 1991 and with the exception of Odette all had high scores for bitterness.

Varieties with a low bitterness score (below 2.0) were Adri, Claudette, Collette, Corinth, Pantera and Stan. These varieties (with the exception of Corinth) had all been previously tested in 1990 &/or 1991, and had all received similiar low scores for bitterness.

c) Strength of flavour

Mean scores ranged from 2.0 - 4.5.

The varieties previously mentioned, with a high score for bitterness, all had a high score for strong flavour (3.5 or above), except Lauris. Dolmic also had a high score for strong flavour. From the overall mean of 1990-1992 these varieties all had scores of 3.5 or above, except Odette and Dolmic. Lauris had a score of 3.6 for the meaned 1990-1992 data.

d) Sweetness

Mean scores ranged from 1.2 - 3.1, a smaller range than bitterness and flavour, possibly because sweetness is more difficult to detect, often being masked by strong bitterness and flavour.

Only 2 varieties in 1992/93 had overall mean scores for sweetness above 3.0: Adri and Cavalier. Both these varieties had been tested previously, but neither variety had received an overall score for sweetness above 3.

Pantera, Cascade, Content, Lunet and Topaz had all had taste panel scores of 3.0 or above in previous years. The overall mean scores for 1990-92 for these varieties were all above 2.5.

All the varieties previously mentioned as having high bitterness scores, with the exception of Roger, conversley had low sweetness scores (below 2.0). Icarus, PSR 989, and Adonis also had taste panel sweetness scores below 2.0.

In the overall mean 1990-1992, Ajax, Lauris, Tardis, Edmund and Stephen all had sweetness scores for 1.5 or below.

e) Organic Produce

3 of the varieties tested from Tarleton, Stephen, Icarus and Cavalier were organic material. Although the organic material had to be similiary prepared with loss of a lot of outer leaves due to disease, the bitterness scores were a lot higher. Stephen had a score of 4.7 compared with scores of 1.7 and 2.7, from non-organic produce on other taste panels.

COMPARISON OF 1992 DATA WITH COMBINED 1990-1992 DATA

Figures shown are mean figures

* Varieties tested in 1992 only

Key

Bitterness: 1 = not bitter, 3 = sl. bitter, 5 = v. bitter

Sweetness: 1 = not sweet, 3 = sl. sweet, 5 = v. sweet

Flavour: 1 = weak, 3 = medium, 5 = strong

Pleasantness: 1 = not pleasant 5 = v. pleasant

VARIETY	BITTERNESS		FLAVOUR		SWEETNESS		PLEASANTNESS	
	1992	90-92	1992	90-92	1992	90-92	1992	90-92
9202*	2.3	2.3	3.1	3.1	2.5	2.5	2.7	2.7
ADELINE	2.1	2.0	2.6	2.5	2.6	2.4	2.8	2.7
ADONIS	2.5	2.5	3.0	2.8	1.6	1.8	2.6	2.8
ADRI (7159)	1.9	1.8	2.9	2.6	3.1	2.8	3.3	3.3
AJAX	3.8	3.7	3.9	3.9	1.3	1.4	1.9	1.8
ARISTON(2016)*	2.1	2.1	2.4	2.4	2.0	2.0	2.9	2.9
BILLION*	2.1	2.1	2.7	2.7	2.4	2.4	3.2	3.2
CASCADE	2.0	1.9	2.7	2.6	2.5	2.7	3.0	3.1
CAVALIER	2.0	1.9	3.2	2.8	3.1	2.9	3.1	3.2
CLAUDETTE (PSR389)	1.8	1.6	2.4	2.4	2.1	2.2	3.0	3.0
COLLETTE (PSR689)	1.9	1.8	2.5	2.6	2.1	2.3	2.8	3.0
CONTENT	2.3	2.0	3.1	2.7	2.4	2.7	3.2	3.2
CORINTH*	1.9	1.9	2.6	2.6	2.1	2.1	3.0	3.0
DIABLO (BJ 1468)*	2.6	2.6	3.4	3.4	2.3	2.3	2.7	2.7
DOLMIC	2.2	2.2	3.5	3.2	2.6	2.4	3.7	3.6
EDMUND	3.2	3.4	3.6	3.6	1.6	1.5	2.2	2.0
ICARUS	2.8	2.6	3.2	3.2	1.9	1.8	2.6	2.6
LAURIS	3.8	4.1	3.2	3.6	1.3	1.3	2.0	1.5
LUNET	2.1	1.7	2.9	2.5	2.7	2.9	3.3	3.4
ODETTE	3.5	3.2	3.6	3.3	1.6	1.8	2.1	2.3
OLIVER	2.0	2.0	2.9	2.8	2.8	2.6	3.2	3.1
OTTOLINE	2.6	2.5	2.8	2.7	2.4	2.3	2.8	2.9
PANTERA	1.7	1.5	2.8	2.7	2.2	2.5	3.2	3.5
PATENT	2.1	2.1	3.0	3.0	2.6	2.3	3.1	2.7
PHILEMON	2.3	2.1	2.9	2.9	2.1	2.3	2.7	2.7
PRELENT *	2.2	2.2	2.7	2.7	2.5	2.5	3.4	3.4
PSR 889	2.7	2.8	3.1	3.2	2.0	1.9	2.9	2.7
PSR 989	2.4	2.4	3.0	3.0	1.9	2.1	2.8	2.9
RAMPART	3.1	3.6	3.5	3.7	1.7	1.6	2.2	2.0
RASALON	2.0	1.7	2.8	2.4	2.0	2.4	3.0	3.4
RICHARD	2.5	2.7	2.7	3.0	2.1	1.9	2.7	2.6
ROGER	3.1	3.3	3.5	3.5	2.1	1.8	2.3	2.0
STAN	1.7	1.5	2.5	2.1	2.2	2.4	3.5	3.3
STEPHEN	3.3	3.4	3.5	3.5	1.6	1.5	2.4	2.2
TALENT	2.5	2.3	3.2	2.9	2.5	2.1	3.2	3.0
TARDIS	4.8	4.8	4.5	4.7	1.2	1.1	1.0	1.2
TAVERNOS*	2.3	2.3	2.6	2.6	2.0	2.0	2.9	2.9
TOPAZ	2.2	2.4	3.0	3.0	2.2	2.7	3.5	3.4
TOPLINE	2.2	2.1	2.6	2.8	2.5	2.5	3.5	3.0

Conclusions

- 1) It is possible to detect differences between bitterness in varieties of Brussels Sprouts.
- 2) Good consistency was found between the results in 1992 and those from previous years.
- 3) There was good consistency between 2 sites, Kirton and Biggleswade. The third site, Tarleton had lower scores than those at Kirton and Biggleswade, possibly as a result of more peeling due to diseased outer leaves.
- 4) A high score for bitterness is usually accompanied by a high score for flavour, and a low score for sweetness.
- 5) A low score for bitterness is not necessarily accompanied by a high score for sweetness.
- 6) The 6 most bitter varieties from the 1990-1992 combined data are: Rampart, Ajax, Lauris, Tardis, Edmund, and Stephen.
- 7) The 6 sweetest varieties from the 1990-1992 combined data are: Adri, Cascade, Cavalier, Content, Lunet, and Topaz.

Future Plans

To continue to check listed varieties and new varieties in trial.