

AGRICULTURAL DEVELOPMENT AND ADVISORY SERVICE

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LETTUCE - LITTLE GEM

ASSESSMENT OF VARIETIES

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AUTHENTICATION

I declare that this work was performed under my supervision according to the procedures described herein and that this report represents a true and accurate record of the results obtained.

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COMMERCIAL IN CONFIDENCE

SUMMARY

Following a late season variety trial sponsored by the HDC and seed companies in 1990, ten varieties of Little Gem lettuce were assessed in Spring 1992 to evaluate performance in the early part of the season.

Most of the Little Gem varieties/selections fitted the Little Gem specification satisfactorily ie good spherical shape with solid compact heart of an attractive mid green colour weighing a minimum of 150 grams.

Ferro (ELS), Little Gem (NIC) and Little Gem (YAT) were found to be the most uniform and best varieties in the trial, consistent with results in 1990.

Bambi (RZA) and 41-18 (RZA) were a distinctive darker green in colour compared to all other varieties but the latter was unsuitable as a Little Gem type as it was too loose and uneven.

Toledo (RSL) and Bubbles (TOZ) were bigger framed, taller and looser than other varieties and more akin to 'mini cos' lettuce types.

INTRODUCTION

Little Gem have become more popular over recent years as a pre-packed supermarket product with 2 heads in a punnet weighing a minimum of 300 grams. However, it is still a relatively novel and high value crop in the UK and limited experimental work has been done on it.

Seed firms have responded to the increasing market demands by offering selections of Little Gem. Up to now these have varied somewhat in size, colour, flavour etc. A variety trial sponsored by the HDC and the seed companies was carried out in late summer 1990 highlighting some interesting differences between various selections. Whilst most true Little Gem varieties/selections fitted the required specification quite well, some, for example Jewel (TOZ) and Bubbles (TOZ) were bigger framed and taller than the standard varieties like Ferro (ELS). Little Gem (NIC) and Delight (ENZ) stood out as being the most uniform and consistent varieties in the 1990 late season trial.

A similar trial was repeated in the Spring of 1992 to examine performance early in the season.

OBJECTIVE

To assess the performance of 10 varieties of Little Gem Lettuce under commercial conditions in Lancashire.

MATERIALS AND METHODS

CULTURAL DETAILS

Site : Coe House Farms, Blackgate Lane, Tarleton, Nr Preston, Lancs
Soil Type : Moss Peat
Sowing Date : 5 March 1992 into 3.8 cm blocks
Planting Date : 7 April 1992
Fertiliser : 270 kg/ha 0:17:37
Spacing : 306 mm x 152 mm (12" x 6") = 22 plants/m²

This density is lower than normal due to the fact that we were fitting in with normal cultural practices on the growers holding.

Thiram and Zineb sprays were applied for leaf disease control during propagation. Pirimicarb was applied once for aphid control.

Propachlor (pre-planting) and Chlorpropham (post-planting) were applied for weed control.

The plants established well but only grew slowly during the first 4 weeks due to a cold, hard April. The last 2 weeks of May were extremely hot and the crop quickly matured by early June.

VARIETIES

1. Ferro (Elsoms)
2. Delight (Enza Zaden)
3. Little Gem (Nickersons)
4. Bambi (Rijk Zwaan)
5. 41-18 (Rijk Zwaan)
6. Toledo (Royal Sluis)
7. Bubbles (Tozer)
8. Jewel (Tozer)
9. Little Gem (Tozer)
10. Little Gem (Yates)

DESIGN

The trial was a randomised block in 3 replicates. The plot size was 3.6 m². There were 100 plants per plot.

RESULTS

The trial was harvested on 1 June 1992, when it was judged that the majority of heads had a marketable head weight between 150 and 170 grams. Twenty heads were cut from the centre of each plot and recording of marketable head weight, head diameter and head length were taken. Scores were made of colour and compactness.

Table 1 : % of Trimmed Heads in Various Weight Grades

Variety		<120	120-149g	150-169g	170-189g	190-220g	>220g
Ferro	(ELS)	5	41	38	15	1	-
Delight	(ENZ)	5	38	38	18	1	-
Little Gem	(NIZ)	-	11	40	28	20	-
Bambi	(RZA)	8	36	41	12	3	-
41-18	(RZA)	-	-	10	23	55	1
Toledo	(RSL)	-	-	10	11	30	49
Bubbles	(TOZ)	-	16	18	27	30	9
Jewel	(TOZ)	-	20	28	23	28	1
Little Gem	(TOZ)	3	35	47	15	-	-
Little Gem	(YAT)	5	42	45	7	1	-

Table 2 : Mean head weight, mean head diameter and mean head length after trimming

VARIETY		HEAD WEIGHT (g)	HEAD DIAMETER (cm)	HEAD LENGTH (cm)
Ferro	(ELS)	149	7.1	10.0
Delight	(ENZ)	150	7.3	10.1
Little Gem	(NIC)	172	7.5	10.3
Bambi	(RZA)	150	7.3	10.0
41-18	(RZA)	195	7.8	12.4
Toledo	(RSL)	219	8.1	17.0
Bubbles	(TOZ)	179	7.5	14.2
Jewel	(TOZ)	171	8.5	13.0
Little Gem	(TOZ)	153	8.0	10.6
Little Gem	(YAT)	149	7.1	10.5
Mean		169	-	-

Table 3 : Colour and Firmness Score

Variety		Colour (0-9)	Compactness (0-9)
Ferro	(ELS)	3	7
Delight	(ENZ)	4	6
Little Gem	(NIC)	3	7
Bambi	(RZA)	8	5
41-18	(RZA)	7	3
Toledo	(RSL)	4	3
Bubbles	(TOZ)	4	4
Jewel	(TOZ)	3	5
Little Gem	(TOZ)	3	5
Little Gem	(YAT)	3	6

Key Score: 0 Pale yellow green, loose
 9 Deep green, very compact

DISCUSSION

Most of the true little gem varieties produced the largest proportion of heads in the 150-169g category. 41-18, Toledo and Bubbles produced the heaviest hearts and did not meet the Little Gem specification. Jewel had the greatest spread of head weights.

Toledo produced the highest mean head weight and tallest heads which wasn't surprising as it is not a true Little Gem type - it is a cos type. 41-18 and Bubbles also produced heavier heads than other varieties and did not fit the standard Little Gem specification.

Apart from Bambi and 41-18 which were a distinct darker green colour, all other varieties were similar in colour. 41-18, Toledo and Bubbles were looser than other types.

VARIETY DESCRIPTIONS

The ideal little gem is characterised by a good spherical shape with a solid compact heart and a colour graduating from a pale yellow base to a darker green top.

1. Ferro (ELS)

Attractive mid green colour typical of little gem, with very uniform spherical solid heads. Some heads just beginning to breakdown at base.

2. Delight (ENZ)

Good colour with a firm heart. Compact growth habit. Hard to trim. Distinctive globular shaped heart.

3. Little Gem (NIC)

Attractive mid green colour. Compact and uniform hearts. Beginning to go over.

4. Bambi (RZA)

Distinctive darker green colour which becomes less noticeable on trimming. Fairly uniform solid hearts.

5. 41-18 (RZA)

Darker green than other little gem varieties with a distinct crinkled leaf. Hearts tended to be very loose. Easily falls apart on trimming.

6. Toledo (RSL)

Large framed mid green heads. Open, loose heart. Suitable as a bagged cos.

7. Bubbles (TOZ)

Mid green colour with distinctive crinkled/bubbly leaf. Uniform loose heads with a pear shape. Not a true little gem type.

CONCLUSIONS

Most varieties were at their optimum at date of harvest although some were just beginning to show signs of breakdown (splitting at base) even though they were just bordering the minimum weight requirement of 150 g.

Most of the true Little Gem varieties/selections fitted the Little Gem specification satisfactorily ie good spherical shape with solid compact heart and an attractive mid green colour.

Ferro (ELS), Little Gem (NIZ) and Little Gem (YAT) stood out as being most uniform and best performers in the trial.

Jewel (TOZ) produced the greatest spread of head weights, was slightly taller and bigger framed than other varieties.

Bambi and 41-18, both from Rijk Zwaan were distinctive in that they were darker green in colour than all other varieties. 41-18 was not suitable as a Little Gem type as it was too loose and uneven.

Toledo (RSL) and Bubbles (TOZ) were not suitable as little gem types as they were found to be more akin to 'mini cos' types.

RECOMMENDATIONS

1. Some newer coloured Little Gem varieties are becoming available and these should be trialled with standard varieties during the main season to complete the picture as regards varieties.
2. Popularity of other novel/continental lettuce types is growing and evaluation of selections and varieties should be carried out..

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