

AGRICULTURAL DEVELOPMENT AND ADVISORY SERVICE

Report to

Elsoms Seeds Ltd
Royal Sluis Ltd
Enza Zaden Ltd
Pinetree Vandenberg Ltd
A L Tozer Ltd
Samuel Yates Ltd
Nickersons Seeds Ltd

Report on

Little Gem Lettuce Variety Trial

October 1990

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INTRODUCTION

Little Gem have become more popular over recent years as a pre-packed supermarket product. However it is still a relatively novel 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 and flavour. Therefore a variety trial sponsored jointly by the seed firms and the HDC was carried out in Lancashire during late summer 1990 to look more closely at the main Little Gem selections and varieties.

Objective

To assess the performance of 9 varieties of Little Gem lettuce under commercial conditions in Lancashire.

Cultural details

Soil type : Moss peat
Sowing date : 27 July into 3.8 cm peat blocks
Planting date : 14 August
Fertiliser 270 kg/ha of 0:17.37
Spacing : 355 mm x 152 mm (14" x 6") - 19 plants/m²

Varieties

1. Little Gem (Royal Sluis)
2. Delight (Enza Zaden)
3. Little Gem (Tozer)
4. Jewel (Tozer)
5. Bubbles (Tozer)
6. Little Gem (Yates)
7. Ferro (Elsoms)
8. Bella (Pinetree Vandenberg)
9. Little Gem (Nickersons)

During Propagation Thiram and Zineb sprays were applied for control of leaf diseases with Pirimor being applied for Aphids. In the field Ronilan and Zineb were applied twice and Favour 600 FW once for leaf disease control. Pirimor was used twice for the control of Aphids. Propachlor and Chlorpropham were used for weed control.

Design

Randomised block in 3 replicates.



Results

The trial was harvested on 19 October 1990, when it was judged that the majority of heads had a marketable head weight between 150 and 170 grams. Little Gem are normally marketed 2 heads in a punnet with a minimum weight of 300g. Twenty five heads were cut from the centre of each plot and recordings of marketable head weight, head diameter and head length were taken. Scores were made of colour, compactness and of the incidence and severity of downy mildew on all varieties.

Table 1 : % of trimmed heads in various weight grades

Variety	120-149 g	150-169 g	170-189 g	190-220 g	220 g+
Little Gem (Royal Sluis)	13	40	41	5	-
Delight (Enza Zaden)	43	39	19	-	-
Little Gem (Tozer)	32	43	24	1	-
Jewel (Tozer)	21	32	24	17	3
Bubbles (Tozer)	5	12	21	41	20
Little Gem (Yates)	37	44	19	-	-
Ferro (Elsoms)	29	39	29	3	-
Bella (Pinetree Vandenberg)	15	49	29	7	-
Little Gem (Nickersons)	28	47	21	7	-

Most varieties produced the biggest proportion of heads in the 150-169 g category. Delight had the highest percentage in the 120-149 g category with Bubbles producing its biggest proportion in the 190-220 g range. Jewel had the greatest spread of head weights.

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

Variety	Head Weight (g)	Head Diameter (cm)	Head Length (cm)
Little Gem (Royal Sluis)	168	8.3	9.6
Delight (Enza Zaden)	156	7.8	9.6
Little Gem (Tozer)	157	7.9	9.7
Jewel (Tozer)	165	8.5	10.6
Bubbles (Tozer)	197	7.8	16.5
Little Gem (Yates)	152	7.9	9.7
Ferro (Elsoms)	160	8.2	9.6
Bella (Pinetree Vandenberg)	166	7.8	10.9
Little Gem (Nickersons)	158	8.2	9.6
Sed (18 df)	7.6	0.3	0.2

Bubbles produced the highest mean head weight and head length - significantly different from the other varieties. It did not fit the standard 2 heads/punnet specification. Yates selection produced the lowest mean head weight but



differences between it and other varieties were only mildly significant. Bella and Jewel produced heads significantly taller than the other varieties. There were no significant differences between the head diameters of varieties.

Table 3: Colour and Uniformity Scores

Variety	Colour (0-9)	Compactness (0-9)
Little Gem (Royal Sluis)	6	7
Delight (Enza Zaden)	7	7
Little Gem (Tozer)	7	8
Jewel (Tozer)	6	7
Bubbles (Tozer)	3	6
Little Gem (Yates)	6	8
Ferro (Elsoms)	6	8
Bella (Pinetree Vandenberg)	6	5
Little Gem (Nickersons)	7	8

Key: Score 0 : pale yellow/green, loose
9 : deep green, very compact

Table 4: Incidence and Severity of Downy Mildew

Variety	Incidence (0-3)	Severity (0-3)	Incidence x Severity (0-9)
Little Gem (Royal Sluis)	2.8	2.0	5.6
Delight (Enza Zaden)	3.0	2.0	6.0
Little Gem (Tozer)	3.0	2.0	6.0
Jewel (Tozer)	2.8	2.0	5.6
Bubbles (Tozer)	2.8	1.8	5.0
Little Gem (Yates)	3.0	2.0	6.0
Ferro (Elsoms)	3.0	2.0	6.0
Bella (Pinetree Vandenberg)	3.0	2.0	6.0
Little Gem (Nickersons)	3.0	2.0	6.0

Key: Score 0 = low, 0 = low
3 = high, 9 = high

Incidence and severity of downy mildew was less with Bubbles than with the other varieties. All other varieties were severely affected, suggesting they are very susceptible.



Discussion

The ideal Little Gem lettuce is one that when trimmed has a good spherical shape with a solid, compact heart, graduating in colour from a pale yellow base to a dark green at the top.

Comments on Varieties

1. Little Gem (Royal Sluis)

Mid green colour typical of Little Gem. Good spherical shape with solid hearts. Not as uniform as other varieties - some fan shaped heads.

2. Delight (Enza Zaden)

Attractive mid green colour. Compact growth habit with very uniform globe shaped hearts. Base tends to be pointed.

3. Little Gem (Tozer)

Good colour graduation. Attractive round shape. Leaves puckered and a little brittle. Looser than some others with a greater amount of trimming required.

4. Jewel (Tozer)

Attractive mid green colour. Slightly taller and bigger framed than other varieties with a looser heart. Spreading growth habit.

5. Bubbles (Tozer)

Pale green colour. Large framed variety with strongly blistered leaves. Open and loose heart. Wide uniform growing habit. Good tolerance to downy mildew. Did not fit the present specification for Little Gem but could have novelty value as a mini Cos type.

6. Little Gem (Yates)

Good colour graduation. Small upright growth habit. Good spherical shape with very uniform hearts. Leaves tend to twist more than other varieties.

7. Ferro (Elsoms)

Good overall colour typical of Little Gem. Upright growth habit. Some heads fan shaped but overall good spherical shape.

8. Bella (Pinetree Vandenberg)

Attractive colour. Big framed variety with loose hearts. Leaves with twisting habit. More spreading growth habit. A lot of trimming required with this variety.

9. Little Gem (Nickersons)

Very good colour graduation. Small upright uniform growth habit. Tends to have a more oval shape.



Recommendations for Future Action

Bearing in mind this was a late planted trial, evaluation of varieties through an early and mid-season trial would be worthwhile.

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