



Decafol on Potatoes

Aim of the trial

DECAFOL is a specialty developed with the aim of orienting the metabolism of the plant towards the synthesis and storage of sugars.

DECAFOL was positioned at 6 different potato fields to assess its performance.

General information

Conditions of the trial:

Trial location: France – Departments 59-62-80
Varieties: Bintje – Russet – Kaptah

Treatments

6 field trials on 6 different locations.

2 modalities (1 plot treated and 1 plot untreated):

- Untreated control
- BMS MN: 2 treatments with DECAFOL at 4 L/ha
 - o 1st treatment: start tuber formation
 - o 2nd treatment: 14 days later

Results

3 samples were taken of 3 x 2 m for each modality.

Field trial 1:

- 59 – Avelin
- Variety: Bintje Row distance: 75 cm

	Control			BMS MN		
Number of tubers/sample	181	169	167	200	206	217
Weight (kg)	18.46	16.08	18.28	18.61	19.18	20.25
Yield (t/ha)	49.24	42.86	48.75	49.63	51.15	54.12
Average yield (t/ha)	47.0			51.6 (+ 10.0%)		
Tuber size (% in weight)						
> 60	48.7			53.9		
35-60	46.5			40.6		
< 35	4.8			5.5		
Dry matter content (%)	19.7			21.4		
Colorimetric index	55			56		
Glassiness	4.16			0		



Field trial 2:

- 59 – Audignies
- Variety: Bintje

Planting date: mid-April – Row distance: 90 cm – 31000 plants/ha

	Control			BMS MN		
Number of tubers/sample	291	271	290	270	292	314
Weight (kg)	25.31	28.09	28.53	28.91	26.96	28.22
Yield (t/ha)	56.24	62.42	63.42	64.25	59.92	62.72
Average yield (t/ha)	60.7			62.3 (+ 2.6%)		
Tuber size (% in weight)						
> 60	43.2			52.2		
35-60	54.0			45.1		
< 35	2.8			2.7		
Dry matter content (%)	22.9			21.9		
Colorimetric index	56			63		
Glassiness	0			0		

Field trial 3 :

- 59 – Gommegnies
- Variety: Bintje

Row distance: 70 cm

	Control			BMS MN		
Number of tubers/sample	140	163	157	191	158	159
Weight (kg)	19.0	18.4	20.6	23.39	20.39	23.80
Yield (t/ha)	54.30	52.58	59.13	66.85	59.82	68.02
Average yield (t/ha)	55.3			64.9 (+ 17.3%)		
Tuber size (% in weight)						
> 60	57.0			61.6		
35-60	39.3			37.9		
< 35	3.7			0.5		
Dry matter content (%)	21.2			21.9		
Colorimetric index	60			63		
Glassiness	0			0		
% splitted tubers in the category >60	31	36	12.5	5.9	4.6	13.3
	26.5			7.9		

Field trial 4 :

- 80 – Hangest en Santerre
- Variety: Kaptah

Row distance: 75 cm

	Control			BMS MN		
Weight (kg)	15.95	17.55	18.30	19.55	19.95	19.65
Yield (t/ha)	42.53	46.79	48.80	46.80	53.20	52.40
Average yield (t/ha)	46.0			50.8 (+ 10.3%)		
Dry matter content (%)	31			31		
Colorimetric index	47			55		
Glassiness	0			0		



Field trial 5 :

- 62 – Fremicourt
- Variety: Russet

Planting date: 15/04 – Row distance: 90 cm – 40000 plants/ha

	Control			BMS MN		
Number of tubers/sample	82	45	90	75	78	89
Weight (kg)	12.55	12.20	13.70	14.06	13.40	13.20
Yield (t/ha)	63.72	67.77	76.11	78.05	74.50	73.33
Average yield (t/ha)	71.2			75.2 (+ 5.6%)		
Tuber size (% in weight)						
> 60	58.2			68.1		
35-60	37.9			29.4		
< 35	3.9			2.5		
Dry matter content (%)	21.4			23.2		
Colorimetric index	27			31		
Glassiness	3.17			0		

Field trial 6 :

- 80 – Hallivillers
- Variety: Russet

Row distance: 75 cm

	Control			BMS MN		
Number of tubers/sample	88	83	101	86	100	106
Weight (kg)	13.10	14.92	14.80	15.00	16.43	15.50
Yield (t/ha)	69.8	79.6	78.9	79.9	87.66	82.65
Average yield (t/ha)	76.1			83.3 (+ 9.5%)		
Tuber size (% in weight)						
> 60	53.2			59.8		
35-60	39.6			32.6		
< 35	7.2			7.6		
Dry matter content (%)	22.2			23.9		
Colorimetric index	46			45		
Glassiness	0			0		

Conclusion:

The DECAFOL programme with 2 applications of 4L/ha:

- 1st treatment: start tuber formation and
- 2nd treatment: 14 days later gives

- ⇒ An **average increase in yield of 5.3 tons/ha**. This increase in yield represents an increase of 7.0% in sizes >60, simultaneously with a respective decrease of 6.3% and 0.7% in the sizes 35-60 and <35.
- ⇒ An improvement in the colorimetric index and a decrease in the proportion of glassy potatoes.

These improvements, both quantitatively and qualitatively, are the result of an increase in the proportion of sugars that are polymerized in starch versus the proportion of soluble sugars.