



AccumulatR™

Trial Results

Restrained AccumulatR Potato seed treatment trial results



AccumulatR™

Seed-for-Seed and Seed-for-Salad trial results

AccumulatR is a potato seed treatment for increasing seed efficiency using a combination of ethylene and temperature in store, applied through our treatment protocol for 120+ days prior to planting, to increase the number of stems per seed piece.

This results in more tubers per plant. In addition, AccumulatR treated seed encourages quicker, more uniform crop emergence which promotes a more even tuber size distribution. The combination of increased tuber numbers and a more even tuber size distribution results in a **higher marketable yield within the commercial seed (28-55mm) and salad (28-45mm) size fractions**, which is key to increasing potato seed efficiency.

In the UK, AccumulatR has been **used for over 20 years**, with our customer base ranging from the Black Isle to Norfolk. This includes both growers producing seed for multiplication and ware salad potato growers, with proven results across more than 200 varieties.

Trials overview

The following trials were conducted to demonstrate the ability of the AccumulatR treatment protocol to enhance seed efficiency by increasing marketable yield within the commercial size specifications for the intended market.



Target markets:

Seed-for-Seed (28-55mm) and
Seed-for-Salad (28-45mm)



Crop duration:

80-90 growing days
(variety dependent)



Treatments:

Untreated seed, conventionally cold stored, versus AccumulatR treated seed stored under the treatment protocol for 120+ days prior to planting



Plant spacing:

25cm

Lady Rosetta



Crisping

Market



**Seed-for-Seed
28-55mm**



	Untreated	AccumulatR
Plants / ha:	65,617	65,617
Stems / ha:	215,077	251,531 (+17%)
Tubers / ha:	772,820	896,763(+16%)
Marketable tubers / ha:	441,091	608,778 (+38%)
Yield:	15.14 t/ha	18.18 t/ha
Marketable yield:	12.04 t/ha	15.50 t/ha (+3.46t)
Replantable ha:	6.78 ha	9.66 ha (+2.88 ha)

+29% Increase in marketable yield t/ha

Sagitta



Processing

French Fry



Fresh

Table

Market



Seed-for-Seed
28–55mm



	Untreated	AccumulatR
Plants / ha:	58,326	58,326
Stems / ha:	455,672	608,778(+34%)
Tubers / ha:	459,318	634,296 (+38%)
Marketable tubers / ha:	419,218	550,452 (+31%)
Yield:	18.51 t/ha	24.84 t/ha
Marketable yield:	18.11 t/ha	23.53 t/ha (+5.42t)
Replantable ha:	12.56 ha	15.25 ha (+2.69 ha)

+30% Increase in marketable yield t/ha

Agria



Processing
French Fry

Market



Seed-for-Seed
28–55mm



82 growing days



	Untreated	AccumulatR
Plants / ha:	45,714	45,714
Stems / ha:	167,619	209,514 (+25%)
Tubers / ha:	253,333	320,000 (+26%)
Marketable tubers / ha:	155,556	257,778 (+66%)
50% emergence date:	02/06/2025	30/05/2025 (–3 days)
Yield:	24.29 t/ha	25.64 t/ha
Marketable yield:	13.36 t/ha	19.03 t/ha (+5.67t)
Replantable ha:	5.41 ha	8.09 ha (+2.68 ha)

+42% Increase in marketable yield t/ha

Cara


Export

Fresh variety

Market


Seed-for-Seed
 28–55mm

90 growing days


	Untreated	AccumulatR
Plants / ha:	32,165	32,165
Stems / ha:	122,227	141,126 (+16%)
Tubers / ha:	334,517	495,342 (+48%)
Marketable tubers / ha:	302,352	443,878 (+47%)
Yield:	14.43 t/ha	20.73 t/ha
Marketable yield:	14.17 t/ha	20.46 t/ha (+6.29t)
Replantable ha:	6.4 ha	9.36 ha (+2.96) ha

+44% Increase in marketable yield t/ha

Edison



Processing

French Fry



Fresh

Table

Market



Seed-for-Seed

28-55mm



82 growing days



	Untreated	AccumulatR
Plants / ha:	45,714	45,714
Stems / ha:	106,667	129,524 (+32%)
Tubers / ha:	324,444	351,111 (+8%)
Marketable tubers / ha:	186,667	288,889 (+55%)
50% emergence date:	29/05/2025	28/05/2025 (-1 day)
Yield:	28.07 t/ha	30.85 t/ha
Marketable yield:	12.23 t/ha	22.10t/ha (+9.87t)
Replantable ha:	4.94 ha	8.37 ha (+3.43)

+81% Increase in marketable yield t/ha

Fontane



Processing
French Fry

Market



Seed-for-Seed
28–55mm



89 growing days



	Untreated	AccumulatR
Plants / ha:	45,714	45,714
Stems / ha:	125,714	175,238 (+39%)
Tubers / ha:	297,778	511,111 (+72%)
Marketable tubers / ha:	240,000	382,222 (+59%)
50% emergence date:	29/05/2025	28/05/2025 (-1 day)
Yield:	24.07 t/ha	38.50 t/ha
Marketable yield:	15.62 t/ha	21.31 t/ha (+5.69t)
Replantable ha:	7.01 ha	10.08 ha (+3.07)

+36% Increase in marketable yield t/ha

Innovator



Processing
French Fry

Market



Seed-for-Seed
28–55mm



82 growing days



	Untreated	AccumulatR
Plants / ha:	45,714	45,714
Stems / ha:	167,619	209,514 (+25%)
Tubers / ha:	271,111	342,222 (+26%)
Marketable tubers / ha:	208,889	244,444 (+17%)
50% emergence date:	25/05/2025	21/05/2025 (–4 days)
Yield:	32.16 t/ha	38.65 t/ha
Marketable yield:	18.94 t/ha	21.16 t/ha (+2.22t)
Replantable ha:	6.79 ha	7.87 ha (+1.08)

+12% Increase in marketable yield t/ha

King Russet



Processing
French Fry

Market



Seed-for-Seed
28-55mm



82 growing days



	Untreated	AccumulatR
Plants / ha:	45,714	45,714
Stems / ha:	133,333	163,810 (+23%)
Tubers / ha:	288,889	346,667 (+20%)
Marketable tubers / ha:	208,889	293,333 (+40%)
50% emergence date:	24/05/2025	26/05/2025 (+2 days)
Yield:	31.65 t/ha	34.65 t/ha
Marketable yield:	16.16 t/ha	24.93 t/ha (+8.77t)
Replantable ha:	6.53 ha	9.47 (+2.94)

+54% Increase in marketable yield t/ha

Markies



Processing
French Fry

Market



Seed-for-Seed
28–55mm



89 growing days



	Untreated	AccumulatR
Plants / ha:	45,714	45,714
Stems / ha:	118,095	152,381 (+43%)
Tubers / ha:	293,333	368,889 (+26%)
Marketable tubers / ha:	222,222	271,111 (+22%)
50% emergence date:	27/05/2025	26/05/2025 (-1 days)
Yield:	24.76 t/ha	31.58 t/ha
Marketable yield:	15.41 t/ha	19.04 t/ha (+3.63t)
Replantable ha:	7.79 ha	8.78 (+0.99)

+24% Increase in marketable yield t/ha

Charlotte



Salad

Market



Seed-for-Salad
28-45mm



88 growing days



	Untreated	AccumulatR
Plants / ha:	47,291	47,291
Stems / ha:	112,317	254,191 (+105%)
Tubers / ha:	568,679	787,402 (+38%)
Marketable tubers / ha:	428,696	717,410 (+67%)
Yield:	30.81 t/ha	36.34 t/ha
Marketable yield:	22.21 t/ha	34.32 t/ha (+12.11 t's)

+55% Increase in marketable yield t/ha

Maris Peer



Salad

Market



Seed-for-Salad
28-45mm



88 growing days



	Untreated	AccumulatR
Plants / ha:	47,291	47,291
Stems / ha:	112,317	162,564 (+45%)
Tubers / ha:	568,679	923,010 (+62%)
Marketable tubers / ha:	301,837	695,538 (+130%)
Yield:	30.91 t/ha	42.55 t/ha
Marketable yield:	10.88 t/ha	26.71 t/ha (+26.71 t's)

+146% Increase in marketable yield t/ha

AccumulatR™

Seed-for-Ware trial results

Trials ongoing

AccumulatR for Seed-for-Seed and Seed-for-Salad proven for 20 years with over 200 varieties tested. We are now looking at how AccumulatR can increase seed efficiency on ware crops by reducing the input seed requirement but still achieving the target stem density due to more stems per seed piece in AccumulatR treated seed.

Reduction based on seed cost only.



Target markets:

Ware production as per variety intended market



Planting date:

01/05/2025



Treatments:

- Untreated commercial spacing
- AccumulatR commercial spacing
- AccumulatR 30% reduction in planting rate



Burndown date:

02/09/2025 (124 growing days)



N-P-K:

- 300kg (N)
- 50kg (P)
- 300kg (K)



Row width:

75cm (trial carried out in the Netherlands)



Seed cost:

£500 per tonne (example)



Input seed size:

- **Innovator** (45–50mm input seed)
 - 571 tuber count per 50 kg
- **King Russet** (45–55mm input seed)
 - 537 – tuber count per 50 kg
- **Markies** (35–50mm input seed)
 - 729 – tuber count per 50 kg



AccumulatR cost:

£30 per tonne

Innovator



Processing
French Fry

Market



Seed-for-Ware



124 growing days



	Untreated Commercial spacing	AccumulatR Commercial spacing	AccumulatR 30% reduction in planting rate
Plants / ha:	31,111	31,111	22,222 (-30%)
Stems / ha:	106,667	128,889 (+21%)	88,889 (-16%)
Tubers / ha:	213,333	315,556 (+46)	253,333
Yield:	44.99	51.79	48.48
Marketable yield:	44.42	50.47	48.24 (+3.82 t)
10kg tuber count:	43	51	52
50% emergence date:	25/05/2025	23/05/2025 (-2 days)	21/05/2025 (-4 days)
T/ha planting rate:	2.59	2.59	1.94 (-30%)
Planting cost / ha:	£1,295.00	£1,372.70 (+£77.70)	£1,028.20 (-£266.80) compared to untreated
Plant spacing: 75cm row width	44cm	44cm	59cm

£266.80 savings on seed cost / ha

King Russet



Processing
French Fry

Market



Seed-for-Ware



124 growing days



	Untreated Commercial spacing	AccumulatR Commercial spacing	AccumulatR 30% reduction in planting rate
Plants / ha:	31,111	31,111	22,222 (-30%)
Stems / ha:	71,111	106,667 (+50%)	97,778 (+37%)
Tubers / ha:	186,667	315,556 (+69)	271,778 (+16%)
Yield:	41.96	50.88	47.22
Marketable yield:	41.41	49.11	46.87 (+5.46 t)
10kg tuber count:	42	51	45
50% emergence date:	26/05/2025	26/05/2025	26/05/2025
T/ha planting rate:	2.71	2.71	2.07 (-30%)
Planting cost / ha:	£1,355.00	£1,436.30 (+£81.30)	£1,097.10 (-£257.90) compared to untreated
Plant spacing: 75cm row width	45cm	45cm	59cm

£257.90 savings on seed cost / ha

Markies



Processing
French Fry

Market



Seed-for-Ware



124 growing days



	Untreated Commercial spacing	AccumulatR Commercial spacing	AccumulatR 30% reduction in planting rate
Plants / ha:	31,111	31,111	17,778 (-30%)
Stems / ha:	62,222	93,333 (+30%)	75,556 (+21%)
Tubers / ha:	208,889	271,111 (+30%)	235,556 (+12%)
Yield:	46.62	43.04	42.36
Marketable yield:	46.00	42.39	41.70 (-4.30 t)
10kg tuber count:	40	58	51
50% emergence date:	26/05/2025	25/05/2025 (-1 day)	24/05/2025 (-2 days)
T/ha planting rate:	2.18	2.18	1.53 (-30%)
Planting cost / ha:	£1,090.00	£1,155.40 (+£65.40)	£810.90 (-£279.10) compared to untreated
Plant spacing: 75cm row width	41cm	41cm	59cm

£279.10 savings on seed cost / ha



Restrain



Contact Restrain

For any details on varieties not listed.

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Special thanks to our
trials partner in the UK:



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