



Strategic Farm North

Results Day || 23.1.19



SPot North Results 2018

Herbicide Demonstrations 2018

Graham Tomalin VCS Potatoes Ltd

Herbicides



Herbicides



Herbicides

Herbicide update

- Linuron – approval now revoked
- Diquat – approval to end – sales end 4th May 2019 - end of use 4th February 2020

Will this be the end or the beginning?

Following changes to pesticide approval system to a new Regulation regime in 2009 – '*Regulation (EC) No. 1107/2009*' all new active substances or renewal of approvals of current active substances would need to comply with the new regulations

- **Hazard** not **risk** assessments
- 10 year renewals
- Candidates for substitution list 77 active substances inc Pendimethalin (EU approval 2024) , **Metribuzin (EU approval 2019)** and Flufenacet (EU approval 2019)

Herbicides

Spot Farm Herbicide Demonstrations

2016 - 2018 Spot East Residual/post em Herbicide Demonstration

2018 – Spot North Residual, contact and post –em Demonstration



Herbicides

Spot Farm North – 2018 Demonstrations

- 11 non replicated plots with different residual herbicide applications all including contact herbicide diquat @ 3l/ha
 - Further investigation of metobromuron in combinations
 - Assessment of potential new a.i. aclonifen in combinations
- 26 Varieties – each single row
- 3 Contact herbicide comparisons
- 4 non replicated Post emergence herbicide comparisons

Category	Varieties
Processing Varieties	R. Burbank, Royal, Performer, Markies, Challenger, Innovator, Forza , Sagitta
Prepack Varieties	Estima, Lanorma, Laura , Jelly , Nectar, Melody, Mozart, Panther, Sensation, Sunita, Georgina
Crisping Varieties	Brooke, VR808, Alcander, Triple 7, Taurus
Salad Varieties	Maris Peer
Ware Varieties	Maris Piper

Herbicides

Treatments Single A.I 2018

Trt	Herbicide Application	Cost £/ha
1	UNTREATED	£0
2	Defy (<i>prosulfocarb 800g/l</i>) 4l/ha	£26
3	Praxim (<i>metobromuron 500g/l</i>) 4l/ha	£72
4	Shotput (<i>metribuzin 70%</i>) 800g/ha	£18
5	VCS 1717 (<i>aclonifen</i>) 2.5l/ha	TBC

Other Products are available with identical active substances!

Herbicides

Treatments Combinations A.I.'s 2018

Trt	Herbicide Application	Cost £/ha
6	VCS 1818 (<i>new a.i. + clomazone</i>)	TBC
7	Praxim (<i>metabromuron 500g/l</i>) 2.5 l/ha + Stomp Aqua (<i>pendimethalin 455g/l</i>) 1.7 l/ha + Shotput (<i>metribuzin 70%</i>) 300 g/ha	£66
8	STD Praxim (<i>metabromuron 500g/l</i>) 2.5 l/ha + Defy (<i>pro sulfocarb800g/l</i>) 3l/ha + Shotput (<i>metribuzin 70%</i>) 300g/ha	£71
9	Artist (<i>metribuzin 17.5% + flufanacet 24%</i>) 1.8 kg/ha + Stomp Aqua (<i>pendimethalin 455g/l</i>) 1.7 l/ha	£59
10	(<i>aclonifen 600g/l</i>) 2.5 l/ha + Defy (<i>pro sulfocarb800g/l</i>) 3l/ha + Shotput (<i>metribuzin 70%</i>) 300g/ha	TBC
11	(<i>aclonifen 600g/l</i>) 2.5 l/ha + Stomp Aqua (<i>pendimethalin 455g/l</i>) 1.7 l/ha + Shotput (<i>metribuzin 70%</i>) 300 g/ha	TBC

Other Products are available with identical active substances!

Herbicides

Application Timings 2018

Planting Date	14 th May
Residual Application date	28 th May
Post Emergence Application 1	21 st June
Weed count Assessments 1	6 th July
Post Emergence Assessments 1	6 th July

Residual Observations 2018

- Low levels of weed development on all plots including untreated
- Rapid canopy development following emergence
- Only very low levels of chlorosis when comparing residuals

Herbicides

Metribuzin Phytotoxicity

Metribuzin – veinal yellowing/chlorosis – stunting – varietal variation *(label "do not use Shoput on sands")*



Herbicides

Clomazone Phytotoxicity

Clomazone – chlorosis- whitening – varietal variation (*label "do not use Gamit 36EC on sands or very light soils"*)



Herbicides

Clomazone Phytotoxicity

Clomazone – chlorosis- whitening – varietal variation (*label "do not use Gamit 36EC on sands or very light soils"*)



Plot 423 Sunita
Treatment 6 VCS 1818
(inc a.i. clomazone)

Higher sensitivity than
R.Burbank/Brooke

Herbicides

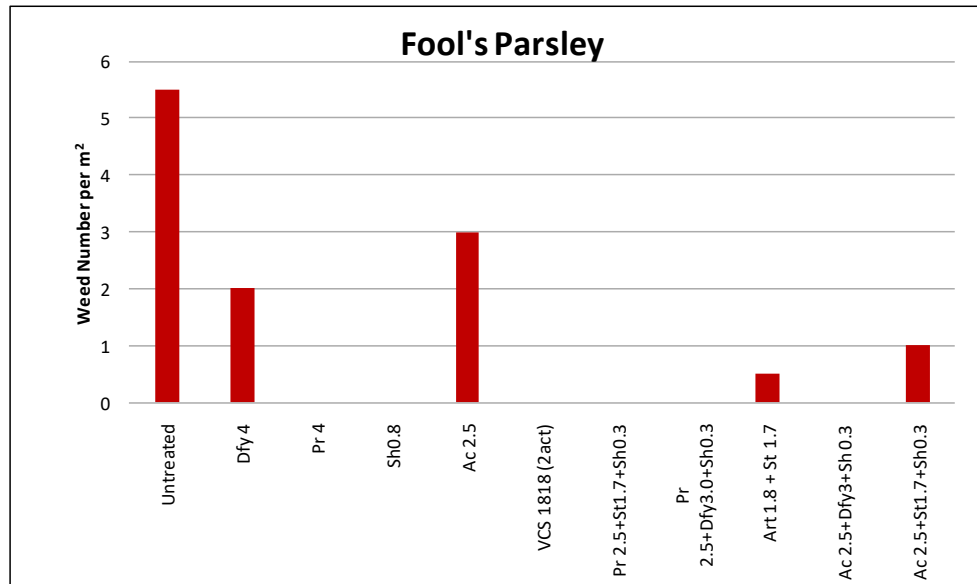
Pendimethalin Phytotoxicity

Pendimethalin – slight yellowing of leaf margins, leaf distortions (*label Stomp Aqua "on stony or gravelly soils there is a risk of crop damage especially if heavy rain falls soon after application"*)



Herbicides

Fool's Parsley – Observations and weed counts 2018 (North)

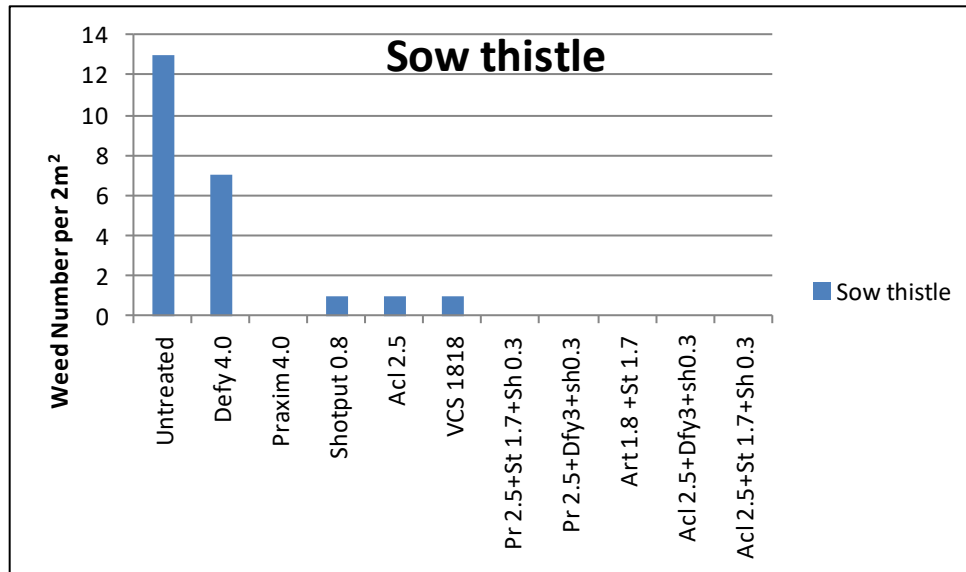


- Good activity metabromuron, metribuzin – **Praxim (higher rates), Shotput**
- Poor activity pendimethalin, aclonifen, prosulfocarb – **Stomp Aqua, Defy**

Note – low levels of weed present

Herbicides

Sow thistle – Observations and weed counts 2018 (North)

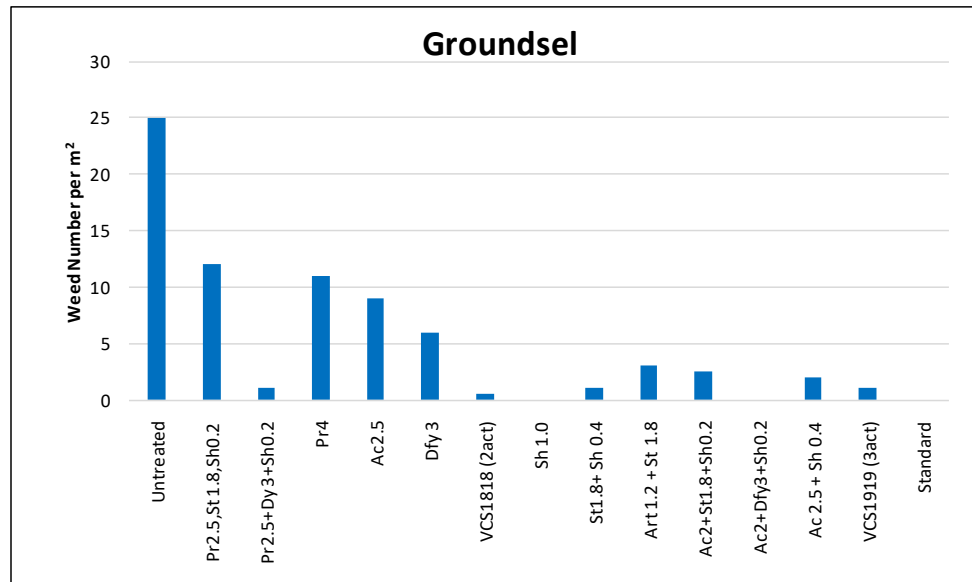


- Good activity metabromuron, metribuzin – **Praxim, Shotput**
- Poor activity prosulfocarb – **Defy**

Note – low levels of weed present

Herbicides

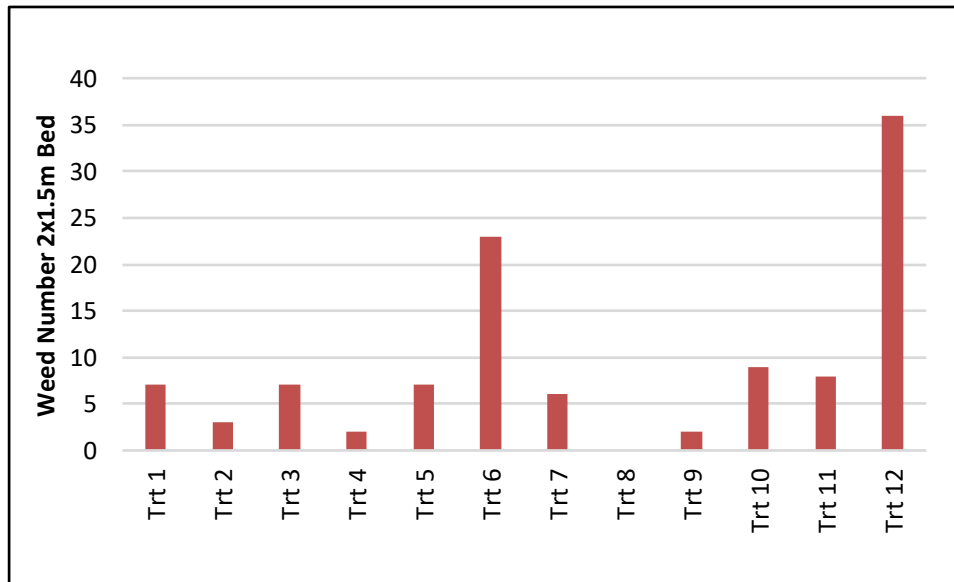
Groundsel – Observations and weed counts 2018 (East)



- Improved control with increasing rates of a.i. *Metribuzin* – **Shotput/Artist**
- Good activity – *linuron/clomazone* **Gamit 36EC**
- Low - moderate activity *metobromuron, pendimethalin, prosulfocarb* – **Praxim, Stomp Aqua & Defy**

Herbicides

Cleavers – Observations and weed counts 2016 (East)

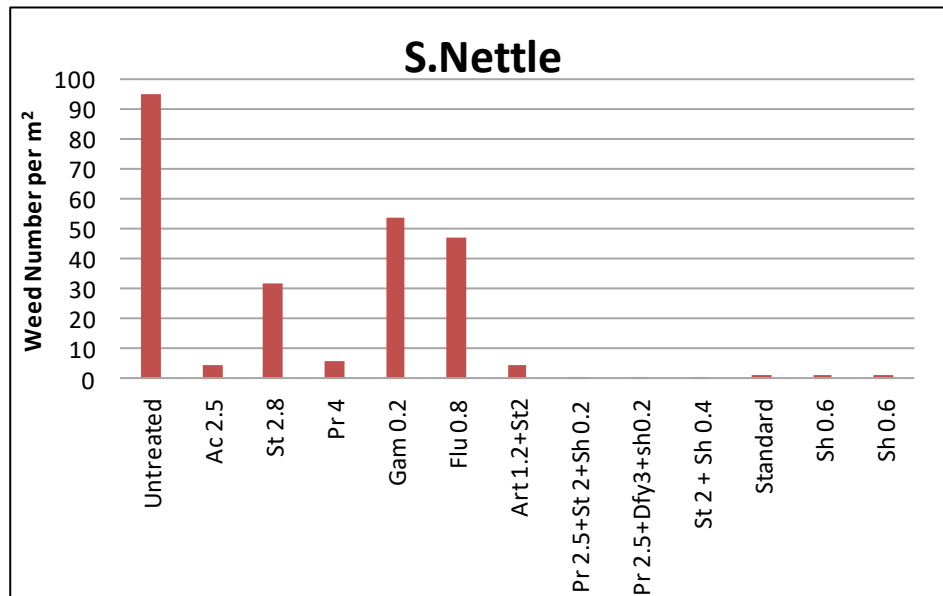


- Good activity prosulocarb - **Defy**
- Moderate activity flufenacet/ clomazone (both lower rate) – **Artist, Gamit 36 EC**
- Poor activity pendimethalin, linuron, metribuzin & metobromuron – **Stomp Aqua, Shotput & Praxim**

Note - uneven distribution of cleavers across site

Herbicides

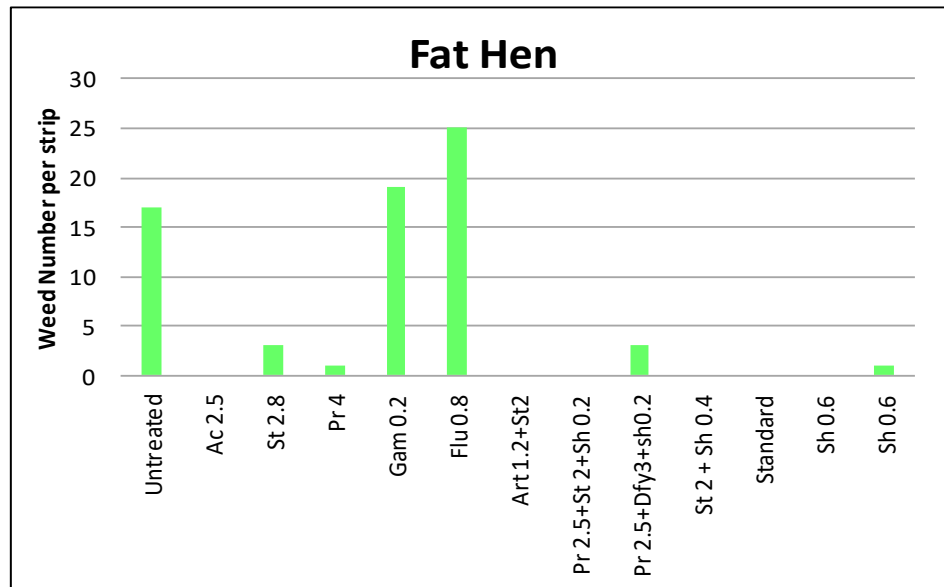
S.Nettle – Observations and weed counts 2017 (East)



- Good control within 3 way mixes
- Moderate activity *metobromuron/metribuzin/pendimethalin/aclonifen* – **Praxim, Shotput, Stomp Aqua**
- Poor activity *clomazone, flufenacet, prosulfocarb* - **Gamit 36EC, Defy**

Herbicides

Fat Hen – Observations and weed counts 2017 (East)



- Good activity VCS 1717 (aclonifen)
- Moderate activity pendimethalin, linuron, metribuzin & metobromuron

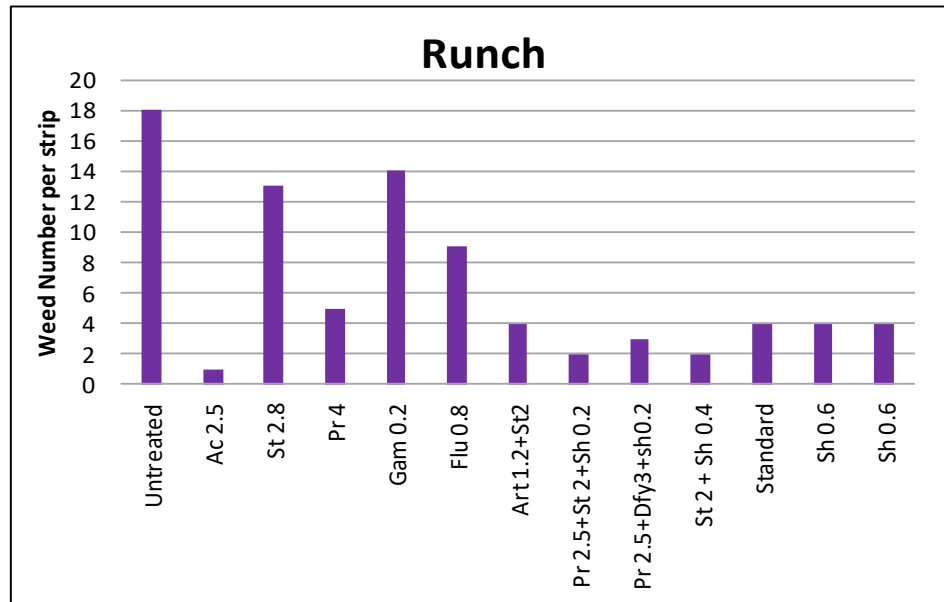
Stomp Aqua, Praxim & Shotput

- Poor activity clomazone & flufenacet – **Gamit 36Cs**

Note – weed counts full strip

Herbicides

Runch – Observations and weed counts 2017 (East)



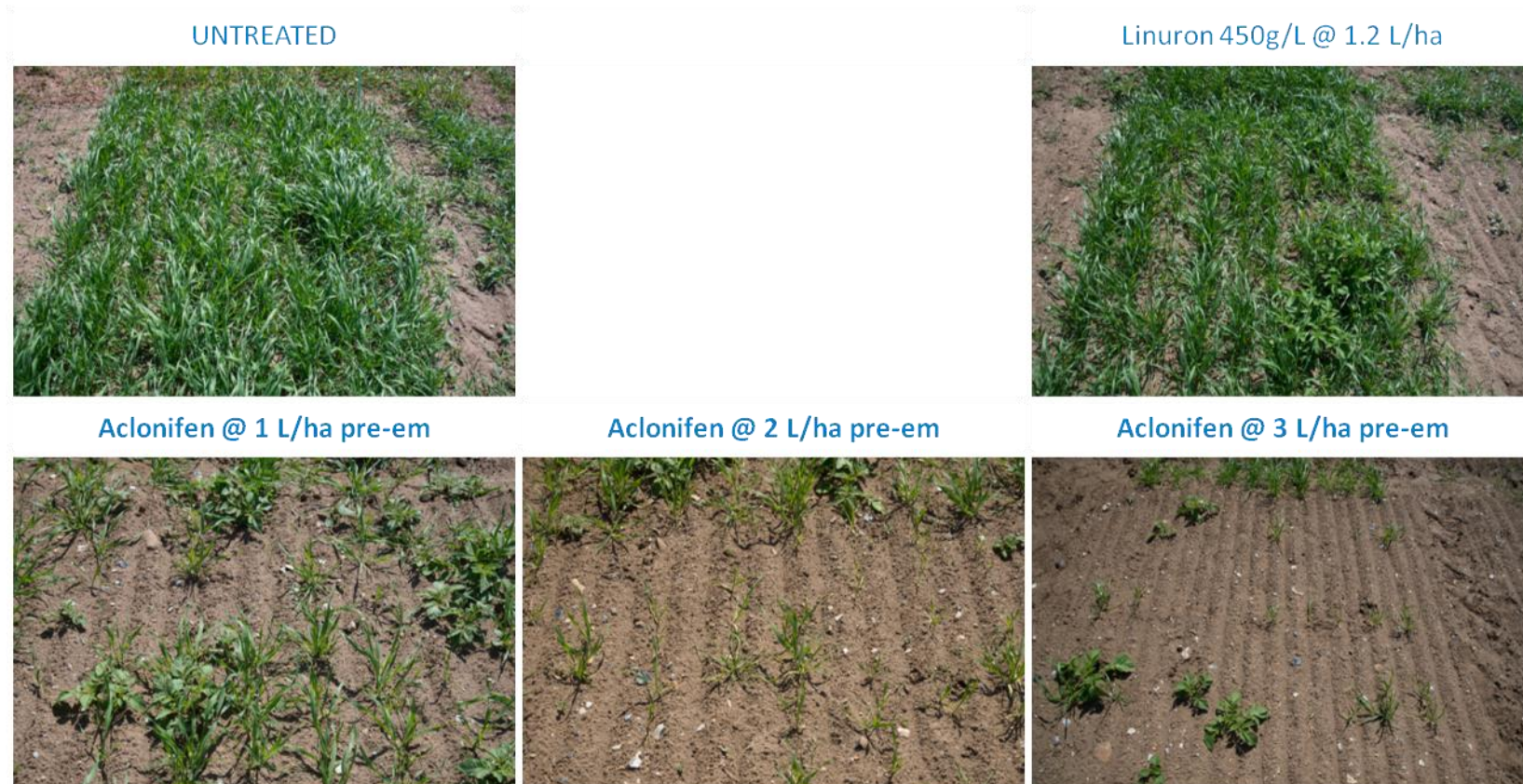
- Good activity metribuzin, VCS 1717 (aclonifen) - **Shotput**
- Moderate activity metobromuron - **Praxim**
- Poor activity pendimethalin, clomazone, flufenacet – **Stomp Aqua, Gamit 36CS**

Note – weed counts full strip

Herbicides

Summary Residual Herbicides 2016-2018

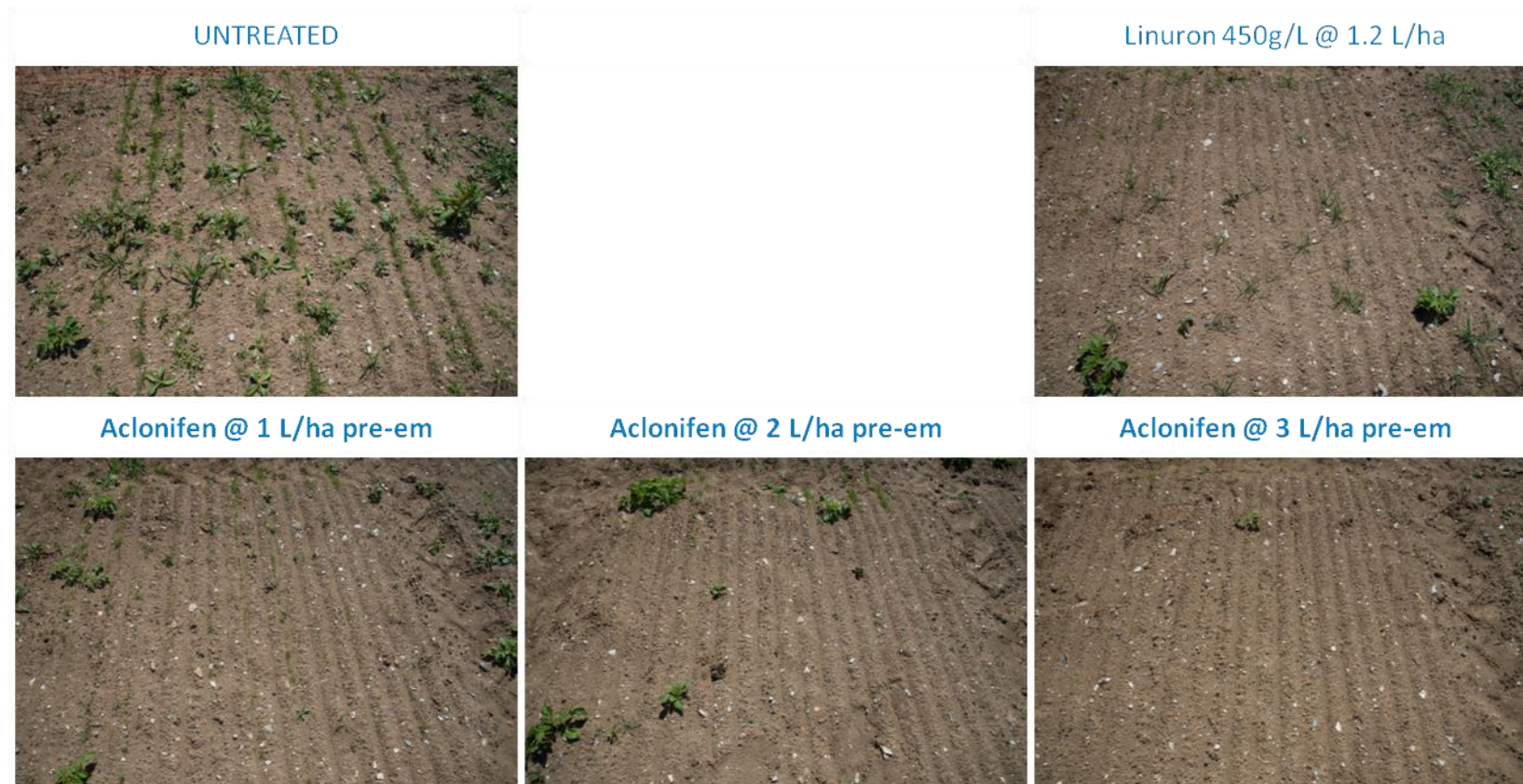
Wild Oats



Herbicides

Summary Residual Herbicides 2016-2018

Annual Meadow Grass



Herbicides

Summary Residual Herbicides 2016-2018

Mayweed and B.Bindweed

Untreated



Aclonifen @ 2 L/ha pre-em



Weed Screen 2018 - Pictures courtesy Bayer UK

Herbicides

Summary Residual Herbicides 2016-2018

- Low level of weeds on North 2018
- Options for Linuron replacement exist but costs will likely increase
- Knowledge of weed spectrum present will aid cost effective control – target actives to expected weed spectrum
- *Metribuzin* is the most cost effective *a.i.* for many weeds, include in most applications - **but** be careful of soil types and variety susceptibility
- 3 Residual A.I. mixes provide a broader range of control of weed spp.
- A.I. *aclonifen* looks a useful addition when used in combination with other actives – strengths F.hen, mayweed, s.nettle, amg, blackgrass, runch, charlock. **Residual control only- Application required pre-emergence of the weeds.** No phytotoxicity observed on any variety in 2017 (East) 2018 (North and East) when applied pre-emergence of the crop. Approval??

Herbicides

Contact Herbicide North 2018

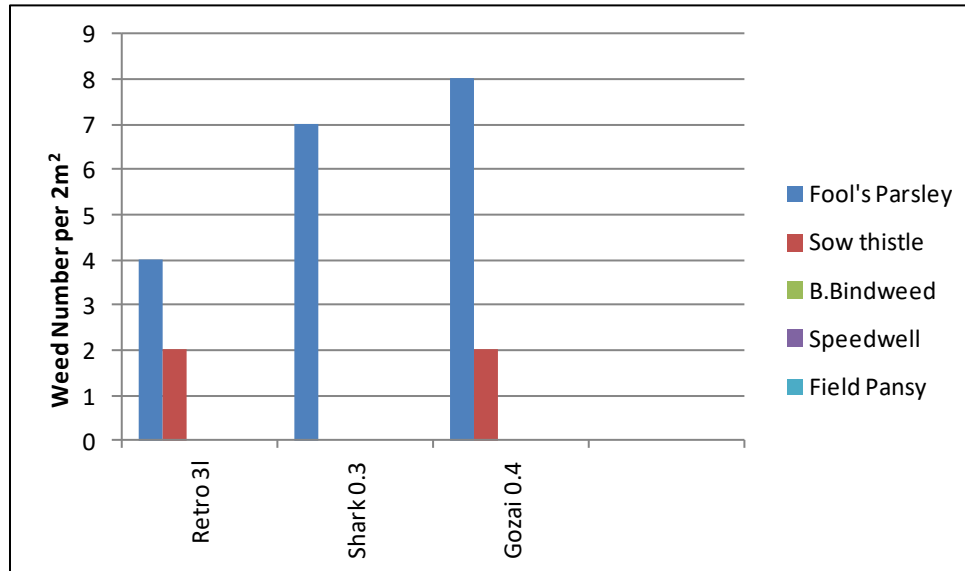
Trt no.	Water volume	Herbicide Application	Cost £/ha
12	200 l/ha	Retro (<i>diquat</i>) 3l/ha	£20
13	200l/ha	Shark (<i>carfentrazone ethyl</i> 62.5g/l) 0.3l/ha	£14
14	200l/ha	Gozai (<i>pyraflufen-ethyl</i> 26.5g/l) 0.4l/ha + Wetter	£19

- Co-applied with STD residual at 1st soil cracking

Other Products are available with identical active substances!

Herbicides

Contact Herbicide North 2018



- Limited weed levels observed

Other Products are available with identical active substances!

Herbicides

Contact Herbicide North 2018

Trt no.	Water volume	Herbicide Application	Cost £/ha
15	200 l/ha	Shotput (<i>metribuzin 70%</i>) 200g/ha + Titus (<i>rimsulfuron 25%</i>) 30g/ha + NI Wetter	£20
16	200l/ha	Shotput (<i>metribuzin 70%</i>) 200g/ha	£5
17	200l/ha	Shotput (<i>metribuzin 70%</i>) 500g/ha	£12
18	200l/ha	Basagran (<i>bentazone 87%</i>) 1.1kg/ha + Wetter	

- Application @ 15-20cm crop height – 21st June
- Reduced level of scorch than anticipated, all treatments

Other Products are available with identical active substances!

Herbicides

Post Emergence Herbicide 2018

Basagran 1.1kg/ha



Phytotoxicity – Jelly

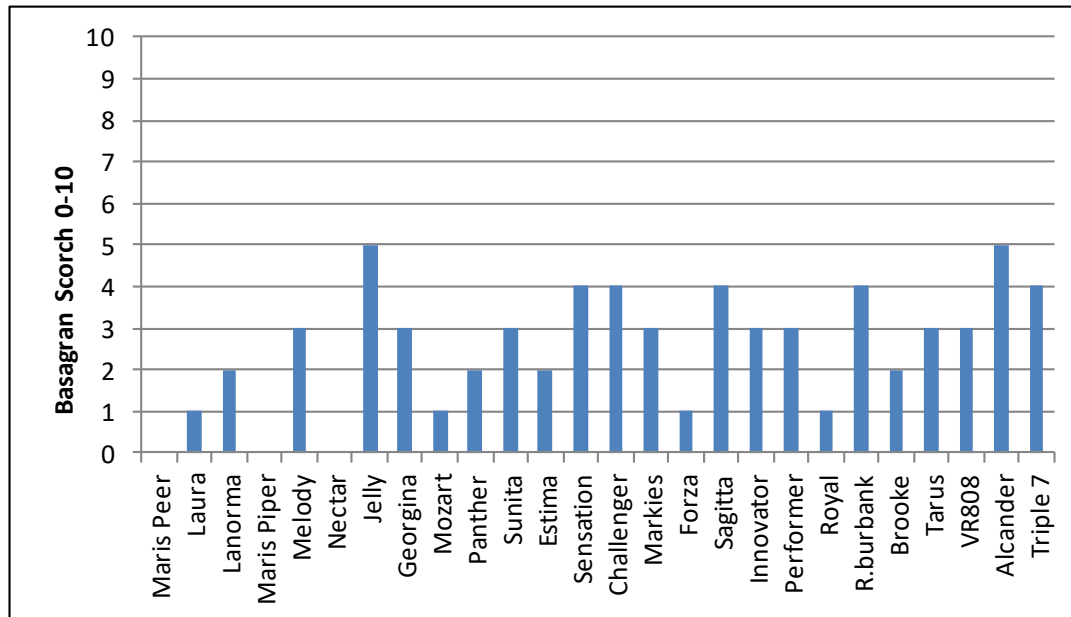


Phytotoxicity - Alcander

Herbicides

Post Emergence Herbicide 2018

Basagran 1.1kg/ha



Scorch levels on SPot Farm North site only

Herbicides

Post Emergence Herbicide 2018

Basagran 1.1kg/ha

Tolerant to Very Low Sensitivity Label ' <i>Ok to treat</i> '	Moderate Sensitivity - Label ' <i>Bordeline</i> '	High Sensitivity - Label ' <i>Do not treat</i> '
M.peer M.piper Gwenne* Angelique* Bambino* Gemson* Iodea* Brooke* Royal* Lanorma* Nectar* Laura* Mozart*	Estima Innovator* Melody* Rooster* Forza* Challenger* Soraya* Sensation* Red Fantasy* VR808* Performer* Georgina* Panther* Sunita* Tarus*	Markies* R.Burbank Shepody Leontine* Jelly* Sagitta* Alcander* Triple 7*

* Label recommendation on limited 2 year trial data

* Limited Spot farm trials 2018

Label “should not be applied in hot, sunny conditions when temperatures are at or above 21 Deg C particularly in the midday period. Foliage more sensitive to scorch in these conditions for 3 days following cool, cloudy weather” Apply before crop exceeds 15cm

2018 Demonstration Results
– Caution not
Recommendation, individual
field factors need to be
taken into account!

Herbicides

Post Emergence Herbicide 2018

Shotput 500g/ha

Severe
Phytotoxicity
Innovator



Moderate
Phytotoxicity
Performer



Herbicides

Post Emergence Herbicide 2018

Shotput 500g/ha

Slight
Phytotoxicity
Lanorma



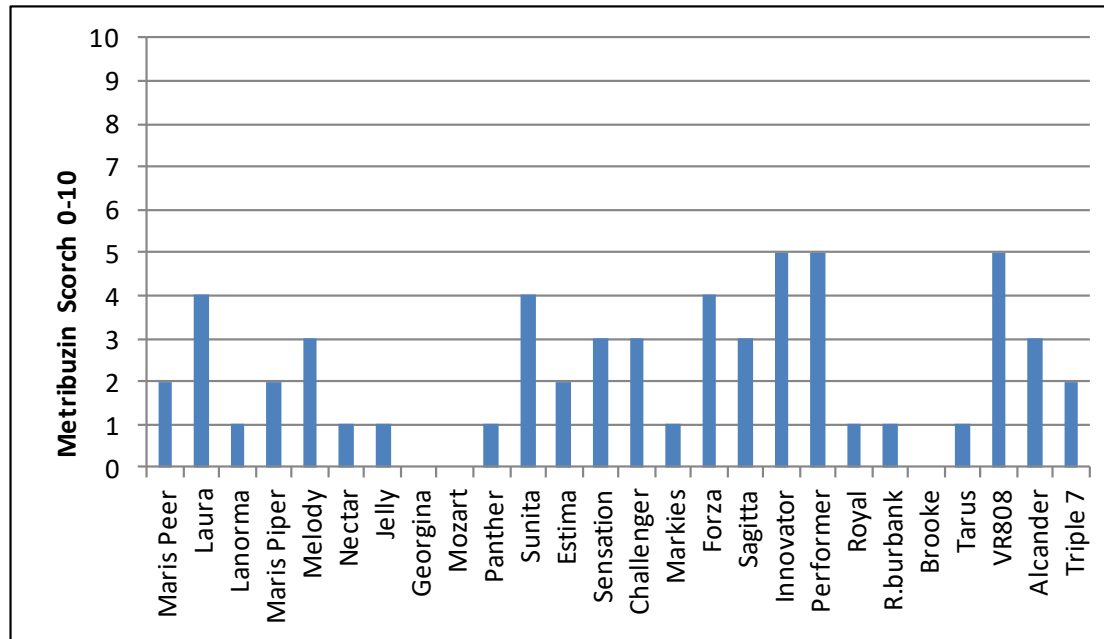
No
Phytotoxicity
Royal



Herbicides

Post Emergence Herbicide 2018

Shotput 500g/ha



Phytotoxicity levels on SPot Farm North site only

Herbicides

Post Emergence Herbicide 2016-2018

Metribuzin post emergence

Tolerant	Low Sensitivity	Moderate Sensitivity	High Sensivity
V.Sovereign* Brooke* Marfona Saxon Challenger* Markies	Royal Daisy* Lanorma* R.Burbank Jelly Angelique Soraya Bambino Gemson* Rooster Panther*	M.piper Leontine Eurostar Melody Nectar Performer Gwenne Shepody Georgina* Iodea Sensation* Alcander* Mozart*	Forza Innovator M.Peer VR808 Sunita* Laura* Triple 7* Sagitta*

* Limited Spot farm trials 2018

2018 Demonstration Results – Caution not Recommendation!

VCS Potatoes Ltd would like to thank RJ & JE Godfrey and AHDB potatoes for their assistance with these demonstrations

A vibrant landscape of a green field at sunset. The sun is low on the horizon, casting a warm glow over the scene. The sky is filled with colorful clouds, and the field is lush and green. A path leads from the foreground towards the horizon. In the foreground, there are several thin, white, wavy lines that appear to be part of a design or graphic element.

**‘Inspiring our farmers, growers
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rapidly changing world’**

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