Beet Crops

Technical Update 01

22 March 2019

UPL Europe Ltd, beet trials – Suffolk 2019

Photo 1. Herbie.

The 2019 season is starting off much earlier than 2018 where the UPL beet trials did not get drilled until 17th April. A few early beet crops this spring were drilled at the beginning of March and drilling is now well under way on the lighter soils although some of the heavy land is still a 'bit wet'! We aim to have the UPL trials fields drilled by the end of next week and this year, Dewar Crop Protection will be drilling one of the trials – photos hopefully in the next bulletin! At present a flat empty field awaits and is being watched over by a new member of the beet team, "Herbie" who will be helping with monitoring this season and perhaps some weed control as well!

During 2019 we will be looking at the following, if all goes to plan:

1. **The effect of adjuvants, water conditioners, rain water, tap water and manganese nitrate on herbicide performance.** A recent British Sugar/Farmer meeting persuaded us to look at rain water as a few growers were convinced some herbicides work better when using this as opposed to tap water.
2. **Comparison of herbicide programmes with and without desmedipham, the use of pre-ems and of course the 'Broadacre' technique.** This trial gives rise to discussion as to the best approach to take, two sprays or three, the value of a pre-em and cost amongst other things.
3. **A repeat of the 2018 herbicide screen which compares the activity of straight actives**, something that is not done commercially but it illustrates the strengths and weaknesses of individual actives and combinations – good for new sugar beet agronomists and some of the older ones!
4. **The effect of 4 different herbicide programmes on 5 different beet varieties.** There has been some discussion in the last two seasons about the sensitivity of some beet varieties, so we will have a fully randomised trial looking at this.

Beet actives for 2019

Amazingly there are over 160 products that are registered for use in beet crops to control annual broad-leaved weeds, albeit not all are actively marketed. However, there are only 10 actives currently approved for use on sugar beet and fodder beet see Table 1 (check approvals for other beet crops). As of 2020 that number will be reduced down to 9 if not 8, so perhaps the opportunity should be taken this season to look at a few different options!

Table 1. Currently approved actives for sugar beet and fodder beet

Active(s)	Example Product	Residual	Contact	Pre	Post	HRAC
ethofumesate	EFECKT*	✓	✓	✓	✓	N
lenacil	Venzar 500 SC	✓			✓	C1
metamitron	BETTIX FLO SC*	✓	✓	✓	✓	C1
phenmedipham	BETASANA SC*		✓		✓	C1
triflusulfuron-methyl	SHIRO*		✓		✓	B
desmedipham	As in BEETUP COMPACT * and BETASANA TRIO*		✓		✓	C1
clopyralid	VIVENDI 200*		✓		✓	O
quinmerac	As in Goltix Titan and Tanaris	✓		✓	✓	O
chloridazon	Pyramin DF	✓		✓		C1
dimethenamide - p	Tanaris	✓			✓	K3

* UPL Europe Ltd product HRAC = Herbicide Resistance Action Committee code

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Pre-emergence products for annual broad-leaved weed control

Table 1 shows that there are only 4 actives that can be used pre-emergence in sugar and fodder beet and of those chloridazon availability is limited with a final use date of 30.06.2020. The two most popular actives for pre-em use in 2019 are likely to be ethofumesate e.g. **EFECKT** and metamitron e.g. **BETTIX FLO SC**. All straight ethofumesate products approved for use on beet contain 500g/L of the active and the liquid metamitron products contain 700g/L. There are also formulated mixes available of metamitron and ethofumesate e.g. **OBLIX MT** and **VOLCANO** both of which contain 150g/L of ethofumesate + 350g/L of metamitron. The key reasons to use a pre-emergence spray are:

- Use to help timing and selection of post-emergence sprays
- Save on a post-emergence spray
- A must where black-grass is present

Black-grass control – pre-emergence sprays

Where black-grass is expected then ethofumesate e.g. **EFECKT**, **OBLIX 500**, **ETHOFOL** should be applied pre-emergence a frequently used rate is 1.0L/ha of product which supplies 500g ai/ha of ethofumesate. The active ethofumesate is most effective on black-grass pre-emergence, even if conditions are dry it is worth applying. Some ethofumesate will be required for post-emergence use either as a straight or as part of a formulated product such as **BETASANA TRIO** (phenmedipham + desmedipham + ethofumesate).

Do not forget that there is a restriction on the amount of ethofumesate that can be applied to a field, this is 1000g ai/ha over a three-year period.

For resistance management and also to widen the spectrum of weeds controlled it is worth adding a partner product to ethofumesate and the obvious choice is metamitron e.g. **BETTIX FLO SC**. Rates of **BETTIX FLO SC** used will depend on weeds expected e.g. mayweeds, field pansy, knot-grass and fat-hen for example will all benefit from using a pre-emergence application of metamitron. There is some activity on black-grass from metamitron but it is limited. Typical rates of **BETTIX FLO SC** to use are 1.0L/ha increasing this where high levels of susceptible weeds are likely.

Ivy-leaved speedwell – (*Veronica hederifolia*)

With the imminent demise of chloridazon one of the key questions being asked is what the most cost-effective method is to control ivy-leaved speedwell, in particular on light soils. The use of chloridazon pre-emergence has been the main means of controlling this 'annoying but not seriously damaging' weed, however the remaining actives approved for pre-emergence use are not particularly strong on ivy-leaved speedwell, so control will depend more on post-emergence actives.

Diagnostic Features of Seedlings

The cotyledons are large and dark green and are **very similar** to those of cleavers (*Gallium aparine*). The distinguishing difference is that cleavers have an indent instead of a small 'knob' at the tip.

Photo 2. Ivy-leaved speedwell (*Veronica hederifolia*)

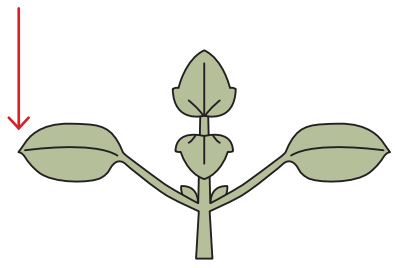

Diagram 1. Ivy-leaved speedwell (*Veronica hederifolia*)

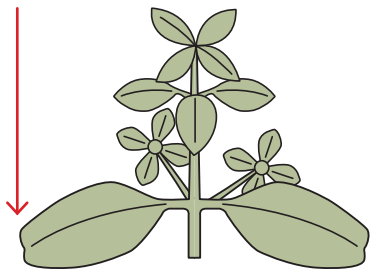

Diagram 2. Cleaver (*Galium aparine*)

Yield Effect	Timing	Key Actives	Comments	Example Products*
A common annual weed in arable land, it is not considered a major problem in beet crops as it is 'low lying' and tends to die off once the crop canopy closes over. However, in large numbers on light land it can compete with young beet early on.	Pre-em	chloridazon	Used to be key active for use pre-em. No longer actively marketed and final use date 30.06.20.	Pyramin DF
		ethofumesate	Limited Activity	**Efeckt**
		metamitron	Limited Activity	**Bettix Flo SC**
	Post-em	ethofumesate phenmedipham triflusulfuron-methyl	Formulated mixes may give better control. Aim to treat at cotyledon stage and include an adjuvant.	**Betasana Trio** OR **Beetup Compact** + **Efeckt** OR **Betasana Trio** + **Shiro** + Adjuvant oil

* Check product labels or UPL "Best Use Guides" for rates of use according to beet growth stage.

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Betasana Trio – a flexible product for all post-emergence timings

A key beet product for UPL is **BETASANA TRIO** which is an ethofumesate (115g/L) phenmedipham (75g/L) and desmedipham (15g/L) formulation. **BETASANA TRIO** can be used from crop emergence on fodder beet, mangel, red beet and sugar beet and is very safe to the crop. Where an early spray is required at the crop emergence stage then the following are UPL supported options:

- **BETASANA TRIO** 1.25L/ha to 2.0L/ha
- **BETASANA TRIO** 1.25L/ha + **BETTIX FLO SC** (metamitron) 1.0L/ha
- **Do not use adjuvants prior to cotyledons "fully expanded" growth stage of the beet.**

Once the crop reaches the 'fully expanded cotyledon' stage then there are a large number of options available these can be found in the **BETASANA TRIO** 'Best Use Guide' that is available at **uk.uplonline.com**. Table 2, provides a quick guide to rates of **BETASANA TRIO** compared to Betanal maxxPro.

Table 2. Betasana Trio rates compared to Betanal maxxPro

		Active applied/ha at given rate				
Product Name	**Rate/ha**	**phen**	**des**	**phen + des**	**etho**	**lenacil**
BETASANA TRIO	1.0	75	15	90	115	—
Betanal maxxPro	0.75	45	35	80	56	20
BETASANA TRIO	1.25	94	19	113	143	—
Betanal maxxPro	1.0	60	47	107	75	27
BETASANA TRIO	1.5	112	22	134	172	—
Betanal maxxPro	1.25	75	58	133	94	34
BETASANA TRIO	2.0	150	30	180	230	—
Betanal maxxPro	1.50	90	70	160	112	40

Renewals and label information for UPL beet products

The active ethofumesate has progressed successfully through the renewal process at EU level and we are now awaiting on new authorisations from CRD, no changes are expected for the 2019 season. Currently phenemedipham and desmedipham are going through the renewal process with a 'vote' expected this year on the future of desmedipham, but no changes for the 2019 season. We will continue to update you as more information become available.

A 'UPL Sugar beet Technical Update' was issued in January 2019 that provides further information on all UPL beet products this, is available at **uk.uplonline.com**.

If you require further technical information on the UPL beet product range then please contact me at **pam.chambers@uniphos.com**.

BASIS points for the technical information provided by this series of updates are CP/67237/1819/g.
To claim them email assistant@basis-reg.co.uk.

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