

Beet Crops

Technical Update 02

29 March 2019

UPL Europe Ltd, beet trials – Suffolk 2019



Photo 1. Beet pellets



Photo 2. Drilling trial



Photo 3. Marking out trial



Photo 4. Drilling trial

Tuesday 26th March was 'drilling day' for the variety x herbicide interaction trial. Dewar Crop Protection (DCP) drilled 60 plots of 5 different varieties using Xbeet Enrich 100, Xbeet Enrich 200 and non-primed beet seed (Photo 1). Table 1 provides a summary of seed coatings used, all varieties had the insecticide Force ST.

Table 1. Seed pelleting information for variety x herbicide interaction trial

Variety Code	Seed Technology	Fungicide
A	Xbeet Enrich 100	Tachigaren 70 WP, Thiram
B	Xbeet Enrich 200	Tachigaren 70 WP
B, C, D, E	Non - primed	Tachigaren 70 WP, Vibrance SB

A further two trials were farmer drilled on the same field on Monday 25th March using Sabatina KWS, pre-emergence sprays have been applied by DCP to some of the plots. One trial is yet to be drilled at a site 7 miles away.

Post-emergence sprays and crop safety

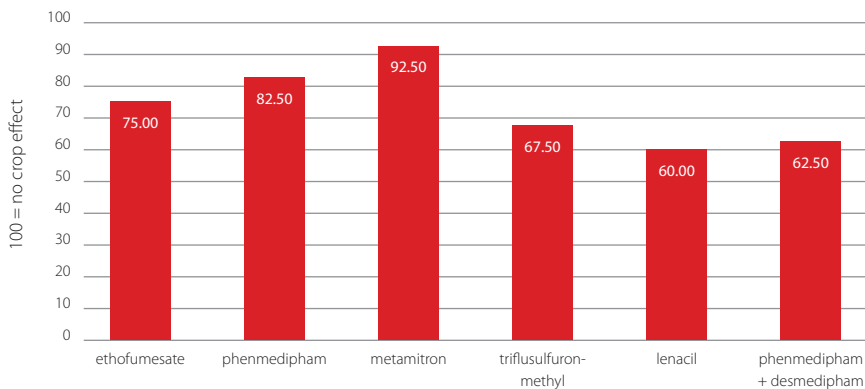
Some early drilled crops are emerging/emerged but that is on a relatively small acreage – however with beet come weeds and this season FROSTS! Earlier this week there was a 'stiff' frost here in the Waveney Valley on the Norfolk/Suffolk border so care needs to be taken with early herbicide sprays.

In 2018 UPL had a herbicide screen looking at the strengths and weaknesses of actives applied on their own or in combination – something that is not done commercially. Table 2 shows some of the treatments used, all treatments were applied at the T1, T2 and T3 timing and included 0.5L/ha of a vegetable oil. The rates used were set so that comparisons could be made with some formulated products that were also included within the trial. Crop vigour was assessed on 29.05.18, just prior to the T3 application, scores are shown in Graph 1 for some of the treatments.

Table 2: Treatments used in herbicide screen - 2018

Variety Code	Seed Technology	Fungicide	g a.i./ha
EFECKT	ethofumesate	0.4L	200
BETASANA SC	phenmedipham	1.25L	200
BETTIX FLO SC	metamitron	0.65L	455
SHIRO	triflurosulfuron-methyl	30g	15
Venzar 500 SC	lenacil	0.4L	200
BEETUP COMPACT	phenmedipham + desmedipham	1.25 litres	100 +100

Graph 1. Crop Vigour assessed on 29.05.18 in Herbicide Screen



Source: Yaxley, Suffolk 2018

To 'older agronomists' the results from the vigour assessment will pose no surprises but it was still interesting to see how the inclusion of desmedipham 'hotted up' the effect on the beet and of course on the weeds as well! In some situations, it is beneficial to apply 'hotter' mixes but in 2018 when temperatures were very hot and spraying in temperatures over 20°C was occurring then safer herbicide mixes were desirable. Metamitron as in **BETTIX FLO SC** is considered a safe option and this forms a good partner for **BETASANA TRIO** (ethofumesate 115, phenmedipham 75 and desmedipham 15) at the T1 timing if temperatures are high as they were in 2018 or if FROSTS are forecast which is more likely this season!

To minimise the risk of damage to young beet:

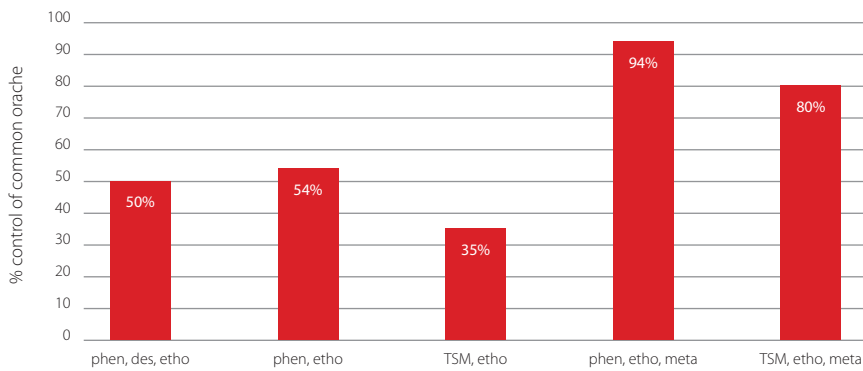
- Avoid spraying when possible in temperatures > 21°C, 0% cloud cover and high humidity or when frosts are forecast.
- Rectify any nutrient deficiencies before applying any herbicides.
- Use a vegetable oil as opposed to a mineral oil.
- Don't over dose with sprayer washouts (this does happen!) and avoid overlaps.
- Look at the actives being applied and if the beet are showing signs of stress look to using 'kinder' actives or formulations. Most liquid beet herbicides are suspension concentrates (SC) and these tend to be kinder on the crop than suspo-emulsion (SE) formulations. **BETASANA TRIO** is an SC formulation.
- Check crops after each spray application to assess the effect of herbicides applied so that following sprays can be adjusted as necessary.
- Some varieties may be more sensitive than others so be prepared to adapt spray programmes if any signs of stress are showing.

Orache (*Atriplex patula*) and Fat-hen (*Chenopodium album*) – the importance of metamitron

In 2017 and 2018 UPL trials looked at the effect of different actives on the control of Orache and Fat-hen. Results are shown in Graph 2 for a number of treatments applied at the T1, T2 and T3 timing on the % control of Orache. No adjuvants were used in any of the treatments which would have reduced the effect of **SHIRO** (triflusaluron-methyl) as it always responds to the addition of an oil. The importance of including metamitron in the mix can be seen with control levels being 'boosted' considerably. UPL produce 'straights' of phenmedipham (**BETASANA SC**), metamitron (**BETTIX FLO SC**) and ethofumesate (**EFECKT**) so you are able to tailor rates as required or alternatively apply a formulated mix of metamitron + ethofumesate (**OBLIX MT** or **VOLCANO**) and add **BETASANA SC** to it, or **BETASANA TRIO + BETTIX FLO SC** is another option.



Graph 2 Control of common Orache (*Atriplex patula*)



No oil in any treatments!

16 June F Pr. = < 0.001, LSD = 26.40

Key:

phen = phenmedipham
 des = desmedipham
 etho = ethofumesate
 TSM = triflusaluron-methyl
 meta = metamitron

Diagnostic features of Fat-hen and Orache



Photo 5. Orache at young plant stage

Orache – up to 80cm high, branched stems, heavily ribbed, very long and has horizontally spreading lateral branches. (Photo 5)

Fat-hen – up to 2m tall, but even plants at 10cm can flower and set seed. Leaves are variable in shape and long stalked. (Photo 6)



Photo 6. Fat-hen at young plant stage

Yield Effect	Key Actives	Comments	Example Products*
Yields can be reduced by 11% or more by just one tall weed, e.g. Fat-hen/Orache for each 1m ² of crop	metamitron phenmedipham desmedipham ethofumesate	metamitron is required for residual effect to control late germinating weeds. Orache is more difficult to control than Fat-hen.	BETASANA TRIO (phenmedipham + desmedipham + ethofumesate) + BETTIX FLO SC (metamitron) + Adjuvant oil

* Based on UPL products.

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

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