

Beet Crops

Technical Update 03

20 April 2017

UPL Europe Ltd, Annual Broad-leaved Weed (ABLW) Sugar Beet Trials – Suffolk 2017

Last week the first post-emergence sprays were applied at the Yaxley site, the crop was at the fully expanded cotyledon stage. The sugar beet at this site now have well developed 1st true leaves which are nearly 2cm in length, see Photo 1, showing just how rapidly they have grown in the last few days. A second post-emergence spray is planned for this week, a short spray interval but the small amount of rain received has stimulated further weed germination.

The two Mendlesham sites are very varied with respect to weed emergence. The Mendlesham 1 site having a much higher burden of weeds, including cleavers, which are looking very purple and 'hard', more on those later! The first post-emergence sprays are due to be applied at the Mendlesham sites this week, we are including vegetable oil with most of the treatments as the crop will stand it and some of the weeds e.g. cleavers will be quite hardened due to recent dry conditions. A summary of activity at the three sites is given in Table 1.



Photo 1. Yaxley beet crop

Table 1. Details of Sugar Beet Trials 2017 – Suffolk (17th April 2017)

Location	Drilling Date	Crop Growth Stage	Pre-em	1st Post-em
Mendlesham 1	28.03.17	1st True leaves emerging	30.03.17	19.04.17 TBC
Mendlesham 2	24.03.17	1st True leaves emerging	28.03.17	19.04.17 TBC
Yaxley	16.03.17	1st True leaves > 1cm	25.03.17	11.04.17

First Post-emergence Sprays Where Crop Emergence is Variable

There are a number of beet crops where emergence is very variable due to the dry conditions. Crop growth stage varies from not yet emerged to first true leaves showing in the same field, weeds tend to follow the same pattern. This does make weed control decisions more difficult – should a holding spray be applied or not? Where difficult weed species are present and first true leaves are showing then spraying should not be delayed, knotgrass is one of the more difficult weeds and is covered later in this update. Other weeds to watch out for early on are pale persicaria, redshank, cranesbill and orache, this list is not exhaustive! Table 2. shows some options that UPL will support from crop emergence.

Table 2. UPL Supported Herbicides at Crop Emergence

Products	Actives	Rates/ha
BEETUP COMPACT	phenmedipham + desmedipham	1.5
BETASANA TRIO	phenmedipham + desmedipham + ethofumesate	2.0
BETTIX FLO/DEFIANT SC/TARGET SC	metamitron	1.0
OBLIX MT/VOLCANO	ethofumesate + metamitron	1.25
BETASANA TRIO + BETTIX FLO/DEFIANT SC/TARGET SC	phenmedipham + desmedipham + ethofumesate + metamitron	1.25 + 1.0
BETTIX FLO + BEETUP COMPACT SC	metamitron + phenmedipham + desmedipham	1.0 + 1.0
BETTIX FLO + BEETUP FLO/BETASANA SC	metamitron + phenmedipham	0.75 + 1.0
OBLIX MT/VOLCANO + BEETUP COMPACT SC	ethofumesate + metamitron + phenmedipham + desmedipham	1.25 + 1.0

Frost

As usual at this time of the year there are warnings of frost in rural areas, so take care with spraying. In UPL trials last year, mineral oils applied at this time of the year were much harder on the crop than vegetable oils, therefore the use of vegetable oils will be the safer option for earlier timings.

Knotgrass (*Polygonum aviculare*)



Photo 2. Knotgrass

Diagnostic Features of Seedlings

- Long crimson hypocotyl
- Broad first true leaf
- Leaves narrow and pear shaped

All *Polygonums* have short germination periods; knotgrass largely germinates for about two months during the early spring. In spring crops such as sugar beet, if not controlled, knotgrass can cause yield reduction and eventually harvesting problems.

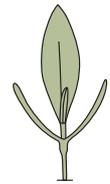


Diagram 1. Seedling Knotgrass (*Polygonum aviculare*)

Yield Effect	Key Actives – post-em	Comments	Suggested Products
1 polygonum plant/m ² can reduce yields by 3 t/ha* based on a 50 t/ha crop.	metamitron adjuvants	Avoid straight phenmedipham/ desmedipham	BETTIX FLO/DEFIANT SC/TARGET SC

* Ref: Weed biology series – the *Polygonums*. British Sugar Beet Review, Summer 2011 Volume 69 No.2.

Knotgrass is present in high numbers at one of the UPL development trials sites in a situation where the beet size range from not yet emerged to expanded cotyledon. The largest knotgrass has first true leaves emerging and needs controlling. In this situation the tank mix below is approved. However IF conditions remain dry it would probably be better to reduce the rate of metamitron and use a higher rate of **BETASANA TRIO**.

- **BETASANA TRIO** 1.25L/ha + **BETTIX FLO/DEFIANT SC/TARGET SC** 1.0L/ha

Further sprays will depend on emergence of beet, growth of knotgrass and weather conditions.

Cleavers (*Galium aparine*)



Photo 3. Cleaver

Diagnostic Features of Seedlings

- Cotyledons are very large and they can sometimes appear purple/green in colour (Photo 3).
- Oval cotyledons are notched at the tip, the notch going inwards (Diagram 2). Cleavers can be confused with ivy-leaved speedwell at the cotyledon stage, but the notches at the tip go outwards on the speedwell (Diagram 3).
- True leaves appear as whorls

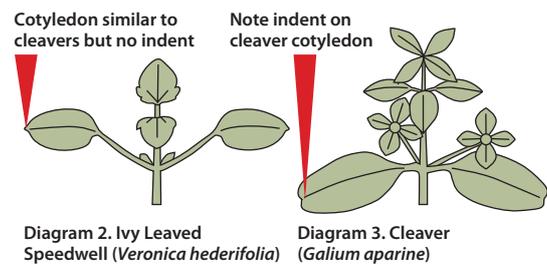


Diagram 2. Ivy Leaved Speedwell (*Veronica hederifolia*)

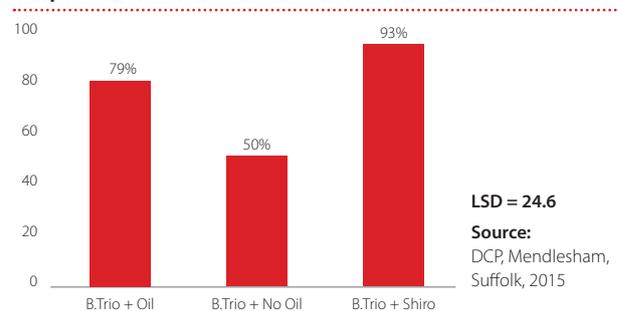
Diagram 3. Cleaver (*Galium aparine*)

Yield Effect	Key Actives – post-em	Comments	Suggested Products + Oil*
Not quantified, but very competitive and considered a key weed to control.	triflusalufuron-methyl ethofumesate	Sprays work best at the 1st whorl stage when cleavers are green and actively growing.	BETASANA TRIO BETASANA TRIO + SHIRO/Debut BETASANA TRIO + Safari Lite WSG

* Based on UPL products with appropriate tank mix partners. **BETASANA TRIO** = phenmedipham + desmedipham + ethofumesate. **SHIRO/Debut** = triflusalufuron-methyl. **Safari Lite WSG** = triflusalufuron-methyl + lenacil.

There are large numbers of cleavers at the cotyledon stage at the Mendlesham 1 site, however they are quite purple due to the dry conditions. The inclusion of an adjuvant with **BETASANA TRIO** will improve levels of control, see Graph 1. which shows results from three spray programmes in 2015. From the 1st True leaves 1cm stage, **SHIRO/Debut** can be tank mixed with **BETASANA TRIO** 2.0L/ha + Oil. Prior to this growth stage it is advisable to omit the **SHIRO/Debut** but keep the rate of **BETASANA TRIO** at 2.0L/ha and then include some triflusalufuron-methyl in the second spray. The relatively high rates of ethofumesate included within **BETASANA TRIO** will help with cleaver control.

Graph 1. % Control of Cleavers



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UPL Europe Ltd., The Centre, 1st Floor, Birchwood Park, Warrington WA3 6YN
T: +44 (0) 1925 819999 F: +44 (0) 1925 817425

www.upleurope.com