

CONVISO® SMART – The KWS Manual for UK Growers

KWS AgroService Sugar Beet

conviso®
SMART

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SEEDING
THE FUTURE
SINCE 1856





Content

KWS – Seeding the future:

With SMART KWS varieties we are supplying the key component for a future-leading weed control system in sugar beet.

The KWS AgroService team provides you a guidebook for the professional use of the CONVISO® SMART system. In case of further questions, please contact your local KWS representative.

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CONVISO® SMART – a valuable system

- CONVISO® SMART gives new options for weed control in sugar beet – the first introduction of new active ingredients in sugar beet for decades.
- KWS and Bayer have worked for more than 15 years to develop the CONVISO® SMART system.
- The system is based on two components:
 - SMART KWS varieties, bred by KWS, specifically tolerant to CONVISO® ONE.
 - CONVISO® ONE, the novel herbicide developed by Bayer.

! SMART KWS seeds make it possible to introduce a new herbicide in sugar beet.



SMART KWS varieties

Bred with classic breeding methods

Specifically tolerant to CONVISO® ONE

With best crop safety to CONVISO® ONE

Can also be treated with classical herbicides if required

Utilise full yield potential

CONVISO® ONE

Broad weed control spectrum

Fewer herbicide applications

Can be sequenced with classical sugar beet herbicides if required

Innovative weed control

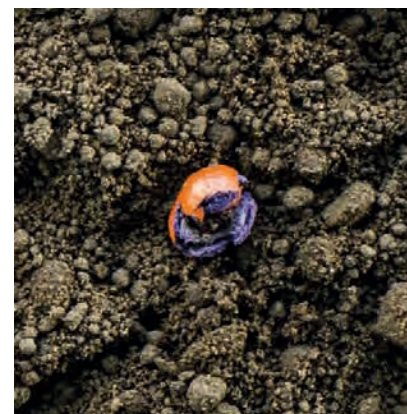
How can I distinguish between SMART KWS and classic seed?



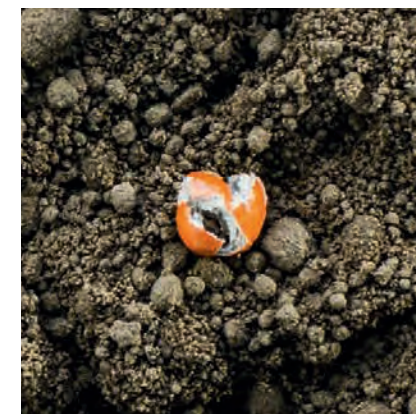
SMART KWS seeds will come in a seedbox easy to distinguish from the classic seedbox.

How can I distinguish between SMART KWS and classic seed?

Purple inner color:
SMART KWS sugar beet seed



Grey inner color:
classic KWS sugar beet seed



SMART KWS seed has a **purple** inner pelleting mass whereas classic KWS sugar beet seed is **grey** on the inside. Both pellets are orange on the outside.

! Do not mix SMART KWS seed and classic sugar beet seed.

Can I mix
classic seed with
SMART KWS
seed?

- Never mix classic seed with SMART KWS seed.
- The seed drill needs to be completely clear of classic seed when drilling SMART KWS seed.
- Classic sugar beet are fully susceptible to the herbicide CONVISO® ONE and thus will be killed if treated.

	CONVISO® ONE	Classic herbicides
SMART KWS variety	✓	✓
Classic variety	✗	✓

! Stay with the system and choose the correct herbicide.

Can I mix
classic seed with
SMART KWS
seed?

- Plan whole fields for CONVISO® ONE to avoid mixing varieties.
- Know where your varieties are!



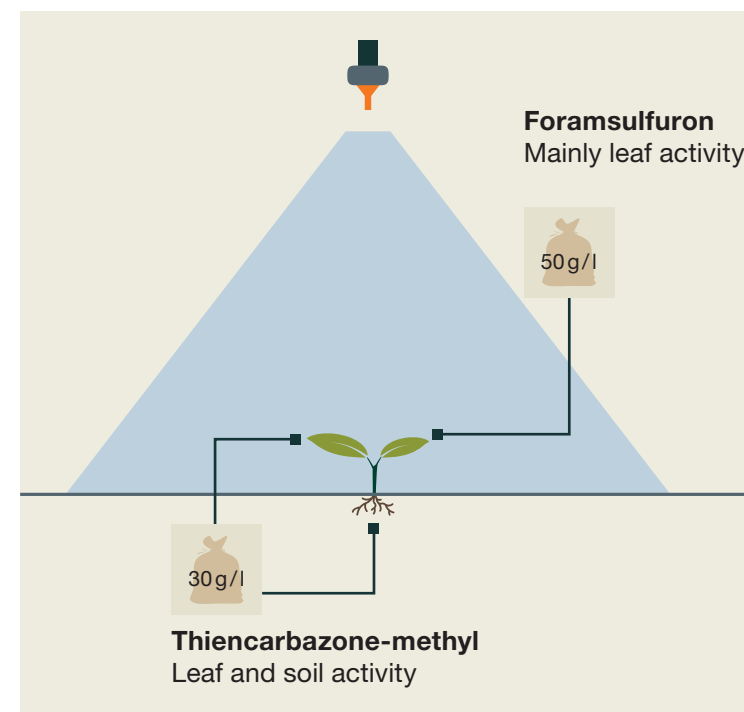
! Keep SMART KWS seed separate from classic sugar beet seed. Don't mix the seed in the seed drill.

What are the basics that I need to know about the CONVISO® ONE herbicide?

What are the basics that I need to know about the CONVISO® ONE herbicide?

CONVISO® ONE...

- is a post-emergence herbicide belonging to the ALS-inhibitor group (HRAC B).
- contains two active ingredients (Foramsulfuron and Thien carbazone-methyl) in an oil dispersion (OD) formulation.
- has soil and leaf activity.
- has a registered application window from the 4 true leaf stage (BBCH 14) and up to and including the 8 true leaf stage (BBCH 18) of sugar beet.
- effectively controls weeds with a single application (1.0 L/ha).
- can be used in a sequence with other registered sugar beet herbicides if required.



! Reduced dose rates are not allowed for a proper weed resistance management.

! CONVISO® ONE can only be applied to SMART KWS varieties. Classic sugar beet will be killed, if treated with this herbicide. Avoid drift!

What is the correct application timing for CONVISO® ONE?

The mixing and application of CONVISO® ONE

	CONVISO® ONE Single application	Classic herbicides
Indicator weed	Fat hen* (<i>Chenopodium album</i>)	Any weed
Timing	max. 4 true leaf stage of fat hen	Cotyledon stage of weeds
Number of applications	Single application - 1 x 1.0 L/ha	3–6

* if not present, apply when other weeds reach the same true leaf stage

- Shake the CONVISO® ONE can well before opening (shake upside down).
- If sedimentation is visible ensure it is fully mixed before filling the sprayer.
- Entirely dissolve CONVISO® ONE before adding a mixing partner to the sprayer.
- Only add water to the can for final rinsing.
- Recommended water volume: 150–300 L/ha.
- pH value of water: 5–7.
- Optimal temperature for spraying: 10–20 °C .
- Rain fastness: 4–6 hours.
- Reactivation of Thien carbazone-methyl by moisture: up to 14–18 days after application.

! Always follow the growth stage of the indicator weed fat hen.

! Always follow the instructions on the CONVISO® ONE label and use the full dose rate of 1.0 L/ha per season.

Do I need to clean the sprayer after CONVISO® ONE?

How do I apply the **single** application of CONVISO® ONE correctly?



Single application
 $1 \times 1.0 \text{ L/ha}$

- Always clean the sprayer after use of CONVISO® ONE. Use of a proprietary cleaner is recommended.
- When cleaning follow the standard procedure for ALS-inhibitor herbicides.
- Recommendation: clean the sprayer directly after use to avoid
 - damage to crops you spray after using CONVISO® ONE.
 - drying and hardening of the herbicides.



Never apply CONVISO® ONE to classic sugar beet. Small amounts of CONVISO® ONE harm sugar beet and other sensitive crops heavily.

Single application $1 \times 1.0 \text{ L/ha}$



Too small

Aiming for two to four true leaves of the fat hen



Correct target size



Too big

- Correct application timing: max. 4 true leaves of fat hen.
- If no fat hen is in the field: apply when the first plants of other weed species reach max. 4 true leaf stage (BBCH 14).



Always follow the label recommendations of CONVISO® ONE.

How do I apply the **single** application of CONVISO® ONE correctly?

! The approved use pattern in the UK is a single application of 1L/ha.

What is the standard application recommendation?

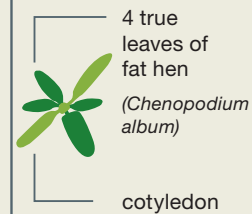


Standard recommendation

- Max. yearly dose rate 1.0 L/ha as a single application
- Registered application window: 4–8 true leaves of sugar beet
- Apply using a pressure of 2.5 - 3.0 bar and a spray quality of fine to medium (BCPC category)

single application

1.0 L/ha
CONVISO® ONE



CONVISO® ONE
herbicide application

When are the first effects of CONVISO® ONE visible in the field?

How long does the soil activity of CONVISO® ONE last?

CONVISO® ONE is a systemic herbicide being absorbed and then translocated through the plant. Symptoms take several days to become visible.

- Once treated weeds stop growing, but symptoms take longer to be visible.

Weed symptoms:

- Symptoms will take several days to be visible and include yellowing and stunting of the weeds.
- First herbicidal effects will be visible after approx. 5–7 days.
- Significant symptoms and dying plants are visible approx. 7–12 days after spraying. Complete dying can take up to 4 weeks depending on the weather conditions.



Day of application

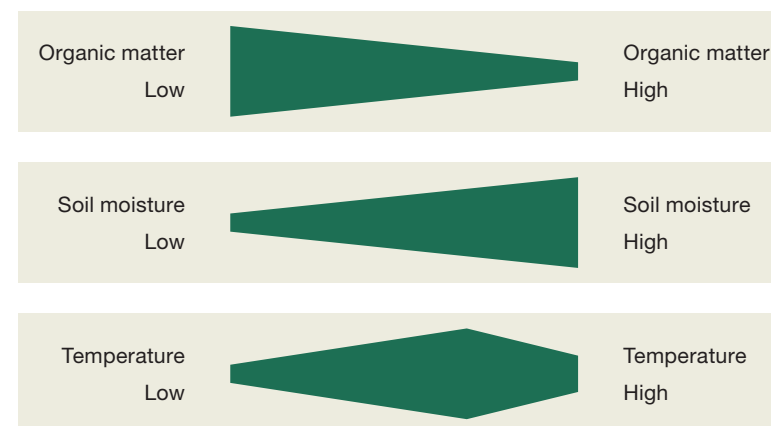


11 – 14 days after spraying



21 days after spraying

Herbicide soil activity



- The soil activity of CONVISO® ONE in most cases lasts 5–10 days longer than of classic herbicides.
- The duration of the soil activity can be influenced by: soil type, organic matter, soil moisture, soil and air temperatures.

How can I maximize the effect of CONVISO® ONE in specific conditions?

Which hard to fight weeds in sugar beet are controlled by CONVISO® ONE?

Dry and cold conditions



- Dry and cold conditions lead to reduced herbicide uptake and slow down translocation of the herbicide in the weed.
- In dry conditions the addition of methylated vegetable oil may improve the efficacy.
- Adjust the rate of oil according to the maximum temperature on the day of application, following the temperature chart conventionally used.

The main hard to fight weeds controlled by CONVISO® ONE are:

- Knot grass (*Polygonum aviculare*)
- Fool's parsley (*Aethusa cynapium*)
- Common amaranth (*Amaranthus retroflexus*)
- Fat hen (*Chenopodium album*)
- Creeping thistle (*Cirsium arvense*) seedborne
- Annual mercury (*Mercurialis annua*)
- Sensitive grass weeds

To improve efficacy in specific weed situations, e.g. hard to fight weeds, large weeds, CONVISO® ONE can be

- mixed with adjuvant oil.
- applied in a sequence with classic herbicides.
- Do not sequence CONVISO® ONE with any other ALS inhibitor herbicide, such as a sulfonylurea.

Future productivity starts now!

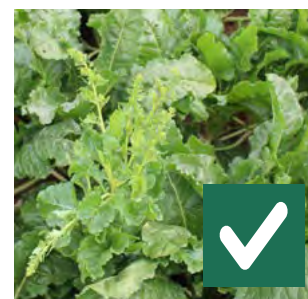


To maintain the benefits of using CONVISO® SMART it should be used to manage weed control through your whole rotation.

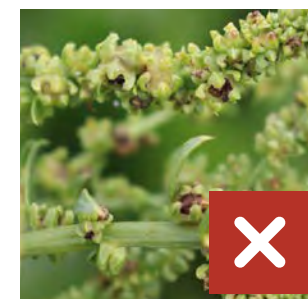
- Optimise weed control by an intelligent combination of cultural and chemical control measures.
- Maximise your long-term activity of CONVISO® ONE by smart resistance management strategies.
- Manage bolters to actively minimise weed beet populations.

Target: leave ZERO bolters on the field!

- To reduce the chances of bolters, do not sow too early.
- If bolters appear – pull them, like in classic sugar beet.
- Pulling early before they start maturing is most efficient.
- Strictly avoid building up ALS-tolerant weed beet.
- Weed beet of SMART varieties can not be controlled with CONVISO® ONE or classic herbicides.



Pull before seeds are maturing



Mature seeds can cause weed beet in the next season

! CONVISO® SMART is the one-time chance to clear your field from classic weed beet.

Which crops are suitable after CONVISO® SMART sugar beet?

Which crops are suitable after CONVISO® SMART sugar beet?

After crop failure

e.g. frost, flooding in the same spring

Autumn sowing

In the year after application in a normal crop rotation

Plough or cultivate to 20 cm prior to planting, otherwise crop damage may occur.

- SMART KWS sugar beet
- Maize - wait 1 month after CONVISO® ONE and also plough or cultivate to at least 20cm

- Winter Wheat - wait a minimum of 4 months after the CONVISO® ONE application and also plough or cultivate to at least 20cm

- Winter wheat
- Winter barley
- Spring wheat
- Spring barley
- Maize
- Peas
- Sunflowers
- Ryegrass

For further guidance on following crops please contact your local Bayer Commercial Technical Manager.

March

April

May

[...]

Sept

Oct

Nov

[...]

March

April

Future productivity with
CONVISO® SMART

What shall
I do about
CONVISO® SMART
groundkeepers?

Integrated Weed
Management
with CONVISO®
SMART – how does
it work?

Groundkeepers



- Reduce the chance of groundkeepers by minimising harvester losses.
- If groundkeepers of SMART varieties sprout in the following crop, control them with a non-ALS inhibiting herbicide.
- Groundkeepers need to be prevented from bolting.

Four practices contribute most
to integrated weed management:

Crop
rotation

Additional
cultural
control
methods

Management
of the weed
seed bank

Use a variety
of modes of
action

Adapted from the voting results of the Weed Resistance Global Symposium 2015

! A proper weed resistance management ensures longevity and sustainability of the CONVISO® SMART system. Contact your agronomist for individual advice.

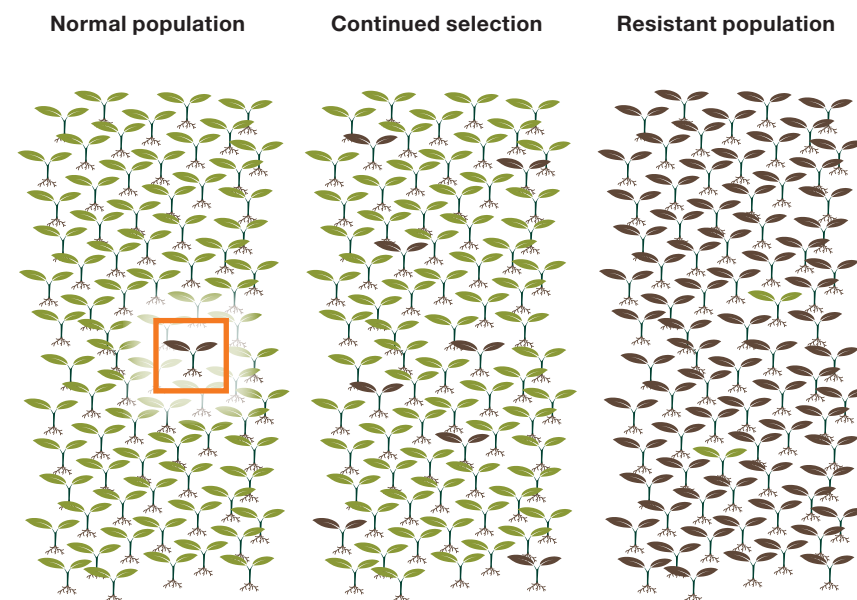
Future productivity with
CONVISO® SMART

Use CONVISO® ONE according to weed resistance management guidelines.

Adopt an integrated approach to weed management to avoid resistance issues.

- Respect a diverse crop rotation.
- Rotate different herbicide mode of action in the crop rotation.
- Use the herbicide according to the label (full dose rate, appropriate growth stage of weeds, etc.).
- Soil cultivation (> 10 cm) supports Integrated Weed Management.
- Use a cover crop if possible to reduce weed pressure.

Frequent use of the same mode of action in the crop rotation leads to high selection pressure and increases the risk of selecting a resistant weed population over time.



! Overreliance on the same herbicide mode of action can lead to herbicide resistant weeds.

What shall I do if I suspect resistant weeds?

Observe the weed population in your fields and react responsibly:

- Use CONVISO® ONE according to the label.
- If a resistance is documented or suspected:
 - discuss with a BASIS qualified advisor
 - determine the weed species.
 - identify an alternative efficient herbicide.
- If ALS resistance is considered to be not manageable: do not use CONVISO® SMART.

! Act responsibly and keep your fields productive with CONVISO® SMART.



Disclaimer

Use plant protection products safely. Always read the label and product information before use. Pay attention to the risk indications and follow the safety precautions on the label as well as all other required stewardship practices. The Control of Substances Hazardous to Health (COSHH) Regulations may apply to the use of this product at work. The information contained in this Grower Manual offers general advice and guidance for the CONVISO® SMART system. It is not and shall not be construed as an offer to sell. Please note that some information represented herein may be subject to adjustment for use under specific conditions and situations. For specific product information and recommendations, please refer to your local KWS or BAYER representative.

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