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

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.
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.

<table>
<thead>
<tr>
<th>SMART KWS variety</th>
<th>CONVISO® ONE</th>
<th>Classic herbicides</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classic variety</th>
<th>CONVISO® ONE</th>
<th>Classic herbicides</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Stay with the system and choose the correct herbicide.

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?

CONVISO® ONE...

- is a post-emergence herbicide belonging to the ALS-inhibitor group (HRAC B).
- contains two active ingredients (Foramsulfuron and Thiencarbazone-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?

<table>
<thead>
<tr>
<th>Indicator weed</th>
<th>Timing</th>
<th>Number of applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat hen* (Chenopodium album)</td>
<td>max. 4 true leaf stage of fat hen</td>
<td>Single application - 1 x 1.0 L/ha</td>
</tr>
</tbody>
</table>

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

What is the correct application timing for CONVISO® ONE?

- 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.
- Optimal temperature for spraying: 10–20 °C.
- Rain fastness: 4–6 hours.
- Reactivation of Thiencarbazone-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 CONVISØ® ONE?

Always clean the sprayer after use of CONVISØ® 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 CONVISØ® ONE.

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

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

Single application 1 × 1.0 L/ha

Aiming for two to four true leaves of the fat hen

Correct target size

Too small

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 CONVISØ® 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

- 4 true leaves of fat hen (Chenopodium album)
- cotyledon
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.

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.
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.

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

Pull before seeds are maturing
Mature seeds can cause weed beet in the next season
Which crops are suitable after CONVISO® SMART sugar beet?

**After crop failure**
e.g. frost, flooding in the same spring

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

**Autumn sowing**

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

**In the year after application in a normal crop rotation**
Plough or cultivate to 20 cm prior to planting, otherwise crop damage may occur.

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

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

What shall I do about CONVISO® SMART groundkeepers?

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:

1. Crop rotation
2. Additional cultural control methods
3. Management of the weed seed bank
4. Use a variety of modes of action

Adapted from the voting results of the Weed Resistance Global Symposium 2015
What are practical measures of Integrated Weed Management?

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.

Why should I rotate the herbicide mode of action and use non-ALS mixing partners?

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.
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.
Ben Bishop
Country Manager Sugar Beet UK
Phone: 01763 207304
Mobile: 07717 844441
ben.bishop@kws.com

Martin Brown
AgroServices Manager Sugar Beet UK
Phone: 01763 207321
Mobile: 07972 647224
martin.brown@kws.com