

CONVISO® SMART – the KWS manual for SMART growers

SEEDING
THE FUTURE
SINCE 1856

KWS





KWS – Seeding the future:

With our CONVISO® SMART varieties we are supplying the key component for the new standard for weed control in sugarbeet.

The KWS AgroService provides you a guidebook for the professional use of the CONVISO® SMART system. In case of further questions, you are always welcome to contact us:
sugarbeet@kws.com



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the new standard
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CONVISO® SMART – the new standard in weed control

- CONVISO® SMART provides innovative options for weed control in sugarbeet worldwide since 2018.
- The system is successfully established in more than 25 countries.
- The system is based on 2 components:
 - SMART KWS varieties, bred by KWS, specifically tolerant to CONVISO® ONE
 - CONVISO® ONE herbicide developed by Bayer (containing Foramsulfuron and Thien carbazone-methyl)



Get the power with CONVISO® SMART:



SMART KWS varieties

Bred with classic breeding methods

Specifically tolerant to CONVISO® ONE

With best crop safety to CONVISO® ONE

With the same variation in other characteristics like classic varieties

Utilize full yield potential

CONVISO® ONE

Broad weed control spectrum

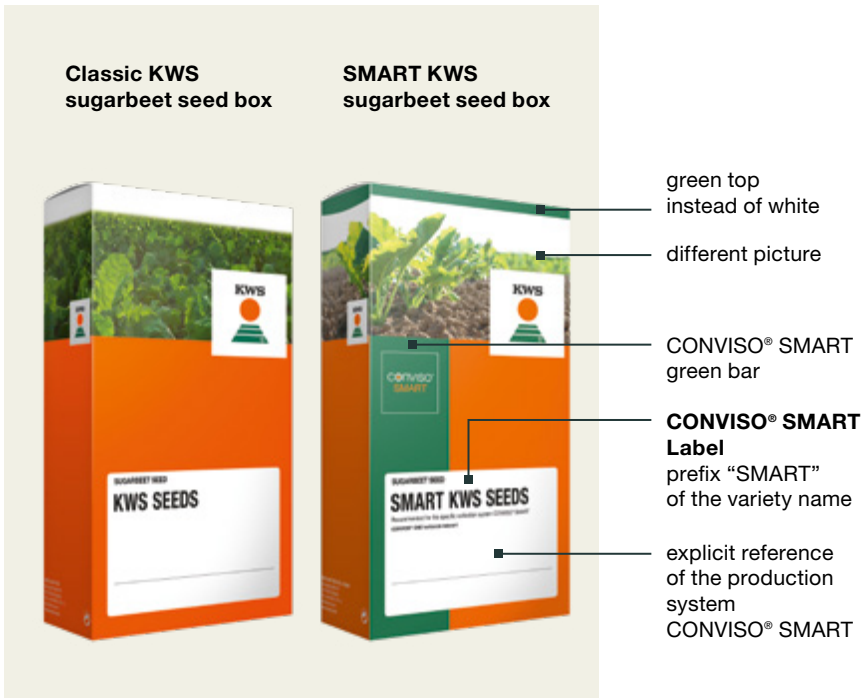
Strong against hard to fight weeds and weed beet

Fewer herbicide applications

Mixable with classic sugarbeet herbicides

Innovative weed control

How can I distinguish between SMART and classic KWS seed?

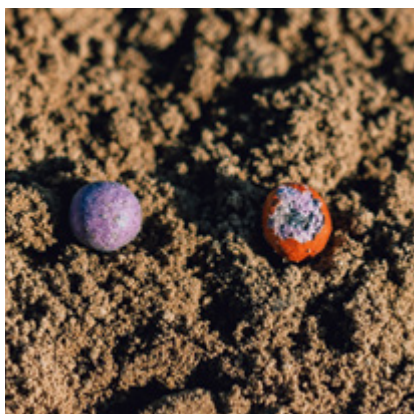


SMART KWS seed will come in a seedbox good to distinguish from the classic seedbox.



Do not mix SMART KWS seed and classic sugarbeet seed.

SMART KWS seed:
Purple inner color





Classic KWS seed:
Grey inner color



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

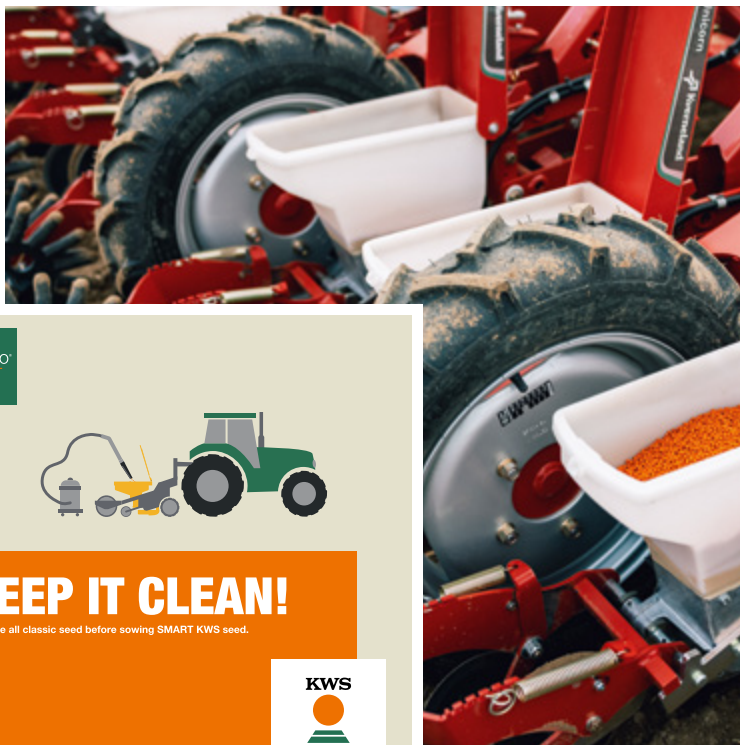
Can I mix classic seed with SMART KWS seed?

- 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 sugarbeet are fully susceptible to the herbicide CONVISO® ONE and thus will be seriously harmed if treated.

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



CONVISO® ONE can only be applied on SMART varieties. Stay with the system and choose the correct herbicide.



conviso
SMART



KEEP IT CLEAN!

Remove all classic seed before sowing SMART KWS seed.

KWS

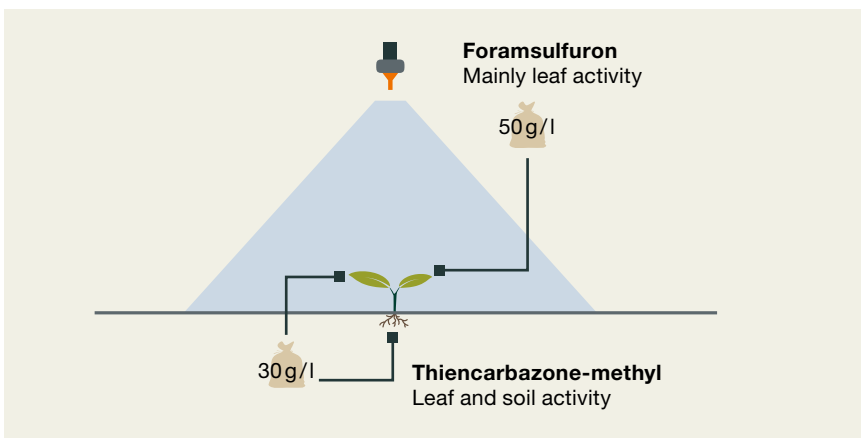


Keep SMART KWS seed separate from classic sugarbeet seed. Don't mix the seed in the drilling machine.

What are the basics of CONVISO® ONE?

CONVISO® ONE ...

- is a post-emergence ALS herbicide (HRAC 2/B*).
- contains two active ingredients in an oil dispersion (OD) formulation.
- has a registered application window from cotyledon stage (BBCH 10) until 8 true leaves (BBCH 18) stage of sugarbeet.
- can be used in a split (2×0.5 l/ha) or single (1×1.0 l/ha) application.
- can be mixed or used in a sequence with every other registered sugarbeet herbicide.



What is the correct application timing for CONVISO® ONE?

	CONVISO® ONE		Classic herbicides
	Split application	Single application	
Indicator weed	Fat hen* (<i>Chenopodium album</i>)		Any weed
Timing	max. 2 true leaf stage of fat hen	max. 4 true leaf stage of fat hen	Cotyledon stage of weeds
Number of applications	2 × 0.5l/ha	1 × 1.0l/ha	3–6

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



- **Correct timing is key for the success of the CONVISO® SMART system.**
- **Always follow the growth stage of the indicator weed fat hen (*Chenopodium album*).**

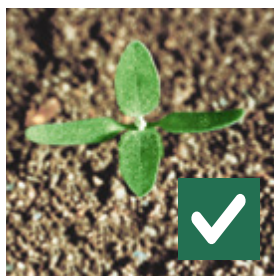
What is the standard application recommendation?

Split application $2 \times 0.5 \text{ l/ha}$

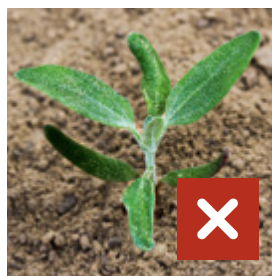
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Too small



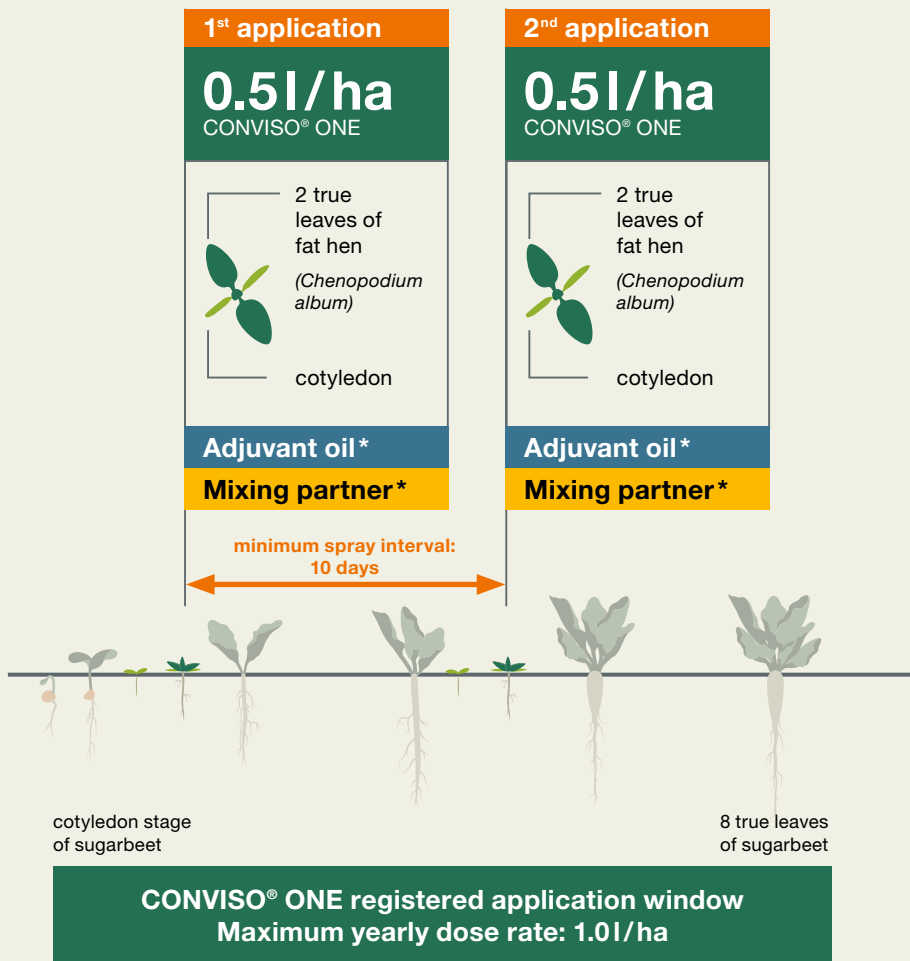
Correct:
2 true leaves of fat hen



Too big

- **1st application:** When the first plants (not the average weed population!) of fat hen (*Chenopodium album*) in the field reach the 2 true leaf stage (BBCH 12).
- **2nd application:** When new emerging plants of fat hen reach the 2 true leaf stage, but with a minimum interval of 10 days after first application.
- No fat hen in the field: apply when the first plants of other weed species reach max. 2 true leaf stage (BBCH 12).
- Dry and cold conditions: please note our recommendations on page 18.

How do I apply the split application correctly?



CONVISO® ONE
herbicide application

*Country specific recommendations apply

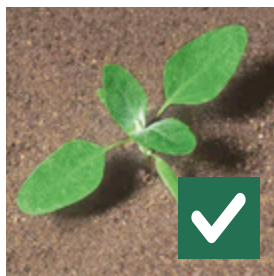
What is the recommendation for late applications?

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

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Too small



Correct:
4 true leaves of fat hen



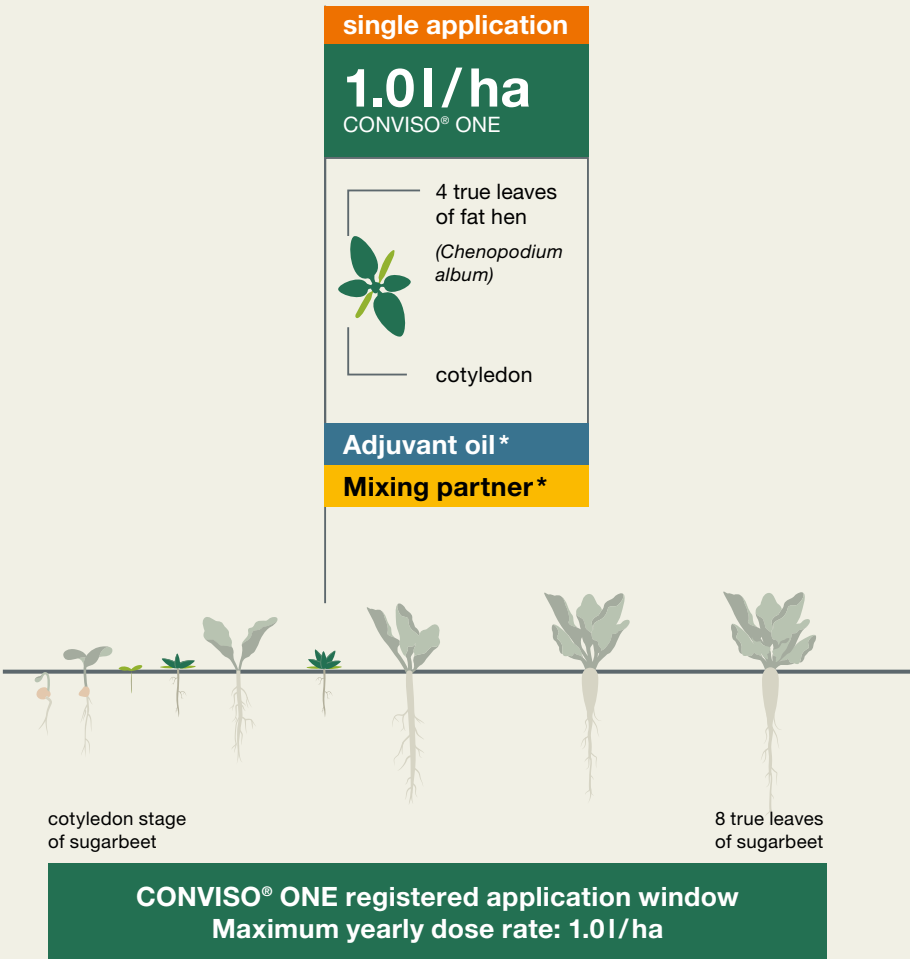
Too big

- **Correct application timing:** When the first plants of fat hen (*Chenopodium album*) reach 4 true leaves (BBCH 14).
- No fat hen in the field: apply when the first plants of other weed species reach max. 4 true leaf stage (BBCH 14).



The single application is recommended for more experienced growers, as the split application offers a better control against later emerging weeds in most cases.

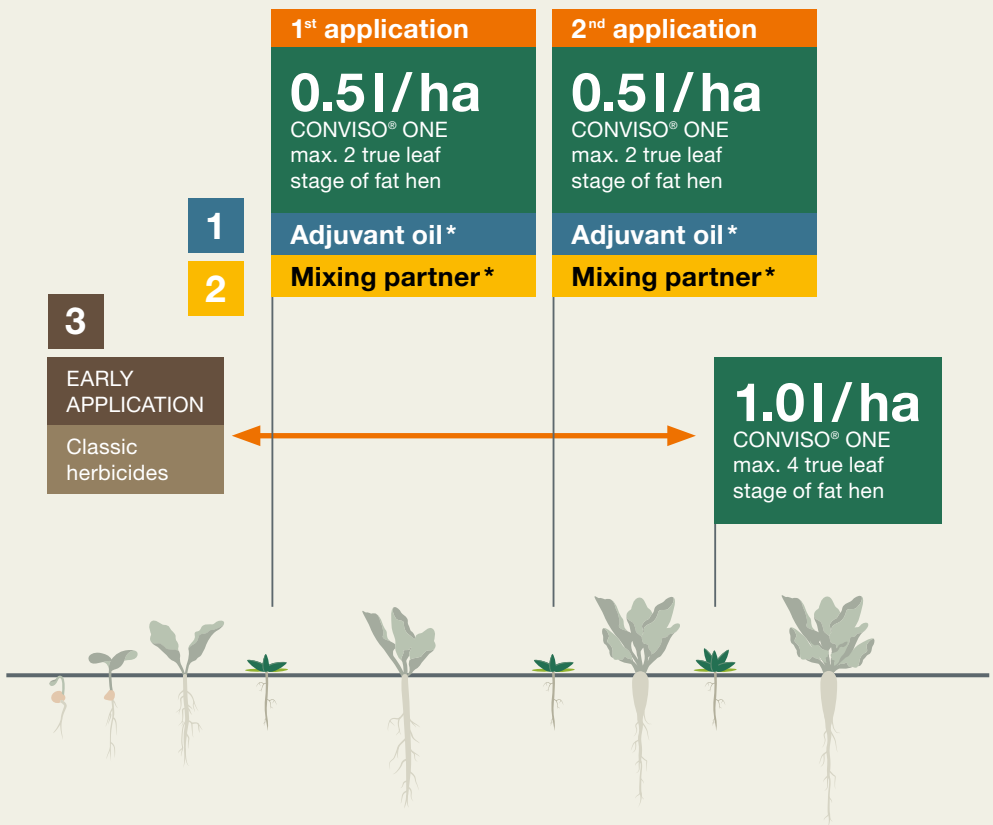
How do I apply the single application of CONVISO® ONE correctly?



CONVISO® ONE
herbicide application

*Country specific recommendations apply

How can I boost my CONVISO® ONE application?



*Country specific recommendations apply

1 Use adjuvant oil:

- Adding 0.5 – 1.5l/ha/ha oil to your CONVISO® ONE application increases herbicide uptake and improves efficacy, e.g. against hard to fight weeds, large weeds or in dry/cold conditions.

2 Use a non-ALS mixing partner:

- Adding a leaf-active mixing partner to your CONVISO® ONE application increases the efficacy, e.g. against hard to fight weeds, large weeds or in dry/cold conditions.
- Including other (non-ALS) actives contributes to good resistance management.

3 Use a sequence:

- Applying a classic herbicide (mixture) pre-emergence or early post-emergence controls.
 - The first flush of weeds (esp. under dry/cold conditions) and
 - Hard to fight weeds, e.g. *Veronica sp.*

How can I maximize the effect of CONVISO® ONE under dry and cold conditions?



Our recommendations:

- Split applications lead to better results.
- Adding adjuvant oil: 0.5–1.5 l/ha per application.
- Adding classic herbicides: leaf activity counts! These can be used as a mixing partner or in a sequence.
- Apply second application at second wave of emerging weeds – but don't prolong the spray interval if the first application doesn't show full efficacy.



Dry and cold conditions lead to reduced herbicide uptake and slow down allocation of the herbicide in the weed.

What are the main hard to fight weeds controlled by CONVISO® ONE?



Fool's parsley
(*Aethusa cynapium*)



Velvet leaf
(*Abutilon theophrasti*)



Ragweed
(*Ambrosia artemisiifolia*)



Annual mercury
(*Mercurialis annua*)



Knotweed
(*Polygonum spp.*)



Johnson grass
(*Sorghum halepense*)

CONVISO® ONE
herbicide application

Further weed species:

- Common amaranth (*Amaranthus retroflexus*)
- Fat hen (*Chenopodium album*)

How to mix and apply CONVISO® ONE?

- **Shake the CONVISO® ONE canister well before opening (shake upside down).**
- If deposit is visible in the canister, make sure everything is well mixed before filling the sprayer.
- Entirely dissolve CONVISO® ONE before adding a mixing partner or adjuvant to the sprayer.
- Only add water to the canister for final rinsing.
- Recommended water volume: 200–400 l/ha.
- pH value of water: 5–7.
- Optimal temperature for spraying: 10–25 °C.
- Rain fastness: 4 hours.
- Reactivation of soil activity (thiencarbazone-methyl) by moisture: up to 18 days after application.



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

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



- Always clean the sprayer after use of CONVISO® ONE.
- When cleaning, follow the standard procedure for ALS-inhibitors 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 sugarbeet, as they will be seriously harmed.

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

CONVISO® ONE is a systemic herbicide being absorbed and then translocated through the plant. It is immediately effective after application, but symptoms take several days to become visible.

Weed symptoms:

- Once treated weeds stop growing.
- First visible effects will appear after approx. 5–7 days and include necrosis, yellowing and stunting of the weeds.
- 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

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



SMART control of late emerging weeds & grasses

Optimal soil activity

- + High soil moisture
- + Low organic matter
- + Mild temperatures

- Duration of soil activity of CONVISO® ONE is usually between 10 and 20 days after application.
- 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.

Which crops are suitable after CONVISO® SMART sugarbeet?

After crop failure

e.g. frost, flooding in the same spring

Autumn sowing

- SMART KWS sugarbeet
- Corn (after ploughing)

- Winter wheat

March

April

May

[...]

Sept

Oct

Nov

Spring sowing following year

- Spring wheat
- Spring barley
- Corn
- Peas
- Field beans
- Sunflowers
- Soybeans
- Potatoes (waiting time 1 year*)
- Spring oilseed rape (waiting time 1 year*)
- Mustard (as green manure)

[...]

March

April

*after application of CONVISO® ONE

How to keep the CONVISO® SMART system productive?

Future productivity starts now!



Maintain the full power and durability of CONVISO® SMART on your fields. Your strategy comprises the whole crop rotation:

- Optimize weed control with an intelligent combination of herbicide use and agronomic measures.
- Maximize your long-term activity of CONVISO® ONE with smart resistance management strategies.
- Minimize the classic weed beet population and don't build up new weed beet with efficient bolter control.

What shall I do with bolters of SMART KWS varieties?

Target: leave 0 bolters on the field!

- If bolters appear – pull them, like in classic sugarbeet.
- 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.

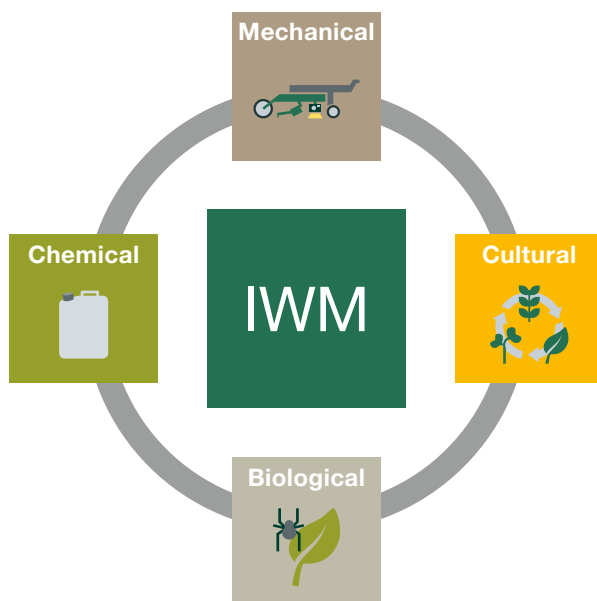


CONVISO® SMART is the one-time chance to clear your field from classic weed beet.



Integrated Weed Management

The base for a **SMART** weed control



Integrated Weed Management (IWM) lays the foundation for your professional CONVISO® SMART sugarbeet cultivation.

Your key to success is the combination of **chemical**, **mechanical**, **cultural** and **biological** IWM measures which fit best to your situation.



Diversity is the key!

IWM gives you the advantages of:

- Reducing the risk of herbicide resistance development.
- Ensuring the longevity and productivity of the CONVISO® SMART system.
- Keeping your whole crop production system sustainable.



Make sure not to rely on one measure only – diversity is your best weapon for successful and sustainable weed control!

What are the four principles of IWM?

Chemical



- Use different herbicides with different modes of action.¹
- Maximize herbicide efficacy with:
 - full dose rate
 - correct application timing
 - optimal application conditions
- Avoid overusing other ALS-inhibitors in your crop rotation after SMART sugarbeet.
- Support your IWM with a non-ALS herbicide as a mixing partner or in a sequence.

Cultural



- Keep your crop rotation diverse by integrating winter and spring crops.
- Use cover crops to reduce weed pressure, fix nitrogen and reduce nematode pressure.
- Keep your crop competitive by ensuring good crop establishment.

¹Mode of action = way in which herbicides control weeds

Mechanical



- Maximize the use of different mechanical weed control measures in the crop rotation.
- Start clean before sowing:
 - Deep soil cultivation > 10 cm (e.g. ploughing) can reduce weed populations
 - Shallow soil cultivation: stimulates weed germination, can be used in false seedbeds

Biological



- Biological weed control is the use of an organism or biological process to suppress weed growth.
- Commercial products are not available yet, but development in this area is ongoing.

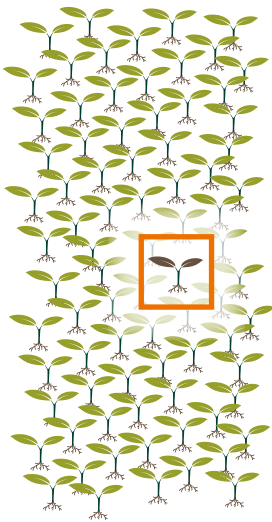


Efficient weed management is in your hands: choose the best strategies based on the weed situation in your fields.

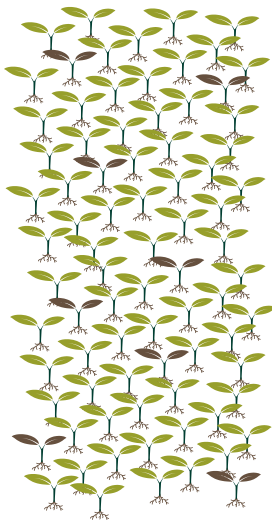
Why should I rotate the herbicide mode of action and use non-ALS mixing partners?

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.

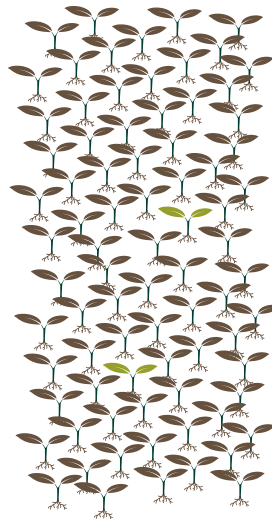
Normal population



Continued selection

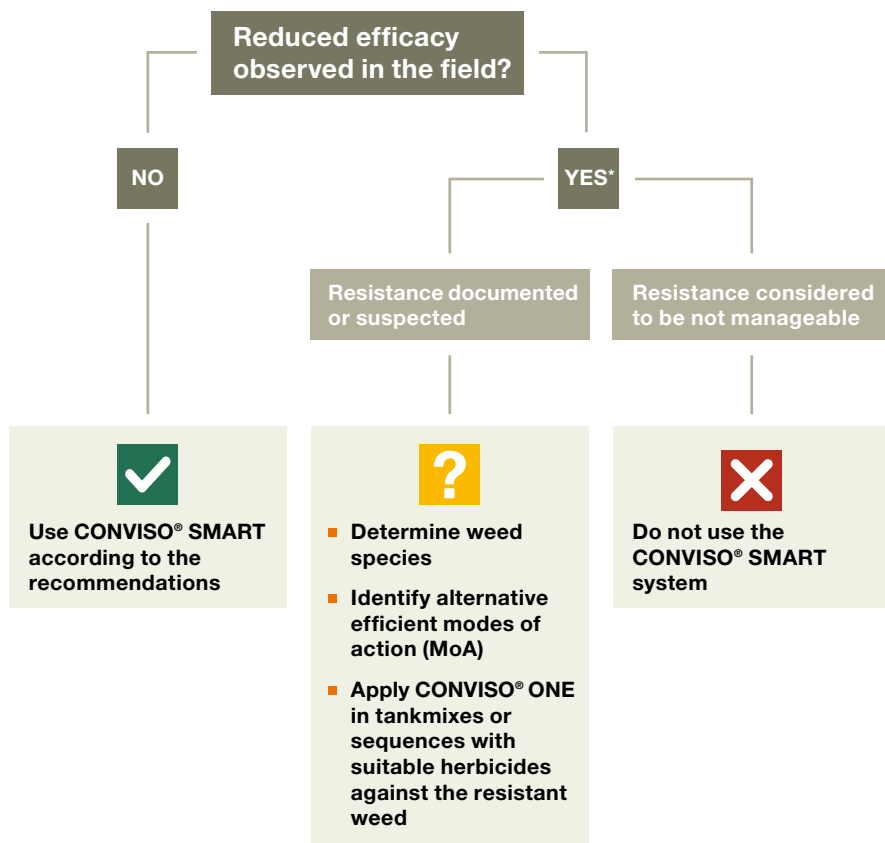


Resistant population



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

What shall I do if I suspect resistant weeds?



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

*For further advice please contact your KWS consultant.

What shall I do about CONVISO® SMART groundkeepers?

Groundkeepers



- If groundkeepers of SMART varieties sprout in the following crop, control them with a non-ALS inhibiting herbicide. In trials, hormone-based herbicides have shown an effect against groundkeepers. Please contact your local KWS consultant for further information.



Groundkeepers need to be prevented from bolting and potentially setting seed.

Your checklist for a successful CONVISO® SMART cultivation:



Keep SMART seed and classic seed separate (further info on page 8/9).



Follow our recommendation for CONVISO® ONE application (further info on page 12 ff).



SMART bolter management is key (further info on page 27):

- Pull bolters early for highest efficiency.
- Leave no bolters in the field.



Integrated Weed Management (IWM) supports your sustainable sugarbeet cultivation (further info on page 30/31):

- Respect a diverse crop rotation.
- Rotate different herbicide modes of action in the crop rotation.

CONVISO® SMART integrated in myKWS

Get your exclusive CONVISO® SMART advice and special services in the myKWS App to ensure a SMART and successful sugarbeet cultivation.

Your benefits:

- **Financial support** in case of resowing with the KWS BeetSeedService.
- **Agronomic advice** about the sugarbeet cultivation with CONVISO® SMART.
- **Decision support** for the CONVISO® ONE application.
- **24/7 growing advice** with the digital Grower Manual.



Download the myKWS app directly:
www.kws.com/gb/en/mykwsapp/





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 information contained in this Grower Manual is intended for an international audience and serves educational purposes only. It is not and shall not be construed as an offer to sell. Please note that some information represented herein may be subject to specific legal regulations, restrictions or prohibitions in certain countries. Products may not be available in every country, or registered uses, trade names and formulations may differ. For specific product information and recommendations, please refer to KWS or its representatives in your country.

