

## Econventional Farming

Rethink weed control

**ZÜRN** TOP CUT collect

**SEED TERMINATOR** 

Discover our  
new solutions for  
mechanical weed  
management!

SEED TERMINATOR



PROFI CUT DIRECT CUT HEADER



SUNFLOWER ATTACHMENT





# ZÜRN TOP CUT collect

## Econventional Farming

Combining the best of both worlds - the future of sustainable agriculture

Agritechnica 2019 - the worlds leading trade fair was the kickoff for our new product line of mechanical weeding technology. Never before we had this many new products to be presented.

We fully committed to rethink weed control. Some of our newly developed machines form a whole new product category which is not available by any other manufacturer on the market so far.

These solutions include clever ideas from ecological farming and conventional practices - combining the best of both worlds. The headline for this new category was found quickly: **ECONVENTIONAL FARMING.**

Our **ECONVENTIONAL SOLUTIONS** also forge a link to our sister company **garford**. With the invention of the camera based control for high precision guided hoes, **garford** is a true pioneer of mechanical weed control.

With the precise, effective and reliable camera technology, hoes are getting back in the fields of conventional farming operations.

The **SEED TERMINATOR** offers new opportunities in conventional farming to fight herbicide resistance. For ecological agriculture, it allows a whole new level of weed control.

And there is one more thing that unites our

# #ECONVENTIONAL





**ECONVENTIONAL SOLUTIONS:** All these ideas have been developed in the practice with a close connection to the field.

All this was just possible thanks to the clever minds behind these ideas. Innovative and passionate people from various countries of the world who are deeply rooted in agriculture. Together, we brought the products to a series maturity.



“With our **ECONVENTIONAL SOLUTIONS**, we want to encourage ecological and conventional farming to grow together.”

Rolf Zürn, Managing Director



# ZÜRN TOP CUT collect

Keeping fields clean



## The „weed harvester“

### New technology for mechanical weed control

The weed harvester **TOP CUT collect** is a tool for mechanical weed control in case of herbicide resistance and to make organic farming approaches possible.

- Grasses and other high-growing weeds are cut precisely just above your crop.
- Collecting and removing the weed seeds from your fields improves the field hygiene reliably.

Field tests confirm a reliable reduction of the weed seed bank in the ground. Even resistant weeds can now be fought on the long-term.



#### Cutting

The double-cut knife and special helical reel work gently to collect all seeds. Working widths of 9, 12 and 18 m are available.



#### Collecting

Conveyor belts transport the weed seeds into a hopper with high-dump system. The boom can be folded hydraulically for road transport.



The **ZÜRN TOP CUT collect** cuts off the top of weed plants and collects the seeds in a bin. This improves field hygiene significantly.



Before and after the **TOP CUT collect** in herbicide resistant black-grass. A clean cut for a clear difference.

# CUT AND COLLECT THE WEEDS

## A solution for (resistant) weeds

Especially intensive farming can lead to weeds developing resistances against herbicides. Common methods are no longer effective and many chemicals lost their acceptance in society.

With this background, **ZÜRN HARVESTING** and french farmer and technician Romain Bouillé developed an entirely new approach for mechanical weed control.

### Reducing the weed seed bank

The weed collector **TOP CUT collect** is an intelligent combination of two tasks: Cutting the weed tops above the crops and collecting this material which contains the weed seeds. Hygiene in the field is improved sustainably by reducing the weed seed bank in the soil.

Different scientific studies show that up to 40% of the weed seeds are shedding before harvest. It's therefore very effective to cut off and collect the top of these weeds before harvest. By doing this, the cycle of weeds getting into the seed bank is interrupted. This is also shown by the perennial field trials in France.

When cutting the grass weeds in their generative growth, the remaining plants are drying and not getting any new shoots. This is beneficial for harvest with a combine in heavy weed patches. This new approach is also a great opportunity for organic farms to extend their mechanical weeding toolbox.

This new implement is tractor-drawn with an own axle. The technological concept consists of two booms with a double-cut system and a cross conveyor belt behind. A helix-shaped reel gently pushes the weeds from the knife section to the conveyor belt to avoid any losses at this critical point. To get the dangerous load safely into the bin, another conveyor belt collects the material centrally.



For easy road transport, the booms are folded in hydraulically.

Currently, the **TOP CUT collect** is available with up to 18 m working width. For road transport, both booms are hydraulically folded in. They're sitting close to the hopper to stay below 3 m transport width.

### Collecting the weed seeds

The **TOP CUT collect** is especially strong when fighting resistant grass weeds like black grass, apera, wild oat or ryegrass. Furthermore, it can be a game changer in root crops which take some time to close the "canopy".



*You want to see the ZÜRN TOP CUT collect in the field? Just scan the QR-Code!*



# Rethink weed control

Technical focus on the **TOP CUT collect**

## Boom

The two booms with 9 or 12 m working width are hydraulically folded in to a transport width below 2.5 m.

## Tractor attachment

The tractor-drawn machine is mounted in the lower links and connected to the tractor hydraulics. A central operating terminal is used to control the machine.

## Helix-shaped special reel

The reel gently pushes the weeds to the knife and transfers them onto the conveyor belt safely.

## Double-cutting knife system

The horizontal double-cut knives cut the weeds precisely and reliably just above the main crop.

## Central conveyor belt

The central conveyor belt is moved to working position hydraulically and collects the material from both cross conveyor belts. To fill the bin perfectly, it can be adjusted in speed.

## Large bin

The collection bin with 7,000 litres has a hydraulic high-dumping system.

## Narrow tyres

Simple, stepless manual track width adjustment on the axle.

## Height control

The cutting height is hydraulically adjustable from 30 cm to 160 cm above ground level. Both booms are guided by gauge wheels.

## Cross conveyor belt

The conveyor belts on both booms transfer the material to the centre. To avoid losses, all conveyor belts are sealed on the sides.



# #RETHINKWEEDCONTROL

# Demo-Tour

## Various applications of the TOP CUT collect



### Wild Radish in Summer Wheat

The weed infestation with wild radish is reduced in a summer wheat crop. This reduces the competition for growing space for the crops. The field can later be certified for seed multiplication or as high quality baking wheat.



Scan the QR-Code to watch the machine in the field!



### White Goosefoot in Sugar Beet

The white goosefoot (*Chenopodium album*) is cut above a heavily weeded sugar beet crop. This reduces the competition for growing space for the crops. Sugar beet reacts with severe yield losses to high weed pressure. In addition, the usual harvesting technologies reach their limits when there is heavy weed growth.



Scan the QR-Code to watch the video!



### Black Grass and Red Poppy in Wheat

The seed-bearing parts of black grass and red poppy are cut just above a wheat crop. This effectively reduces the amount of weed seeds in the soil. Without the treatment, up to 1,000 seeds per plant would return to the cycle, especially in the case of black grass.



Wanna see the TOP CUT COLLECT in field operation? Scan the QR-Code!



### Rye in Summer Wheat

The volunteering green rye is removed from a summer wheat crop. The field can later be certified for seed multiplication or as high quality baking wheat.



Scan the QR-Code to watch the video!

# The trend towards a better field hygiene

## ZÜRN weed harvester scoops SIMA Award

The **TOP CUT collect** weed harvester from **ZÜRN HARVESTING** received the SIMA Innovation Award in the special 'Agro-Ecological Transition' category.

The prestigious prize awarded by the innovations committee of one of the leading international farm machinery shows, underlines the innovative and forward-thinking character of this innovation for an environmentally sound agriculture.

### Rethink weed control

One of these solutions is the **SEED TERMINATOR** which destroys weed seeds inside the combine by using multi-stage hammer mills so the weeds are no longer able to germinate. In addition to that, the vision guided hoes of our partner company **garford** are ideal additions to this product line. Relying on a high-precision camera system, the **garford** hoes are able to work close to and extremely accurately along the crop rows. The **inrow** models use intelligent software in combination with a high-tech camera for even inter-plant weeding.



“We are extremely happy about receiving the prize which is a special success,” says Rolf Zürn. “It reflects on the importance of mechanical weed control and the forward-thinking nature of this technology for all of Europe. The **TOP CUT collect** is one machine in our new product line that aims at interfacing organic and conventional farming schemes. We term such developments ‘econventional solutions,’” explains Rolf Zürn.



Watch the SIMA special award winning technology in the field!

The weed harvester **TOP CUT collect** from **ZÜRN HARVESTING** and Bouillé Concept cuts the weed above the crop stand and collects the weed seeds in a hopper - for a significant improvement of field hygiene.



#SIMAPARIS





## ROMAIN BOUILLÉ



France

### The inventor

Romain Bouillé is the son of a farmer, inventor and an excellent mechanic from the central arable region of France. The time he spends on the sugarbeet harvester and combine is well used. Beside machine operation, Romain uses this time to come up with new ideas for a future-proof agriculture.

### Roots

Right where the Champagne merges with the region of Brie-Beauce. The farm of Romain is located approximately 80 km south-east of Paris in the breadbasket of France. The farm cooperation works on 1,200 ha with cereals, rapeseed and sugar beets as main crops.

### The challenge

Agronomists in this intensive farming area are faced to high weed pressure and growing numbers of herbicide resistance. This difficulty was raising to a higher power over the last years.

### The solution

Looking at the growth behaviour of weeds and crop plants, Romain got the idea of a machine to cut and remove the weed seeds just above the crop. With up to 18 m boom width and a precise height control, the weed tops are not only cut but also collected. Thanks to experience in cutting systems, conveyor belts and transportation, **ZÜRN** was the ideal partner to implement his ideas.

French farmer Romain Bouillé is the inventor of the **TOP CUT collect**, which he brought to series production together with **ZÜRN HARVESTING**.





# THE FUTURE OF HARVEST WEED SEED CONTROL

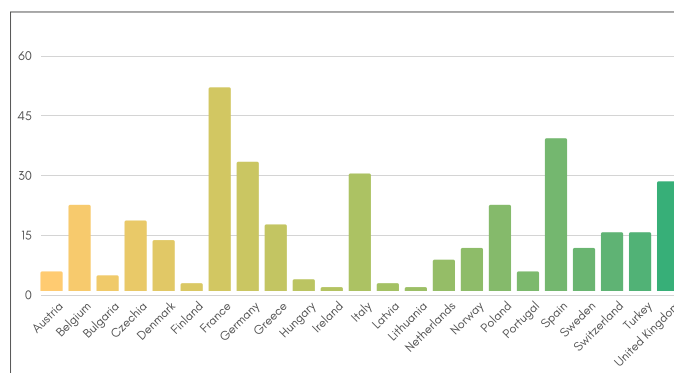
## Weed Management starts at harvest

Harvest weed seed control (HWSC) aims to destroy weed seeds that have escaped in-season control at harvest. It focuses on the weed laden chaff fraction from the back of the combine harvester and killing or removing the weed seeds present. This approach has been widely used in Australia to manage herbicide-resistant weeds and reduce the weed seed bank.

Every farmer has weed seeds at harvest. Why spread them when you can terminate them? Using mechanical weed control can stop the combine harvesters unintended role as a weed seeder. Besides the general battle on weeds, some particular challenges led to broad adoption of HWSC.

### Herbicide resistance

Many weeds have a similar lifecycle to broadacre crops which makes the combine harvester an unintended weed seeder for potentially herbicide resistant weeds that have escaped in season treatment. Herbicide resistance has global significance with 259 weed species identified as resistant to 167 herbicides in 93 crops in 70 countries [1]. All weed scientists agree that there is an overreliance on chemistry to manage weeds and a diverse approach that includes mechanical controls is required for the long term: “Incorporating non-herbicidal methods of weed control in combination with strategic herbicide use is fundamentally the way forward” says David Brunton with University of Adelaide’s Weed Science Research Group.



Number of herbicide resistant weeds in european countries. [1]

### Reducing the seed bank

Every year, weed seeds and volunteer grain enter the seed bank in your soil. According to Dr. Nick Berry, 80% of them pass the combine harvester before [2]. This offers a great opportunity to break the cycle and reduce the weed pres-

sure on a sustainable basis instead of having the same problem over and over again. Thinking long term and preserving the farming land and chemistry for the future generations is key to being profitable season after season.

### Stop the spread of weeds

HWSC measures seem to be useless when it comes to early shedding weeds like Wild Oats since most seeds are on the ground already before harvest. However, these weeds are still harbouring some seeds which enters the combine harvester. Due to their physical characteristics, these weed seeds often end up in the tailings return system and the machine then eventually spreads them along the track. HWSC measures are therefore not eliminating a weedy patch but work to stop the spread of weed seeds so next years weed burden is not as bad.

### SEED TERMINATOR development

For many years, Australian farmers were using HWSC tactics like narrow windrow burning, chaff lining, chaff tramlines, chaff carts and the bale direct system. All of them are labour-intensive, slow down harvest a lot or are ineffective. Furthermore, valuable nutrients are removed from the fields. Some years ago, impact mills came up as a revolutionary concept and led to the development of **SEED TERMINATOR**.

### Prototype

The first prototypes of hammer mills were integrated into combine harvesters in 2012 as part of Dr. Nick Berry's thesis "Optimisation of an impact mill that processes chaff exiting a combine harvester to devitalise annual ryegrass (*Lolium rigidum*) seeds" [2]. Nick established the theoretical basis and functions to design a multistage hammer mill which is optimised to kill weed seeds. Much effort, dedication and even more calculations were needed for today's aerodynamic, tungsten coated mill technology with reduced power demand and a long-lasting performance.



The reliable and efficient mechanical drive ensures that power is not wasted but used to kill weed seeds.

### Lessons from 5 harvests

In the maiden year 2016, a proof of concept was the main focus with 9 machines operating across Australia on three different makes (John Deere, Case, New Holland) in various crops and conditions. A graveyard of power transmission parts pushed the team to redesign the driveline for efficiency and reliability. The second year 2017 was used to proof the design with 32 machines getting 6000+ hours on the clock. High wear when cutting low in sandy soils was discovered to be the main issue that year, resulting in the tungsten coating of all heart components. With 50 prototypes for 2018, kill for kilowatt was the target. At a constant kill rate, the team was able to reduce the power requirement by 31% which also improved the wear characteristics again. For harvest 2019, the integration into different combine makes and models was optimised as well as the "design for manufacture". To improve performance in European conditions, we developed the High Capacity Screens for harvest 2020. Even at high moisture with green weeds, these screens allow high throughputs. In 2022, over 600 machines are in the field with **SEED TERMINATOR** being tested not only in Australia but also North America and Europe.

The technology is colour blind and can be fitted to most class 7-10 harvesters, currently there is a solution for John Deere S-Series, Case Axial-Flow, New Holland CR, Claas Lexion and Massey Ferguson 9500.

- [1] Heap, I.: International Survey of Herbicide Resistant Weeds, 2019. Online verfügbar unter [www.weedscience.org](http://www.weedscience.org)
- [2] Berry, N.: Optimisation of an impact mill that processes chaff exiting a combine harvester to devitalise annual ryegrass (*Lolium rigidum*) seeds. Dissertation, University of South Australia, 2014.



Mill speeds, bearing and gearbox temperatures, vibration and blockage sensors are visualised in the operator terminal.

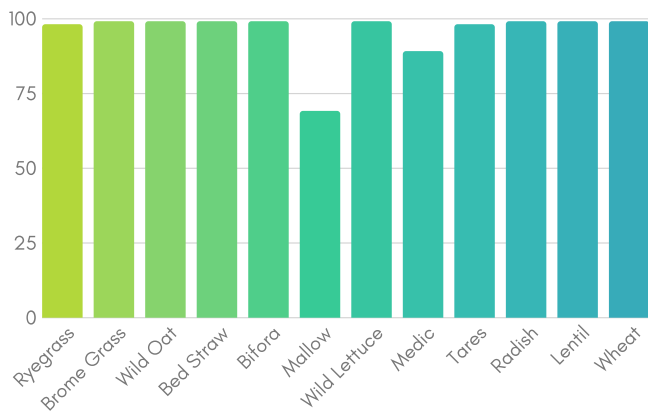
# SEED TERMINATOR

[ Multi-stage Hammer Mill ]

The **SEED TERMINATOR** is a simple attachment to the combine harvester that destroys weed seeds before they become weeds.

## 99 % KILL

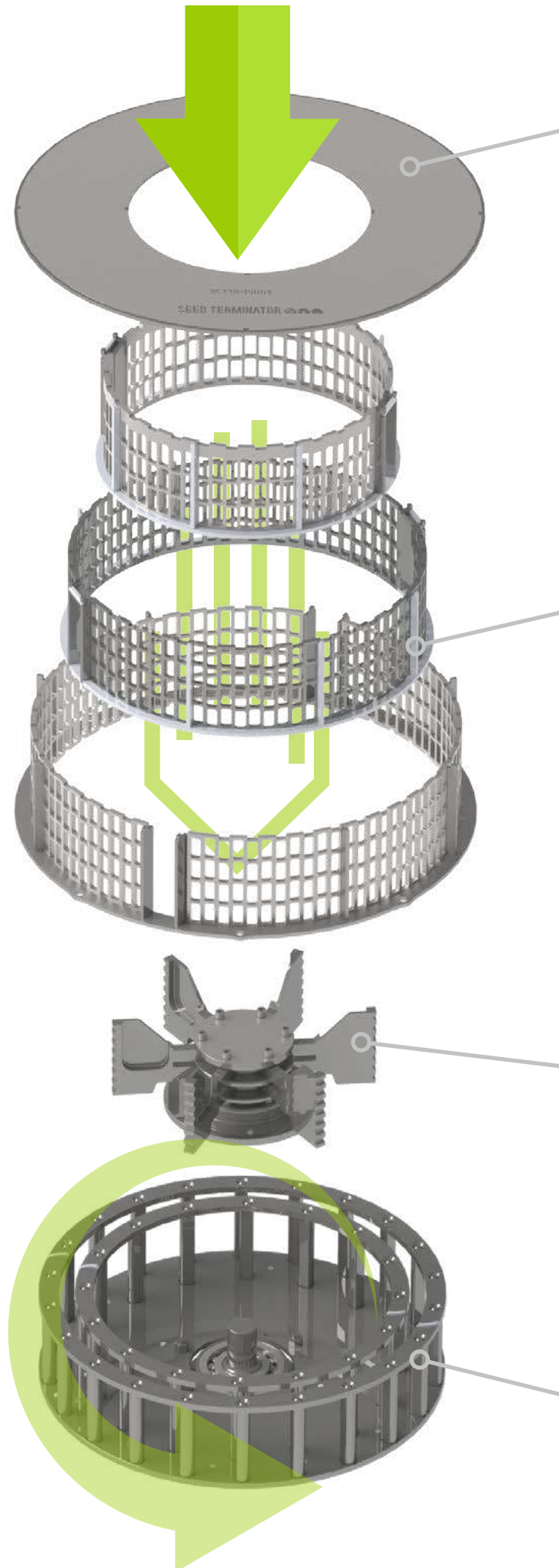
Precision-machined mills proven to kill 99% of weed seeds



▲ South Australian Grains Industry Trust funded research into weed seed control at normal operating speeds & settings. Stationary efficacy testing for Model Year 2017

## FUTURE PROOF TECH

We aim for this to be a future proof technology platform, able to slot in the latest mill technology available in 2, 5 or 10 years' time.



## AERO IMPACT 3

At 300km/hr would you rather be in a Ferrari or a truck?

Our mill tech is aerodynamic, reducing turbulence which is wasted power that can't be used to kill seeds.

## SCREENS 60% THICKER

Precision machined out of specially sourced Australian Steel: New screens were designed around increasing capacity, while maintaining the high kill and improving wear. The screens are made to last and they won't break the bank.

## HARDENED STEEL FLAILS

Precision machined out of specially sourced Australian Steel these flexible flails are tough as they come.

## ROTOR TUNGSTEN CARBIDE COATED

Aerodynamic profiled beater bar with tungsten carbide anti wear coating, individually balanced and serialised.

## STOP THE SPREAD

You couldn't design a better weed seed spreader than a combine. It separates the grain out, then the weeds go round and round the tailings, distributing them nicely across the field. Stop the spread of weeds across your field while you drive the weed population down with **SEED TERMINATOR**.



## REAL-TIME MONITORING

Our in cab- display monitors:

- Mill speed
- Blockage sensors
- Wear vibration sensors
- Bearing gearbox temperatures



## MAGNET TRAY FOR CATCHING STEEL

Our patented Magnet Tray comes as standard because we know rocks aren't the issue, steel is.



## UPTIME WITH PADDOCK PROVEN TECHNOLOGY

With more than 600 combines in the field, the **SEED TERMINATOR** mechanical drive is well proven.



ADVANCED MONITORING SYSTEM:  
VIBRATION (WEAR) + BLOCKAGE  
+ BEARING CONDITION

## GRAIN CAPTURE OR WEED KILL? BOTH.

We work to create harmony between the combine and **SEED TERMINATOR** so you don't have to decide between capturing grain and killing weeds as you harvest.

## CLEANING SHOE PERFORMANCE IS UNAFFECTED.



**SEED TERMINATOR** causes no restrictions of airflow within the harvester cleaning shoe = confidence in the accuracy of grain loss checks = confidence in your harvester setup to minimise grain loss..



**NEW**

**150 HRS**

## AERODYNAMIC TUNGSTEN COATED MILL TECHNOLOGY.

for even wear, reduced no load power and long lasting performance.

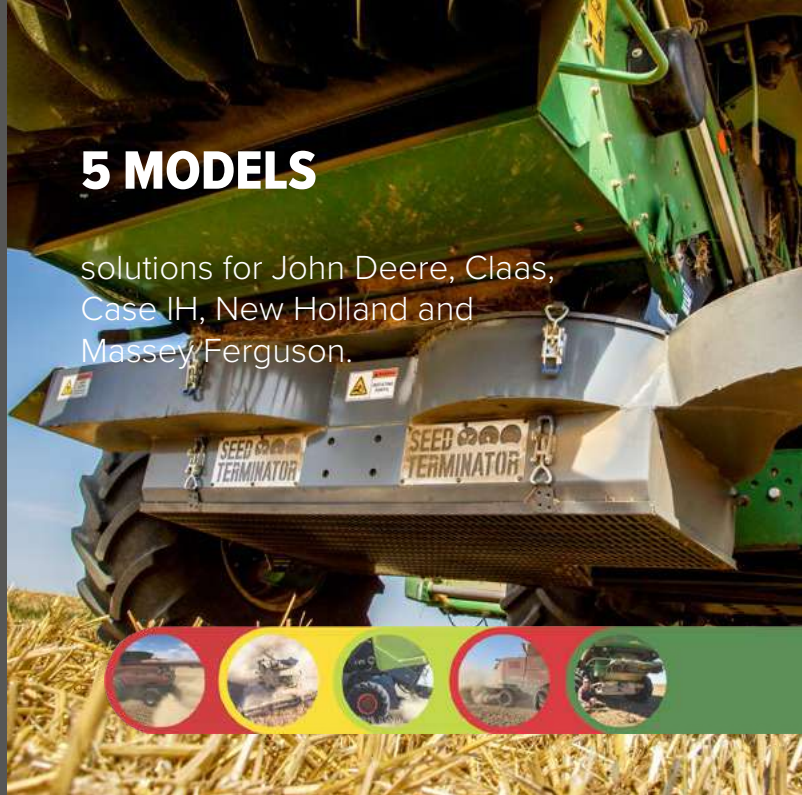
# PROVEN IN EUROPE

The **SEED TERMINATOR** has been extensively tested by independent institutes and is proven in European conditions.



# 5 MODELS

solutions for John Deere, Claas, Case IH, New Holland and Massey Ferguson.



HOW TO KILL A WEED SEED #1  
**CRUSH IT!**

HOW TO KILL A WEED SEED #3  
**IMPACT!**



HOW TO KILL A WEED SEED #4  
**SHEAR IT!**

HOW TO KILL A WEED SEED #2  
**GRIND IT!**

ONLY MILLS THAT  
**KILL REGARDLESS OF  
RPM & MOISTURE WITH  
4 MODES OF ACTION.**



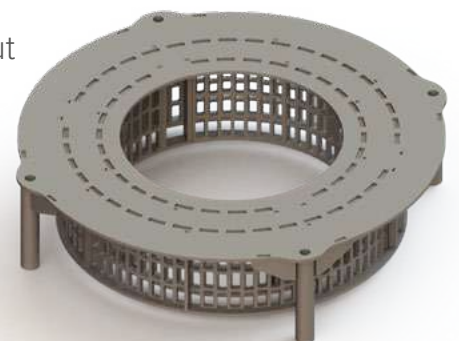
**2250-3000 RPM**



▲ TOP: CONTROL  
▼ BOTTOM: **SEED TERMINATOR**

# HIGH-CAPACITY SCREENS DESIGNED FOR EUROPE.

The special screens were developed to meet european requirements and operate in high moisture without trouble.





## DR. NICK BERRY



Australia

### The inventor

The Australian farmer, mechanical engineer and PhD has been completely focused for many years on generating engineering solutions to kill weed seeds in the combine. He started the **SEED TERMINATOR** business to get these solutions into the fields.



Dr. Nick Berry is a thought leader in conservational agriculture, an expert in Harvest Weed Seed Control (HWSC) and the inventor of the **SEED TERMINATOR**.

### Roots

His family runs a farm on Kangaroo Island in South Australia. Sufficient rainfall allow for fairly well yields in diverse crops.

### The challenge

Weed pressure in no-till agriculture and herbicide resistance are a big problem for agronomists. Especially regarding limited resources like water, weeds are a major restriction for remaining cropping strategies. Targeting weed seeds already during harvest (Harvest Weed Seed Control) is a common approach in Australia for many years. However, burning or collecting the chaff is impractical and not effective.

### The solution

**SEED TERMINATOR** is on the market in Australia for three years now. A multistage hammermill kills weed seeds which pass the combine which makes next year's problem not as bad.



## Harvest Weed Seed Control, simplified by Dr. Nick Berry

What the **SEED TERMINATOR** is about is reducing the amount of seeds that get put back on the ground to become weeds in the next year.

You know, you can do a great job with chemicals for that season, but the next season you are going to have keep applying the same amount of chemistry and it's a continuous process. What the **SEED TERMINATOR** does is it catches those seeds and it destroys them, makes them non-viable and next years' problem is not as bad as this years.

Dr. Nick Berry, the Australian inventor of the **SEED TERMINATOR** explains what is behind the new technology: "The multi-stage hammermill is our core technology and it's really the aero-impact that makes it unique."



Watch the video:  
Introduction to the  
Seed Terminator by  
Dr. Nick Berry.



# #HARVESTWEEDSEEDCONTROL



Scan the QR-Code  
to watch the video!

### Seed Terminator in Germany | Extremely moist harvest conditions

The **SEED TERMINATOR** kills almost all weed seeds in a combine harvester. Here, the **SEED TERMINATOR** is attached on a Claas Lexion 770 TT. This combine harvester is working on a large scale organic farm. Due to clover grass undersowing, the hammer mills have to cope with very moist material in the barley straw..





# SEED TERMINATOR IN EUROPE

## Dr. Nick Berry – Q&A

**ZÜRN** is glad to work with Nick Berry and the whole **SEED TERMINATOR** team on making agriculture future-proof. We share the same values which makes the cooperation special: Technical innovation meets a hands-on spirit with the customer in focus to get things going. Sustainable business practices in dealing with all business partners are a matter of course. We asked Nick some questions about the future of **SEED TERMINATOR**:

### What are your visions for the **SEED TERMINATOR** in the future?

The **SEED TERMINATOR** is in its fourth year, with lots of improvements being made. We aim for this to be a future proof technology platform, able to slot in the latest mill technology available in 2, 5 or 10 years' time. We will keep our focus on R&D to help farmers locally and globally with economic, innovative and reliable technology.

### Will **SEED TERMINATOR** completely replace existing methods like herbicides?

No, there will never be a "Silver bullet". It will create new opportunities e.g. in organic farming, but the idea is also to protect existing chemistry from overuse. Protecting herbicides instead of replacing them. Still, there will always be a selection of weeds and even mechanical weeding methods need to adopt respectively.

### What are the main differences in European and Australian conditions?

We did tests with **ZÜRN** and University of Hohenheim during harvest 2019 mainly in organic crops and proved that the concept works in European conditions with high weed pressure. The biggest difference is probably the moisture especially of the weeds which are still green during harvest. Despite the lower yields in Australia, the throughput was not a real difference since the machine is just driving faster with a bigger cutting width. The sieve load may be even higher in dry Australian conditions due to brittle straw.

# Harvest in Europe

## SEED TERMINATOR in European conditions



### Seed Terminator in Europe | Harvest in the UK

This is the **SEED TERMINATOR** attached on a Claas Lexion 760 TT combine harvester. Harvesting on a conventional farm in the UK with the high moisture harvest conditions so typical for England.



Scan the QR-Code to watch the video!



### Seed Terminator in Europe | Cutting herbicide use with the combine

The **SEED TERMINATOR** reduces herbicide use already at harvest. This is the **SEED TERMINATOR** attached on a John Deere S690 combine harvester on a conventional farm with high grain and straw yields in Germany.



Scan the QR-Code to watch the machine in the field!



### Seed Terminator in Germany | Harvest on an organic family farm

The **SEED TERMINATOR** kills weed seeds before they become weeds. This is the **SEED TERMINATOR** attached to a Claas Lexion 770 TT combine harvester in operation on an organic family farm in Germany.



Wanna see the SEED TERMINATOR killing weed seeds? Scan the QR-Code!



### Seed Terminator in Europe | Short harvesting window in Sweden

This is the **SEED TERMINATOR** attached on a Claas Lexion 540 combine harvester working on an organic family farm in Sweden. The short harvesting windows in the far north demands maximum reliability.



Scan the QR-Code to watch the video!



# TRIMMED FOR PERFORMANCE

## Direct cut header for harvesting of cup plant

Direct harvesting of biomass with the self-propelled forage harvester has been gaining increasing relevance for several years. Operators of biogas plants in particular are looking for extended crop rotations, new types of cereal and crop mixtures for energy production.

Various options for different crop types and changing harvesting conditions ensure that the **PROFI CUT** direct cut header is deployed in a versatile manner for harvesting.

### Harvesting cup plant is the supreme discipline

In practical tests the cup plant has proven to be the supreme discipline when it comes to harvester throughput capacity and cropflow with tangled plants. The benchmark for whole crop headers was therefore expanded to include this crop.

**ZÜRN** has added a special „silphie kit“ to its harvesting technology to optimise the harvesting of cup plant: A passive roller crop press (in place of the rigid crop deflector pipe) allows the plants to glide evenly into the header. Special paddles have also been added to the intake auger in order to pull in the crop with an even higher force.

Attaching the hydraulically driven side knives, with collision protection makes the **PROFI CUT** ready for cup plant in no time.

The correct harvesting time for cup plant also ensures that the harvesting technology is ideally utilised. This is between the end of August and the start of September before the main harvesting time for corn.

### All-round talent for various crops

Field experience proves the high feeding capacity of the **PROFI CUT** in high and dense biomass crops. This applies not only to cup plant but also the harvesting of further crops, such as sorghum and tall wheatgrass (Szarvasi) or crop mixtures, e.g. vetch-rye mix.



Cup plant has a striking yellow flowers. The permanent crop has huge biomass potential as a supplement to corn crop rotation.



Szarvasi grass



Alfalfa



Rye



Triticale



Vetch-rye



Cup plant



Sorghum millet



### Setting directions of working widths

- ▶ The **PROFI CUT** is a universal header that delivers perfect cuts in the direct harvest of biomass. The direct cut header is designed to manage huge masses of crop, no matter whether you are harvesting whole crop silage, vetch rye or cup plant.
- ▶ Its massive working width of 5.3 or 7 metres ensures the most powerful forage harvesters are supplied with volumes that suit their appetites. Yet also in low-yielding crops, PROFI CUT delivers tidy cuts at working speeds of up to 20kph.

### Made for challenging biomass harvests

- ▶ The cutter bar, intake auger and the driveline make a perfectly tuned system that ensures a consistent crop flow through the header.
- ▶ The large-diameter intake auger feeds the material directly into the forager. The unique design of the auger flights ensures a consistent feed to the pre-compression rollers.
- ▶ Adjusting the auger speed optimizes the crop flow and the throughput and ultimately the chopping quality – especially in difficult conditions.



#### Hydraulically lowered header transporter

Thanks to the hydraulically lowered header transporter, the **PROFI CUT** is loaded comfortably and you always arrive quickly and safely at your destination.



#### Made for the most powerful forage harvesters

The new **PPROFI CUT 530** and **PROFI CUT 700** whole crop headers are the perfect solutions for direct harvesting of biomass with John Deere, Claas, New Holland and Fendt forage harvesters.

# Sunflower extension

## The clever solution for sunflowers

Sunflowers have fragile stalks and heavy heads which require special care to cut out the risk of dropping.

The ideal solution for dependable sunflower harvesting is the special design of the pans which collect the heads preventing avoidable losses.

As the pans are fully integrated in a regular header, the combine is changed over to sunflower in no time at all.

# FAST CONVERSION



### Cost-effective option

The sunflower extension is the cost-effective solution for harvesting sunflowers. For fast changeovers, its pans form one integral and single-piece unit. Your grain header is ready to harvest sunflower in no time at all.



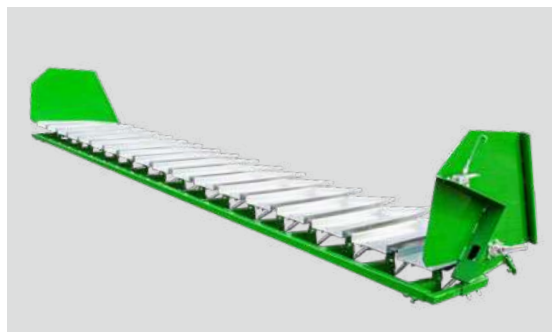
### Plastic pans

Thanks to a new design, the pans guide the heads more effectively into the combine. Manufactured from plastic, they make the extension much lighter and therefore increase header stability.<sup>5</sup>



### Reel covers

Covers for the reel tines preventing the heads from being spiked by the tines and optimise the crop feed to the cutter bar and auger.



### Straightforward and quick changeovers

Like the rapeseed table, the sunflower extension is one solid unit. Instead of attaching each pan individually, the extension is coupled to the header as one solid unit.



Suitable for CLAAS,  
JOHN DEERE,  
NEW HOLLAND and  
CASE IH headers

## The Single-Piece Sunflower Extension

### Easy and fast changeovers

- The pans and sides form one single-piece extension that is coupled to the header as one unit.
- Fast and easy attachment/removal thanks to two quick-lock mechanisms on either side, using the same attachment points of the rapeseed header.
- The pans are formed to avoid seed loss, feeding the flowers to the cutting system irrespective of row spacings.
- The new plastic pans reduce the weight and boost header stability.<sup>5</sup>
- The guards on the cutter bar are covered completely for blockage-free operation.
- Covers for the tines come as standard items which prevent the heads from being spiked by the tines.
- A three-piece reel is available as an option for even higher work rates.
- Excellent cost effectiveness and user benefit



<sup>5</sup> Our sunflower extensions are available for headers from John Deere, Claas, New Holland and Case IH. The technical specifications vary depending on the specific header model. Plastic pans are not available for all models.

# 135 Years of Passion for Ag Machinery

Our complete product range



## The harvest specialist

We are firmly rooted in farming and at home in the fields around the world. The origins of **ZÜRN** date back to the blacksmith shop that was founded in 1885. Since then, **ZÜRN** has evolved to become a synonym for 100% Made in Germany quality.

At our Merchingen production site, we develop and manufacture equipment for combines and forage harvesters of all brands. New technologies for mechanical weed control complete our extensive product range.

Our Hohebuch production site develops, manufactures and markets research plot combines that ensure plot-to-plot purity.

State-of-the-art production technology and service expertise ensure high-performance and reliable products that boost your productivity.

### Combine headers

- ▶ **PREMIUM FLOW** high-capacity belt headers
- ▶ **SOLERO** sunflower headers

### Header extensions

- ▶ **RAPSPROFI II** rapeseed header extensions
- ▶ **COMPACT** side knives
- ▶ Sunflower extensions

### Header transporters

- ▶ Single-, tandem-, two-axle header transporters
- ▶ Four-wheel steer header transporters

### Headers for forage harvesters

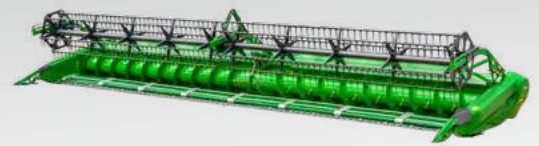
- ▶ **PROFI CUT** direct cut headers for biomass

### Econventional Farming

- ▶ **TOP CUT<sup>collect</sup>** weed collector
- ▶ **SEED TERMINATOR** multi-stage hammer mill

### Agricultural field trial equipment

- ▶ Plot combines
- ▶ High-clearance tool carriers
- ▶ Plot seeders



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This brochure is available internationally. Some illustrations and texts may refer to optional equipment and accessories that are not available in all regions. Further information is available from your local dealer. Zürn Harvesting reserves the right to change specifications and designs shown in this brochure without notice.

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HARVESTING

