Defoliator

Leaf Stripper Professional

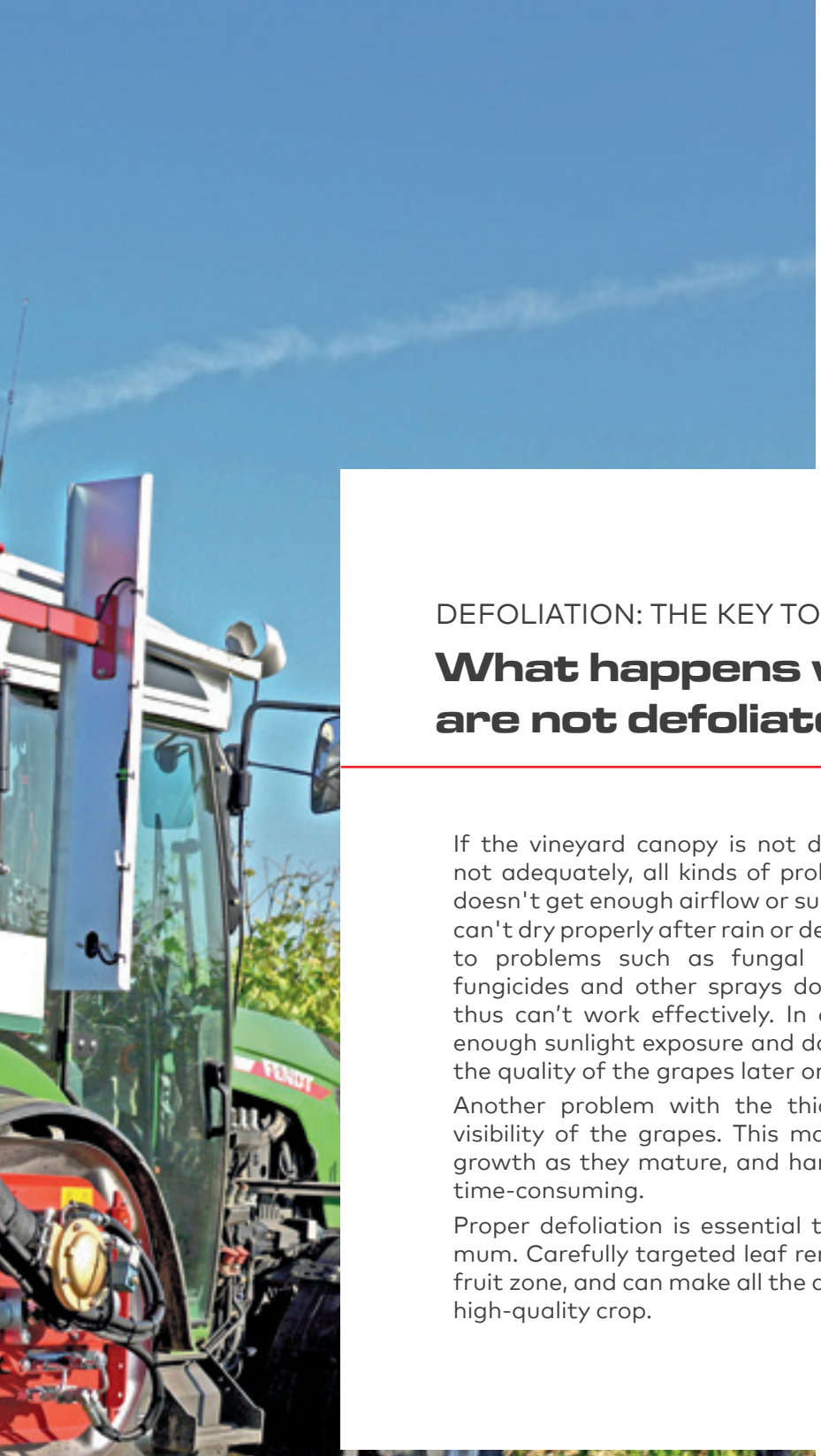
VITIpulse DUO | VITIpulse Combi











DEFOLIATION: THE KEY TO A GOOD HARVEST

What happens when vines are not defoliated?

If the vineyard canopy is not defoliated at the right time, or not adequately, all kinds of problems can arise. The fruit zone doesn't get enough airflow or sun exposure, meaning the grapes can't dry properly after rain or dew. This makes them susceptible to problems such as fungal diseases. At the same time, fungicides and other sprays don't penetrate to the fruit and thus can't work effectively. In addition, the grapes don't get enough sunlight exposure and don't ripen so well, which affects the quality of the grapes later on.

Another problem with the thick foliage is that it obscures visibility of the grapes. This makes it harder to monitor their growth as they mature, and hand picking is more difficult and time-consuming.

Proper defoliation is essential to keep these issues to a minimum. Carefully targeted leaf removal lets light and air into the fruit zone, and can make all the difference for a healthy, ripe and high-quality crop.



Controlled canopy management for optimum grape quality

The benefits of defoliation

Removing leaves and thinning out flower caps and grape clusters creates better ventilation through the fruit zone. This allows the fruit to dry more quickly, which has the dual benefit of reducing risk of fungal diseases while also enabling better spray penetration.

Maintaining an open, light and airy fruit zone has several benefits: The grape skin becomes more resistant to infection. The fruit becomes gradually accustomed to the sun light, and does not sunburn. The sunlight and airflow also facilitate maturing of the fruit, and support the production of important constituents such as aromas, colouring and phenols. A healthy crop means better wine quality.

Defoliation can also be used for targeted yield reduction. Pulsed-air defoliators are particularly good for this, as individual clusters can be removed along with the leaves. Briefly reducing the leaf volume just before flowering means that the clusters are blasted more heavily, thus strategically thinning the crop to create a looser bunch structure and allow higher-quality grapes to grow.

Another benefit of the air blast approach is the increased efficiency for hand picking, since additional leaves can be removed just before picking, so that the grapes are easier to see and to reach – making a selective harvest easier, and saving on time.

There are further positive effects associated with the use of pulsed-air defoliators: they clean leaves and other debris from the grape zone, eliminating sources of disease.

Overall, proper canopy management plays a crucial role in keeping the grapes healthy, enhancing ripeness and, ultimately, significantly improving the quality of the wine.

The right defoliation strategy for every vineyard

When planning canopy management tasks, it's essential to take into account the row orientation and sun exposure. The right time for leaf removal and the intensity of the defoliation depend considerably on these factors. Southwest- or west-facing vineyards have more sun exposure, meaning that excessive defoliation can lead to sunburnt grapes. Northeast- and east-facing zones, on the other hand, may need more intensive defoliation to allow sufficient light and airflow through the fruit zone.

The one-sided defoliation approach provides an important measure of control: you can open up the grape zone on the morning-sun side with targeted leaf removal, while leaving most of the canopy in place on the afternoon-sun side. This allows the grapes to benefit from the positive effects of defoliation – better airflow, lower susceptibility to disease, better visibility for hand picking – but without an increased risk of sunburn.



Removing grapes with botrytis and sour rot

Unpredictable weather conditions are resulting in more and more epidemics of rotten grapes. Sour rot in particular is frequently becoming a major problem for viticulturists, since it directly impacts wine quality. To maintain the VA level at an acceptable level, individual clusters of rottened fruit need to be removed before the harvest. This is a task that can be done by a pulsed-air defoliator. As part of a research project, a group from the DLR Mosel (Dienstleistungszentrum Ländlicher Raum Mosel) tested this technology. In 2023, a year of weather extremes, the project obtained the following results for Riesling grapes:



| Before



| After

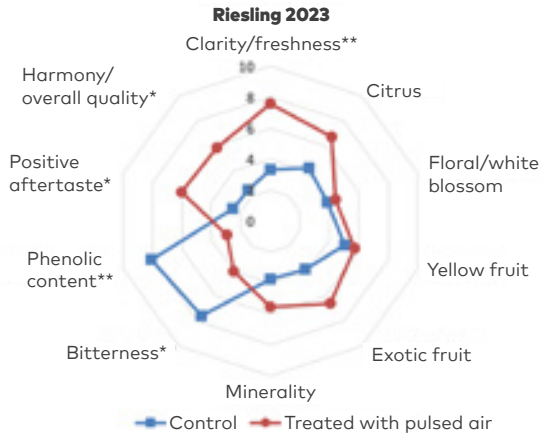
Pinot noir in 2024:



| Before



| After



n = 15 ** p = 0.01 * p = 0.05

With high rot levels:

- 50%

volatile acids (VA)

- 2/3

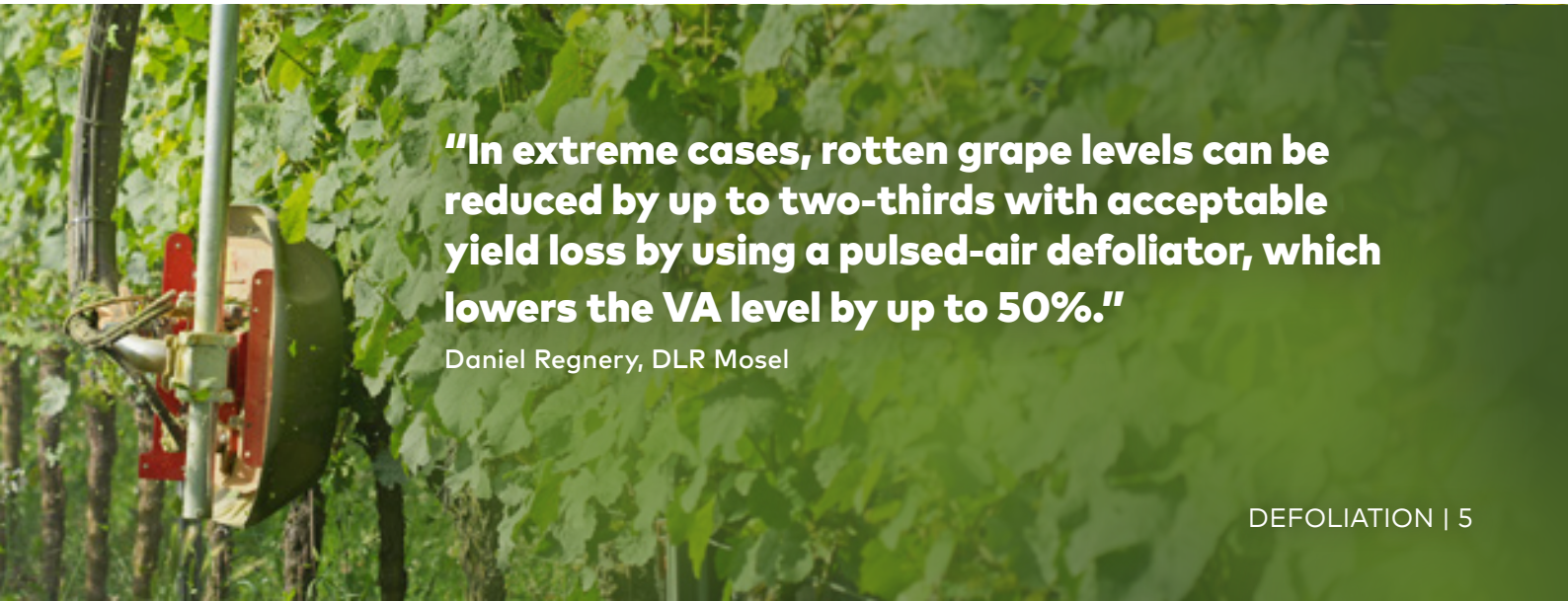
rotten berries

Yield loss = rot incidence

(35% incidence = Yield reduction of 30–40%)

- **Technology:** The best results were achieved with a counter-rotating over-row pulsed-air defoliator.
- **Grape structure:** Grapes with a loose bunch structure can be cleaned much more effectively than tighter bunches.
- **Type of rot:** The procedure does not remove dry berry rot.
- **Damage:** Damage to healthy grapes is limited to a reasonable level.

Source: Kuratorium für Technik und Bauwesen in der Landwirtschaft (KTBL) e.V., ATW-Vorhaben 228
(Detailed results can be requested from the KTBL)

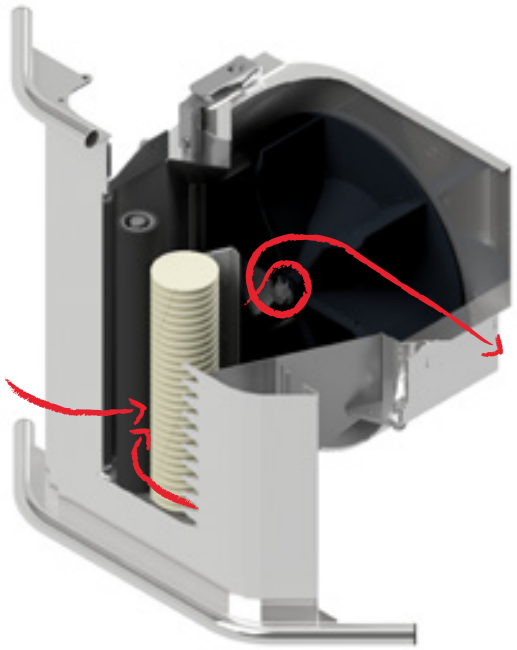


"In extreme cases, rotten grape levels can be reduced by up to two-thirds with acceptable yield loss by using a pulsed-air defoliator, which lowers the VA level by up to 50%."

Daniel Regnery, DLR Mosel

ROLLER DEFOLIATOR

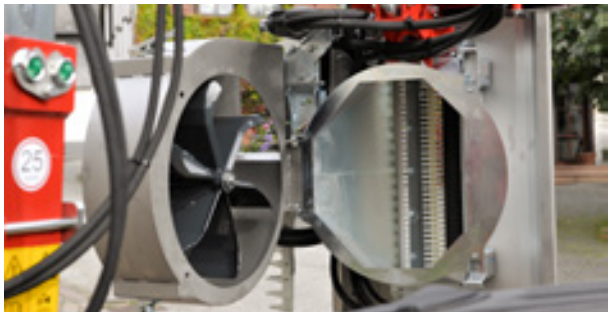
Leaf removal made simple



| Cross-section of roller head on the Leaf Stripper Professional, showing operating principle

Plucking roller system

A roller defoliator has two rollers rotating in opposing directions. The suction fan generates an airflow that draws the leaves to the machine. The two counter-rotating rollers grab the leaves, pull them and pluck them out of the fruit zone. A patented grooved roller design captures only leaves, while the grape clusters are left undamaged.



Simple, easy to handle

The roller defoliator is a popular 'machine of choice' not just because it is highly effective performance, but also for its easy handling. The operator can control and handle the machine safely and intuitively as it works through the vineyard.

Tool-free opening provides easy access for maintenance, and the unit has been designed with low maintenance requirements.



| Parallelogram break away

Break away

The parallelogram is combined with a safety breakaway that reliably protects the defoliator unit from damage. If the unit comes into contact with posts or unexpected obstacles, it deflects safely and then returns automatically to its original position.

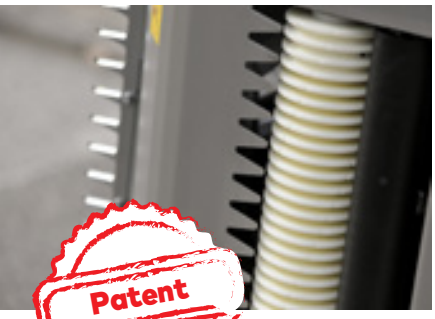


SIMPLE.
DURABLE.
LOW-MAINTENANCE.



Fan outlet

The fans expel the material to the front, so that the tractor does not get clogged up with debris.



Roller system

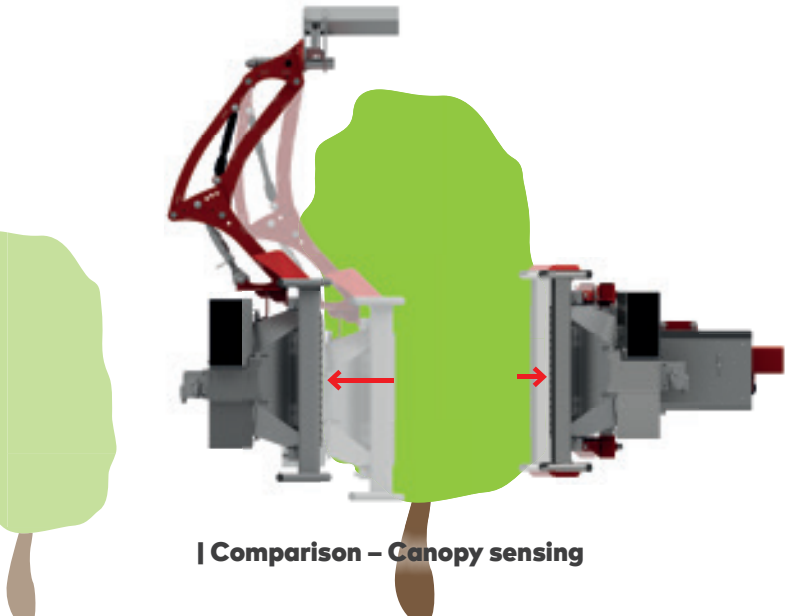
The patented grooved plastic rollers protect the shoots and clusters from damage, so that the grapes are also protected and unharmed. Specially developed wipers keep the rollers clean and ensure consistent performance over lengthy working periods.

At a glance

Rollers

Up to 5.5 km/h

From bloom until grape veraison



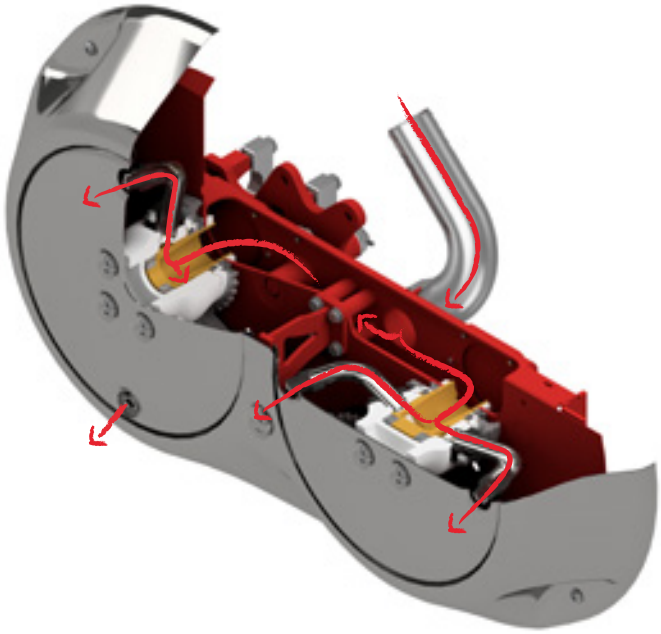
| Comparison – Canopy sensing

Consistent spacing for consistent performance

An integrated sensor system is used to maintain a constant contact pressure between the defoliator unit and the canopy. The mechanical sensor design ensures a clean, even result and frees up the operator, allowing them to work at higher travel speeds.

PULSED-AIR DEFOLIATOR

Economic. Efficient. Boosts quality.



| Cross-section of VITIpulse DUO head with operating principle

Pulsed-air system

A stream of compressed air is generated by a compressor driven by the PTO shaft, and guided through the working head into rotating nozzles, which directs the air bursts right into the grape zone.

The working head can be adjusted to direct the pulsed air accurately at the height of the grape zone.

Streched window for operation

The VITIpulse DUO can be used from blooming right through until just before harvest. For example, after the bloom it can be used to blow out the caps from the clusters, and to control yield. The defoliator can be used before harvesting for targeted thinning from sour rot, which has a significant impact on boosting the crop quality.

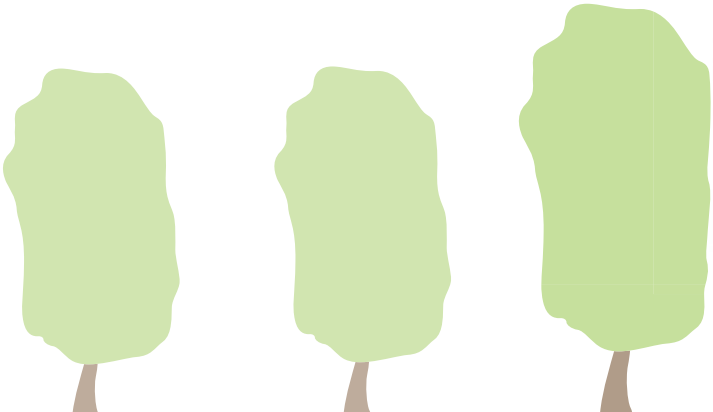


At a glance

Pulsed air

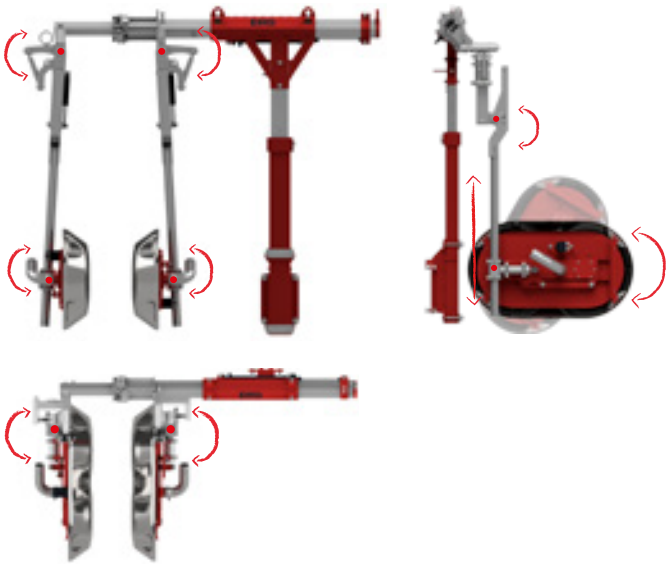
Can be used from the bloom to the harvest

Up to 4.5 km/h





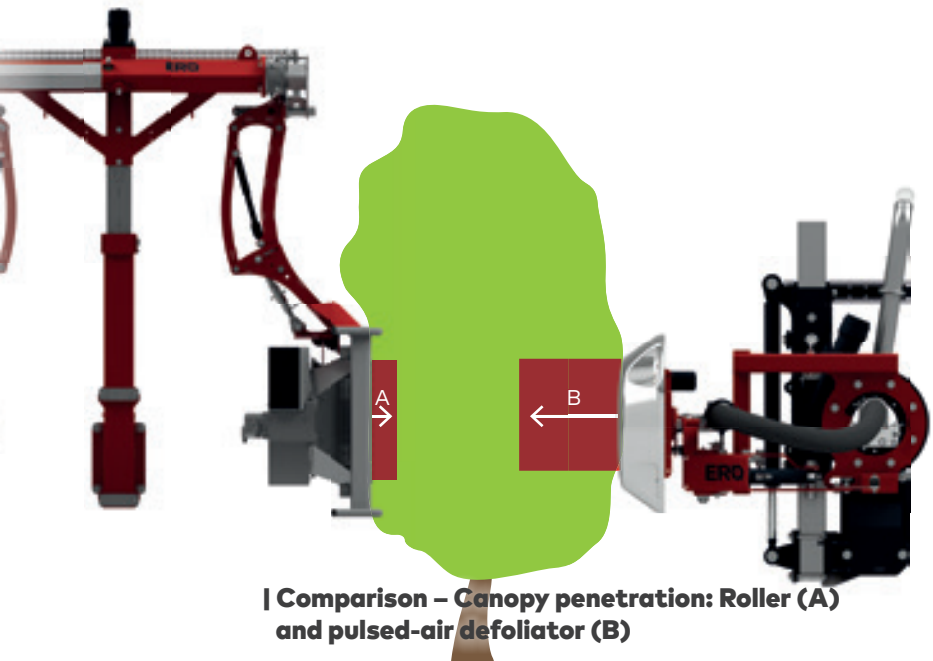
PENETRATES INNER CANOPY FOR THINNING AND AIR CIRCULATION



Defoliator unit adjustment

The position and inclination of the defoliator heads can be adjusted to perfectly match the canopy.

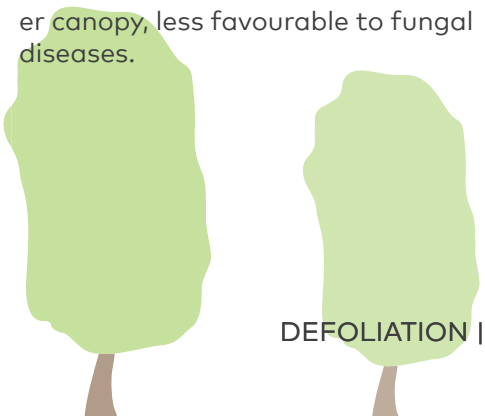




| Comparison – Canopy penetration: Roller (A) and pulsed-air defoliator (B)

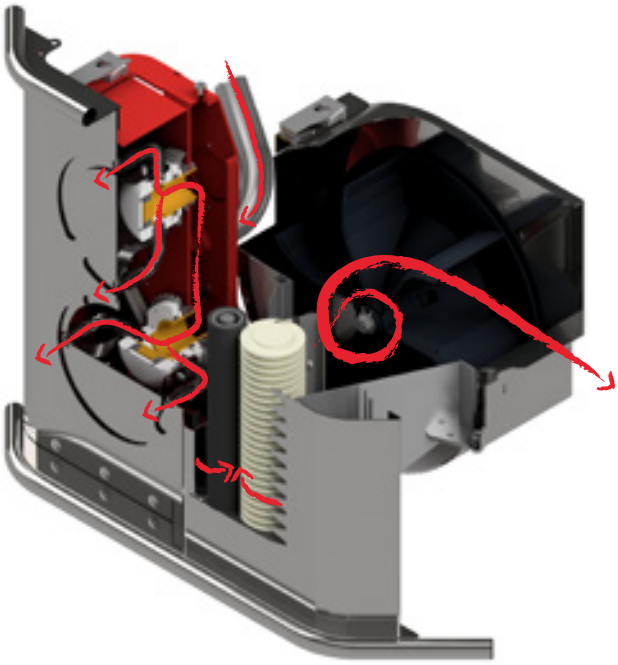
Penetrates inner canopy for thinning and air circulation

Unlike the roller defoliator, the pulsed-air defoliator penetrates right into the canopy and cleans debris from clusters while thinning the inner zone. This creates a cleaner canopy, less favourable to fungal diseases.



COMBINED ROLLER AND PULSED-AIR DEFOLIATOR

A new dimension for defoliation!



| Cross-section of the VITIpulse Combi unit with operating principle

Unique from ERO: Combi roller and pulsed-air defoliator

The VITIpulse Combi combines the trusty roller defoliator with a pulsed-air defoliator in a two-stage system. This gives the user maximum flexibility and enables faster working speeds.



PREMIUM DEFOLIATION QUALITY AT OPTIMUM WORKING SPEEDS

At a glance

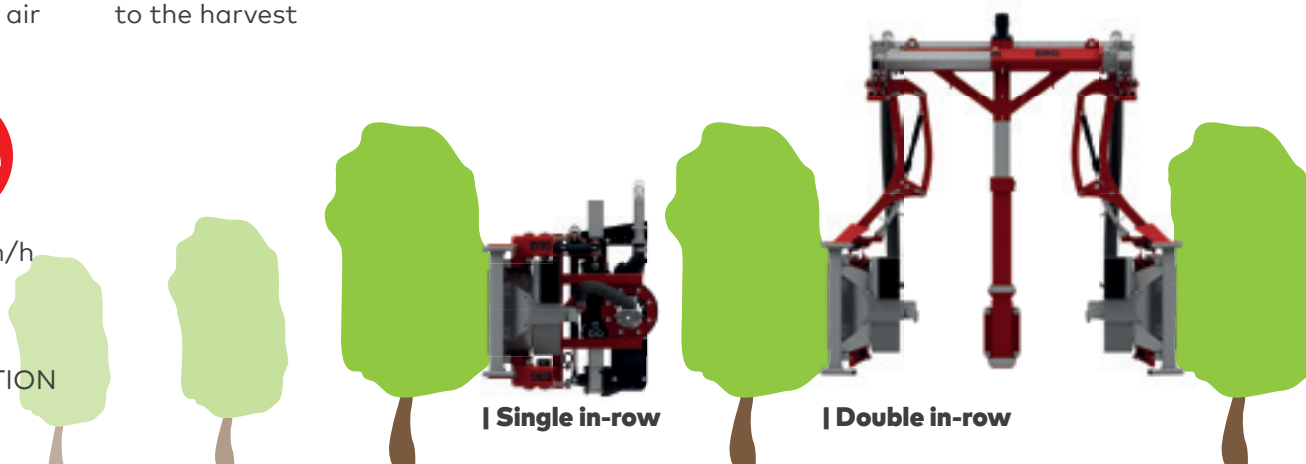
Combined roller and pulsed air

From the bloom to the harvest

Up to 7 km/h

Flexible use of the dual system

A benefit of the Combi defoliator is the flexibility: operators can choose to either combine the use of both systems or run them individually and independently from each other. The intensity of defoliation can also be adjusted individually on the rollers on each side.



| Single in-row

| Double in-row



UNIQUE HIGH PERFORMANCE – COMBINATION SETS A NEW BAR



Rollers

The suction fan generates an airflow, which draws the leaves to the counter-rotating rollers, stripping them away from the canopy.

Pulsed air

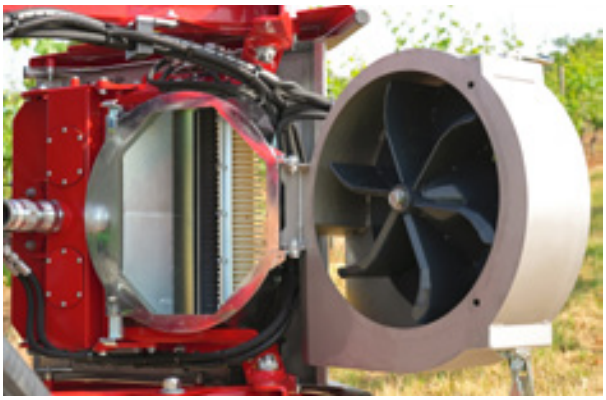
The stream of pulsed air is guided through the working head into rotating nozzles, which direct the air blasts right into the grape zone.

Two systems, one defoliator unit

The external leaves are removed with the classical stripping rollers, which means that a lower working pressure is required for the pulsed-air unit, allows a higher working speeds possible. This also has the benefit that the air blasts are directed right into the grape zone, cleaning away debris.

Low maintenance, easy-clean

No tools are required to open the housing, providing easy access to the unit. The patented cleaning tray keep the rollers from becoming clogged up so that they run all day long without additional cleaning. The minimal cleaning requirements and easy to lubricate bearings means high efficiency and low maintenance costs.



COMBI ROLLER AND PULSED-AIR DEFOLIATOR

Overview of the three options



ROLLER DEFOLIATOR

Leaf Stripper Professional

Rollers

From the bloom until grape veraison

Up to 5.5 km/h

PULSED-AIR DEFOLIATOR

VITIpulse DUO

Pulsed air

From the bloom to the harvest

Up to 4.5 km/h

COMBINED ROLLER AND PULSED-AIR DEFOLIATOR

VITIpulse Combi

Combined roller and pulsed air

From the bloom to the harvest

Up to 7 km/h

Product models



| Leaf Stripper Professional
single in-row



| Leaf Stripper Professional
single over-row



| Leaf Stripper Professional
double in-row

Product models



| VITIpulse DUO
single in-row, front linkage



| VITIpulse DUO
single over-row, front linkage



| VITIpulse DUO
single over-row, rear linkage



| VITIpulse DUO single
over-row, rear linkage narrow



| VITIpulse DUO
double in-row, front linkage



| VITIpulse DUO
double in-row, rear linkage



| VITIpulse DUO
double in-row, front PTO shaft



| VITIpulse DUO
double in-row, reverse drive



| VITIpulse DUO
double over-row, rear linkage

Product models



| VITIpulse Combi
single in-row



| VITIpulse Combi
double in-row, front



| VITIpulse Combi
double in-row, rear

ROLLER DEFOLIATOR

Leaf Stripper Professional



Standard equipment

- Stainless steel housing and front cover
- Patented grooved roller – protects fruit from damage
- Easy clean – simple to open the cover
- Stainless steel cover
- Optimised fan wheel
- Continuously self-cleaning grooved roller
- Parallelogram suspension for canopy sensing
- Break away
- Hydraulic width adjustment
- Storage stand

Low maintenance, easy clean

No tools are required to open the housing, allowing access to the fan. The patented cleaning comb keeps the rollers from clogging up, so that they run all day. Highly economic thanks to low cleaning frequency, easy-clean design and low maintenance costs (easy to grease bearings).



Technical data

Model	Leaf Stripper Professional single in-row	Leaf Stripper Professional single over-row	Leaf Stripper Professional double in-row
Row width	> 1.50 m	> 1.70 m	1.60 – 3.40 m*
Consumption	25 l/min + 12 l/min	50 l/min + 12 l/min	50 l/min + 12 l/min

* depending on head

At a glance

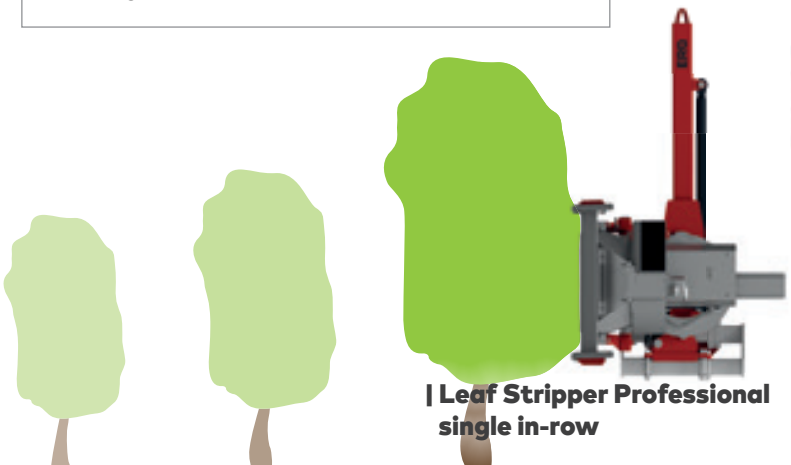
Rollers

From the bloom until grape veraison

Up to 5.5 km/h

Product models

- Leaf Stripper Professional single in-row
- Leaf Stripper Professional single over-row
- Leaf Stripper Professional double in-row



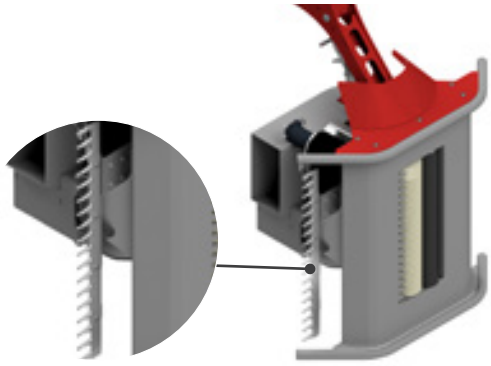
| Leaf Stripper Professional single in-row



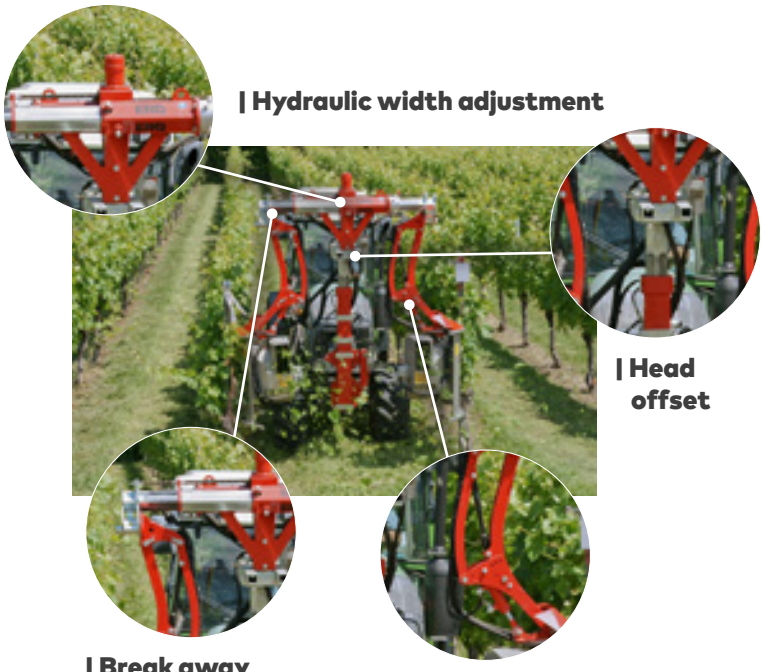
LOW MAINTENANCE, EASY CLEAN

Options

- Hydraulic lateral inclination on fan
- Vertical cutterboard to cut the leterals before defoliating, for superb defoliation results
- Comfort Controller with joystick operation
- Goose neck for narrow rows
- Swivel device 180°



| Vertical cutter bar

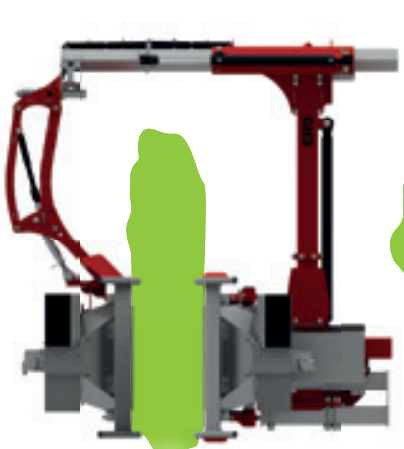


| Hydraulic width adjustment

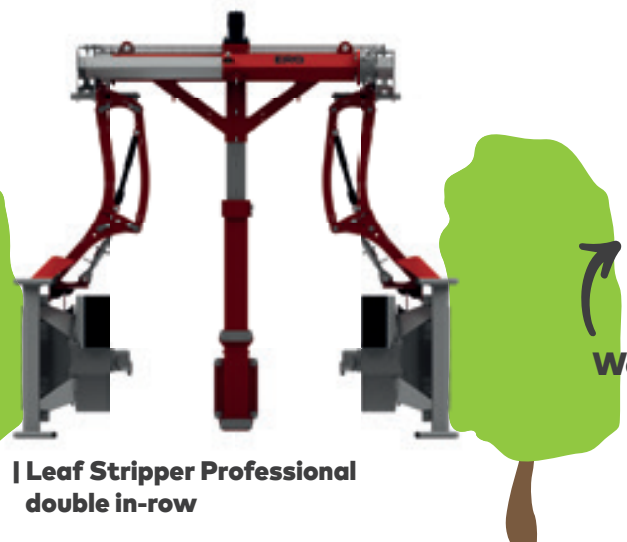
| Head offset

| Break away

| Hydraulic lateral inclination on fan



| Leaf Stripper Professional single over-row



| Leaf Stripper Professional double in-row

Watch product video

PULSED-AIR DEFOLIATOR

VITIpulse DUO



Standard equipment

- Double-acting hydraulic lift
- Manuel adjustment of the horizontal and vertical angles between the defoliator heads and the canopy
- Defoliator units each with two rotors and stainless steel front cover
- Variable use of two to four nozzles simultaneously per head (13.5 mm nozzles, 11.5 mm nozzles, nozzle plugs)
- Defoliation height manually adjustable between 300 mm and 600 mm
- Break away system on both defoliator units using pneumatic springs with automatic reset (not on machines with roll over device)
- Storage stand

VITIpulse terminal

The operator has full control of all the key machine parameters from the tractor cab through the VITIpulse terminal.

The terminal includes:

- Display and adjustment of the rotor speed
- Compressor oil temperature display
- Pressure display (strength of air pulses) with safety cut-off on overpressure



Technical data

Model	VITIpulse DUO single in-row	VITIpulse DUO single over-row	VITIpulse DUO double in-row	VITIpulse DUO double over-row
Row width	> 1.70 m	> 1.40 m	1.60 – 3.70 m*	1.60 – 3.00 m
Consumption	16 l/min + 12 l/min + 28 kW (38 PS)	16 l/min + 12 l/min + 40 kW (54 PS)	16 l/min + 12 l/min + 40 kW (54 PS)	16 l/min + 12 l/min + 70 kW (95 PS)

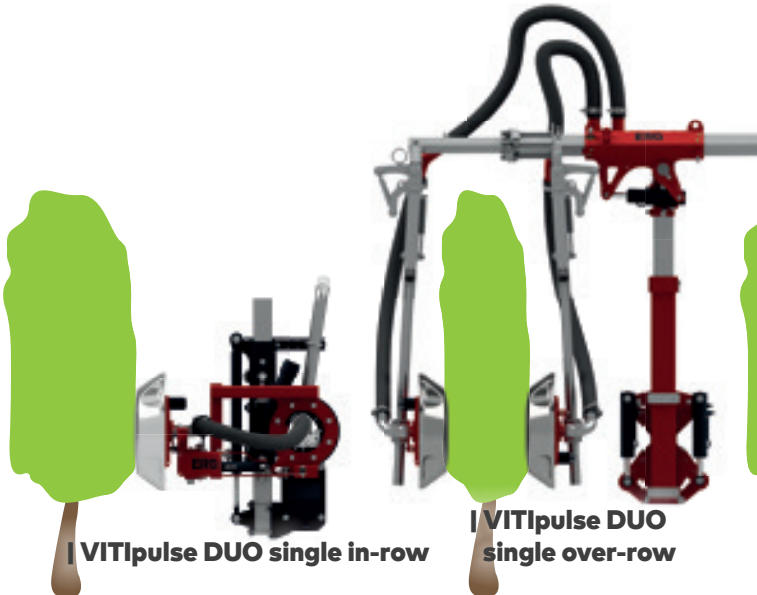
* depending on head

At a glance

Pulsed air

From the bloom to the harvest

Up to 4.5 km/h



VITIpulse DUO single in-row

VITIpulse DUO single over-row



Watch product video

ECONOMIC.
EFFICIENT.
BOOSTS QUALITY.



VITIpulse compressor unit

Easy access to compressor for maintenance and cleaning.

Standard equipment, compressor unit:

- Drive shaft
- Silencer in the intake manifold
- Compressor unit on frame with universal three-point linkage

Options, compressor unit:

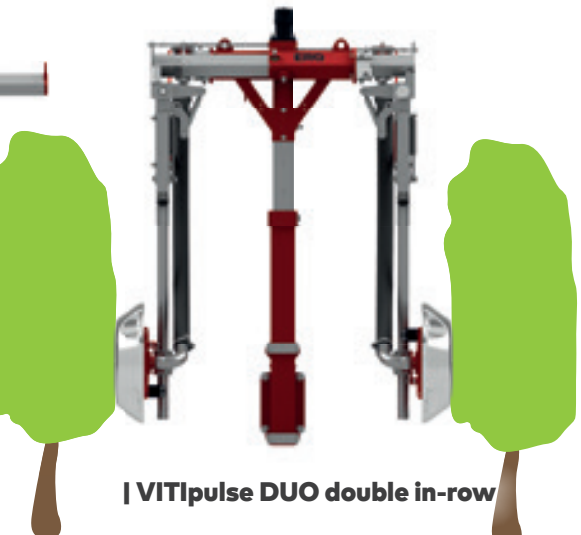
- Pre-filter TopSpin DL220

Options, VITIpulse DUO

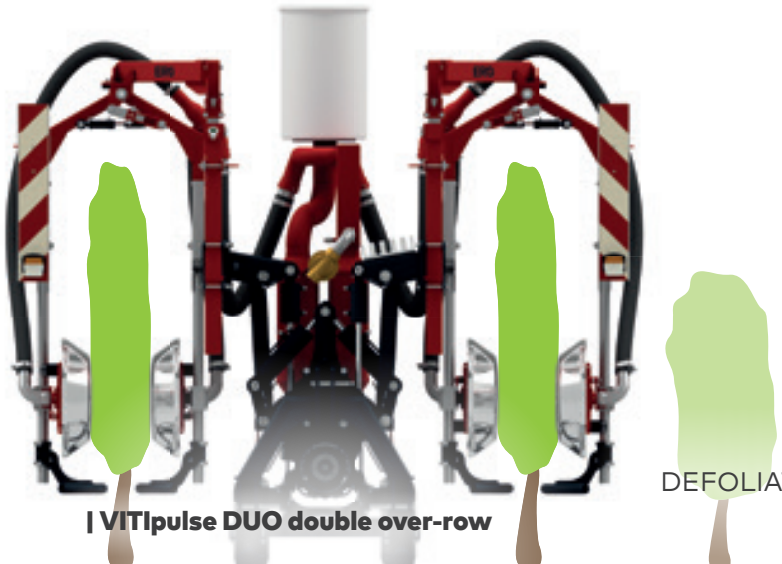
- Z linkage for front-mounted single over-row machines
- Individual switch-offs for pulsed air
- Hydraulic adjustment of defoliator heads (working height)
- Comfort Controller with joystick operation

Product models

- VITIpulse DUO single in-row, front linkage
- VITIpulse DUO single over-row, front linkage
- VITIpulse DUO single over-row, rear linkage
- VITIpulse DUO single over-row, rear linkage narrow
- VITIpulse DUO double in-row, front linkage
- VITIpulse DUO double in-row, rear linkage
- VITIpulse DUO double in-row, front PTO shaft
- VITIpulse DUO double in-row, reverse drive
- VITIpulse DUO double over-row, rear linkage



| VITIpulse DUO double in-row



| VITIpulse DUO double over-row

COMBINED ROLLER AND PULSED-AIR DEFOLIATOR

VITIpulse Combi



Standard equipment, VITIpulse Combi double in-row

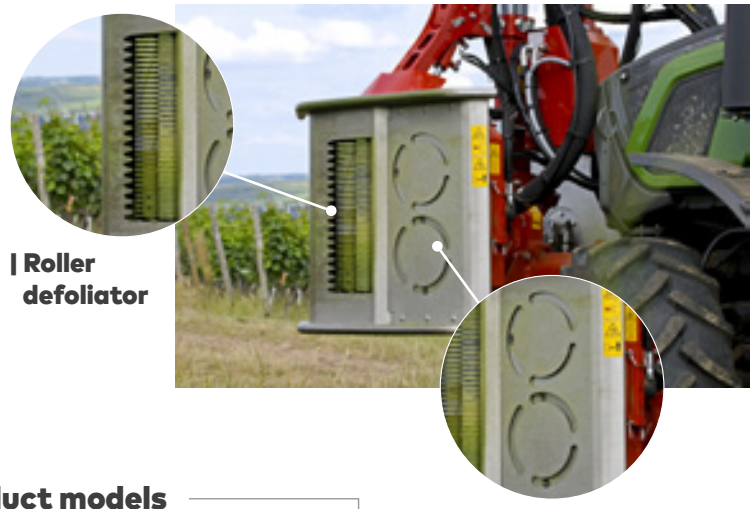
- Hydraulic width adjustment
- Adjustment of working head angle to canopy
- Defoliator unit with stainless steel front cover and guide runners to protect the vines
- Tool-free opening for cleaning and maintenance
- Double-acting hydraulic lift
- VITIpulse compressor unit with three-point linkage
- Break away
- Storage stand

VITIpulse terminal

The operator has full control of all the key machine parameters from the tractor cab through the VITIpulse terminal.

The terminal includes:

- Display and adjustment of the rotor speed
- Compressor oil temperature display
- Pressure display (strength of air pulses) with safety cut-off on overpressure



| Roller defoliator

| Pulsed-air defoliator

At a glance

Combined roller and pulsed air

From the bloom to the harvest

Up to 7 km/h

Product models

- VITIpulse Combi single in-row
- VITIpulse Combi double in-row, front
- VITIpulse Combi double in-row, rear

Watch product video



| VITIpulse Combi single in-row **| VITIpulse Combi double in-row**

Technical data

Model	VITIpulse Combi single in-row	VITIpulse Combi double in-row
Row width	> 1.60 m	1.80 – 3.40 m*
Consumption	41 l/min + 12 l/min + 28 kW (38 PS)	50 l/min + 16 l/min + 12 l/min + 40 kW (54 PS)

* depending on head

Options

- Pulsed air can be switched off for individual defoliator heads
- Individual adjustment of rotor speed. Separate piping for the leaf stripper with mirror valve for side reversal and rpm display on the screen
- Comfort Controller
- Hydraulic tilt of defoliator heads

VITIpulse compressor unit

Easy access to compressor for maintenance and cleaning.

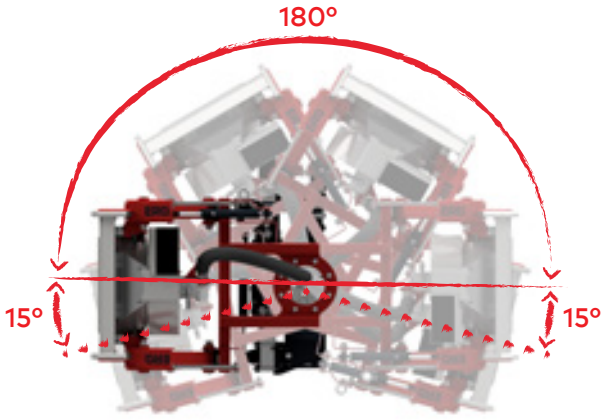
Standard equipment, compressor unit:

- Drive shaft
- Silencer in the intake manifold
- Compressor unit on frame with universal three-point linkage



| Hydraulic width adjustment

| Hydraulic tilt of defoliator heads



| Swivel device 210°



VITIpulse Combi single in-row with roll over device

The single in-row VITIpulse Combi features a low centre of gravity and a machine-optimised design that keeps it close to the tractor, ensuring maximum stability and superb weight distribution. Additionally, the model has a 210° roll over device, giving the operator full flexibility to adjust the defoliator heads to suit different row spacing and working conditions. The result is highly efficient canopy management and easy to opperate in the vineyard.

Standard equipment, VITIpulse Combi single in-row

- Double-acting hydraulic height adjustment, 500 mm stroke
- Hydraulic roll over device 210°
- Hydraulic transverse shift up to 700 mm
- Defoliator head with stainless steel front cover and guide runners to protect the vines
- Tool-free opening for cleaning and maintenance
- Compressor unit
- Storage stand

Sales partner:

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Data and images are provided as a guide and may not be exact. The products depicted sometimes include optional extras which are not part of the standard equipment. We reserve the right to make technical and design changes.

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