

# XPOWER XPS

ELECTRICAL WEED CONTROL FOR VITICULTURE AND ORCHARDS

Powered by  
**zasso**™

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XPS

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# THE FUTURE OF HERBICIDES IS THE XPOWER

- A proven alternative weeding technique
- Electrophysical destruction of weeds and invasive plants
- Based on a closed, uniform and targeted electrical circuit
- Works down the roots: XPower treats the plant from the leaves to the roots in the soil

Chemical herbicides were a huge success story in the 20th century, reducing costs and raising yields. But there are now very good reasons why alternative weeding technologies are an important step forward, for many areas of application.

Various studies have shown that the risk of glyphosate is controversial, but the uncertainties for the customer are increasing. The risk of biological resistances is increasing and many active herbicidal agents are losing their approval. What is clear, is that biological resistance from chemical applications is on the rise and spreading worldwide. Whatever the mixture of toxicological regulations and the political decisions finally have, it is clear that non-chemical solutions will be required to develop optimised environmentally friendly and reliable weeding strategies.

All products of the XPower family use high-voltage electronics and state of the art engineering to eliminate target plants effectively and minimise the usage of chemical herbicides. The XPower technology enables a cost-effective weed control which is becoming increasingly essential to ensure the high yields and the harvest quality in arable crop rotations but also in perennial crops such as vine and fruit growing orchards.

## 3 PRODUCTS FOR NUMEROUS APPLICATIONS



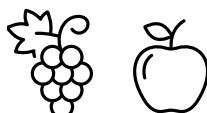
**XP300**  
AGRICULTURE



**XPS**  
VITICULTURE  
ORCHARDS



**XPU**  
URBAN  
APPLICATIONS



# WORKING PRINCIPLE

High-voltage electricity is provided locally by a generator. The electric current passes via the applicator into the plants and then into the soil. The electric circuit is closed via a second applicator that either touches other plants or the soil. The energy lets the plants wilt from the inside, right down into their roots.

- **Systemic mode of action**
- **Irreversible destruction of cell compartmentation**
- **Interrupted water supply in the vessels**
- **Immediate plant death**

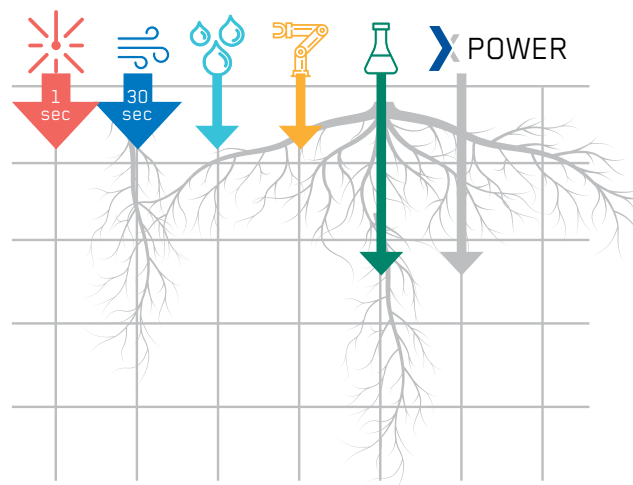


The right amount of energy and an optimised applicator are decisive for the effect. Plants with a high-water content and with few stems and roots compared to their leaf mass require only little energy and are easy to treat.

Very dense and woody grasses or very large plants require a lot of energy and special applicators. In these cases, combination methods, for example with mowing achieve best results. Plants with larger rootstocks or rhizomes are severely weakened and will partially require more than one treatment.

The XPower effect can best be compared with that of Glyphosate, it works right down to the roots – only in an instant and without residue!

**100% CHEMICAL FREE. 100% ECO-FRIENDLY.**



## WORKS DOWN THE ROOTS

Next to chemistry only XPower works systemically down to the roots. The electric power is directed through the roots into the soil. Therefore, the roots of any plants that come into contact with the electrodes. The destructive effect of the XPower down into the plants root minimises the re-growth capacity of both, annual and perennial weed species.

# DESIGNED FOR VITICULTURE & ORCHARDS

The XPS is part of the XPower family of electric weeding solutions.

It was developed and adapted to address the specific weeding needs of wine and fruit growers.

The XPS consists of a back unit and a set of two side applicators:

- The back unit includes a generator, a gearbox, power units and an electrical control cabinet.
- The applicator consists of two static electrodes and two electrodes swinging on three passive rotary axes. Special attention was given to the kinetics of the intercept arm to optimize the weeding area while respecting the integrity of the trunk.

## SPECIFICATIONS

- Available as front or rear version
- 24 or 36 kW with the Power Boost option
- 8000 Volts
- 1.52 - 4.85 m working width depending on the configuration
- Up to 4 km/h working speed



As a **rear** solution, the XPS is mounted on a hydraulic frame.



**Front** options are possible using standard frames.

# BENEFITS

## What are the advantages compared to chemical weeding?

- Fast and durable action: it is residue-free and can be applied in most weather conditions.
- It does not lose its effectiveness in case of rain after application, unlike chemical weed killers.
- The XPS user is not exposed to toxic substances.
- Neither the soil, water nor insects are affected during the application.
- XPower applications are not subject to legal restrictions and can be applied in all areas, e.g. along water ways.
- The XPower is a useful additional tool towards partial or total herbicide-free wine or food production.

## What are the advantages compared to non-chemical weeding?

- Systemic action down into the roots: other non-chemical methods generally are not systemic, which provokes re-growth.
- No impact on the soil: prevention of erosion risks and no stimulation of the weed seed stock or nutrition turnover.
- Soil integrity: the energy runs directly into the roots and does not heat up the surrounding soil or the environment.
- Optimised kinematics: good coverage between the vines thanks to an applicator that pivots on three rotation points.

## COMPATIBLE WITH ORGANIC FARMING



For wine growers



For fruit growers

# VALIDATED DURING ONE YEAR BY INDEPENDENT INSTITUTES

In order to provide a solution adapted to your needs with a high level of performances, the XPS has been tested by the French Institute of Vine (IFV) and also by the DLR in Germany.

The aim of the trials, conducted throughout the 2020 season, were twofold:

- To evaluate the effectiveness of electric weeding according to different parameters, for example weed density and sensitivity of single weed species at different working speed.
- To analyse the mechanic impact induced by the use of the applicator arm on the trunk and of the electricity on the vine root and vegetative level.

Conclusion: "The efficiency of electric weeding is very satisfactory: over 80% under optimal conditions. The vegetative parts of the vine potentially exposed to the electrodes will also undergo this foliar action, without damage to the functioning of the vine stock. The number of interventions per year seems to depend on the weather conditions, which is a common feature of all the alternatives to herbicides. An efficient weed control has been achieved with three interventions during this 2020 season." - French Institute of Vine (IFV)

**BEFORE**



**AFTER 15 DAYS**



**TREATED VS. UNTREATED ROWS**



# SAFETY FIRST



## WHAT IS THE IMPACT OF XPS ON SOIL LIFE?

Preliminary tests were conducted by Zasso already in 2019.

Compared to the untreated control area, the effects of XPower application were significantly lower than those of a mechanical (harrow) treatment.

Tests performed have shown that, under realistic dosage and treatment conditions, no significant lasting effects can be found on microfauna, mesofauna (springtails and oribatid mites) and microorganisms.

## WHAT IS THE IMPACT OF XPS ON THE INTEGRITY OF THE VINE STOCKS?

During application, tests with the French Wine Institute (IFV) have confirmed that the vine stock is not affected because it is isolated with its wooden bark.

## IS THE XPS SAFE FOR THE OPERATOR?

The area of high-voltage transformation as well as the connections of cables and the three rows of electrodes are entirely isolated from the rest of the XPS equipment: all parts are fixed on an isolating base structure made from glass reinforced plastics, which additionally eliminates the risks to the user.

The XPS is fully compliant with European safety norms in vigor.



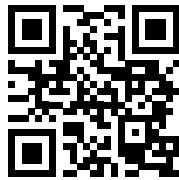


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## VISION

AGXTEND is the leading platform for innovative technologies in the agricultural sector.



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## MISSION

AGXTEND develops and provides groundbreaking technologies that allow farmers to extend their efficiency and thereby their economic success.

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