VICAR – plant protection technology that speaks for itself

Multipurpose

The radial blower means VICAR plant protection technology is suited for use almost everywhere. With five basic models and 15 different turbine configurations, the devices can be adapted to all kinds of needs – from cultivation of one-metre-wide rows of vegetables to rows of trees with a maximum range up to 45 metres.

Efficient and environmentally conscious

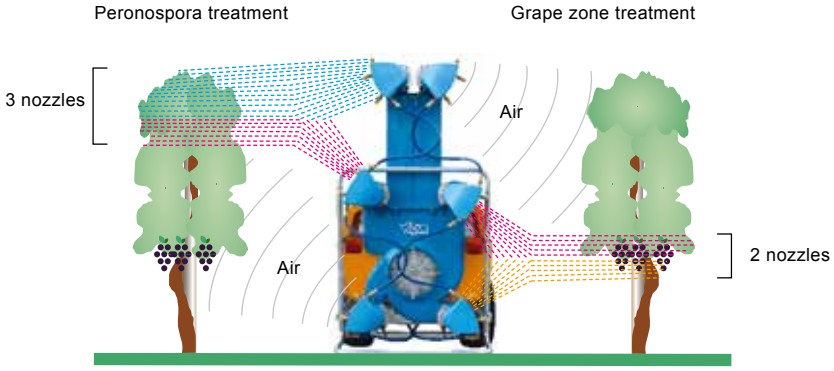
Compared to conventional blowers, radial blowers convey lower volumes of air at higher speeds with the same output. Lower volumes of air mean that the air can be directed and the air flow individually targeted. This results in precise, product-saving application. Higher air speed results in greater penetration of the foliage and thus better coverage on the underside of the leaves and on the fruit set.

Easy to operate

Each of the turbine's air outlets is supplied with air from a specific part of the turbine wheel. If the outlets are closed on one side using the hydraulically adjustable air-flow valves – for example in a water protection area or on the edge of a forest – the air intake is automatically adjusted to the required volume, in this case by half. This guarantees consistent air flow and symmetry across all outlets. In order to avoid frictional losses between the turbine wheel and the air outlet, curved ducts with special directional fins guide the air flow.

The patented partial spiral system from VICAR

Practical
tips for use



Directing the air flows

The variable alignment of the air flow on the radial blower enables precise application with minimal drift. This reduces the amount of plant protection product required, which in turn saves you money. The 360-degree rotating nozzles are suited to treating all crops and can be programmed for numerous different applications.

Regardless of the type of crop or setting, all air outlets are always used. For example, if only two nozzles are used to apply plant protection products, all the other air outlets on that side are also directed towards the target area.

Their air flow helps to focus the spray jet of the plant protection product, making it more stable and more uniform (see diagram above). This arrangement requires less speed and power and thus helps to conserve fuel. So you can benefit from cost savings.

Where to find VICAR

Here at LTS, we have been developing, producing and selling plant protection technology from the VICAR brand for almost 40 years. Based in Vogtsburg im Kaiserstuhl, Germany, our company was founded by Peter Sexauer back in 1982 and has been managed by his son, Timo Sexauer, since 2016. “As fruit and wine-growers ourselves, we are all too familiar with the machinery required by the sector and with the challenges brought about by the different types of farming,” says Timo Sexauer. With his extensive technical expertise, Timo has been developing product innovations in crop protection technology for many years. LTS has always kept our focus on our company’s greatest strength: sales, consultancy and service, including the prompt supply of spare parts. After all, as farmers ourselves, we know how getting the crop protection right with the correct products is a vital factor in achieving a good yield.

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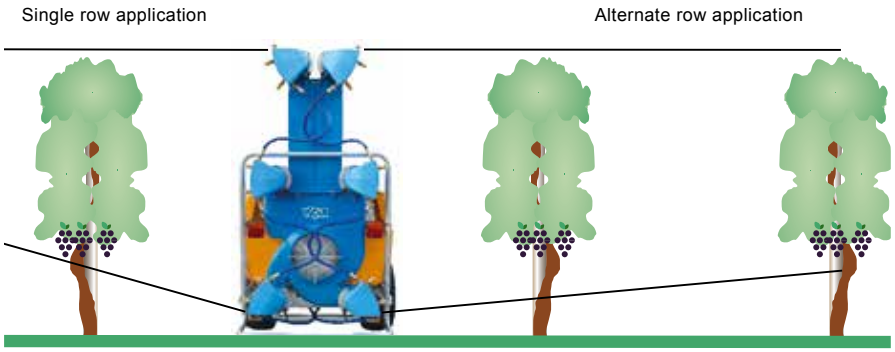
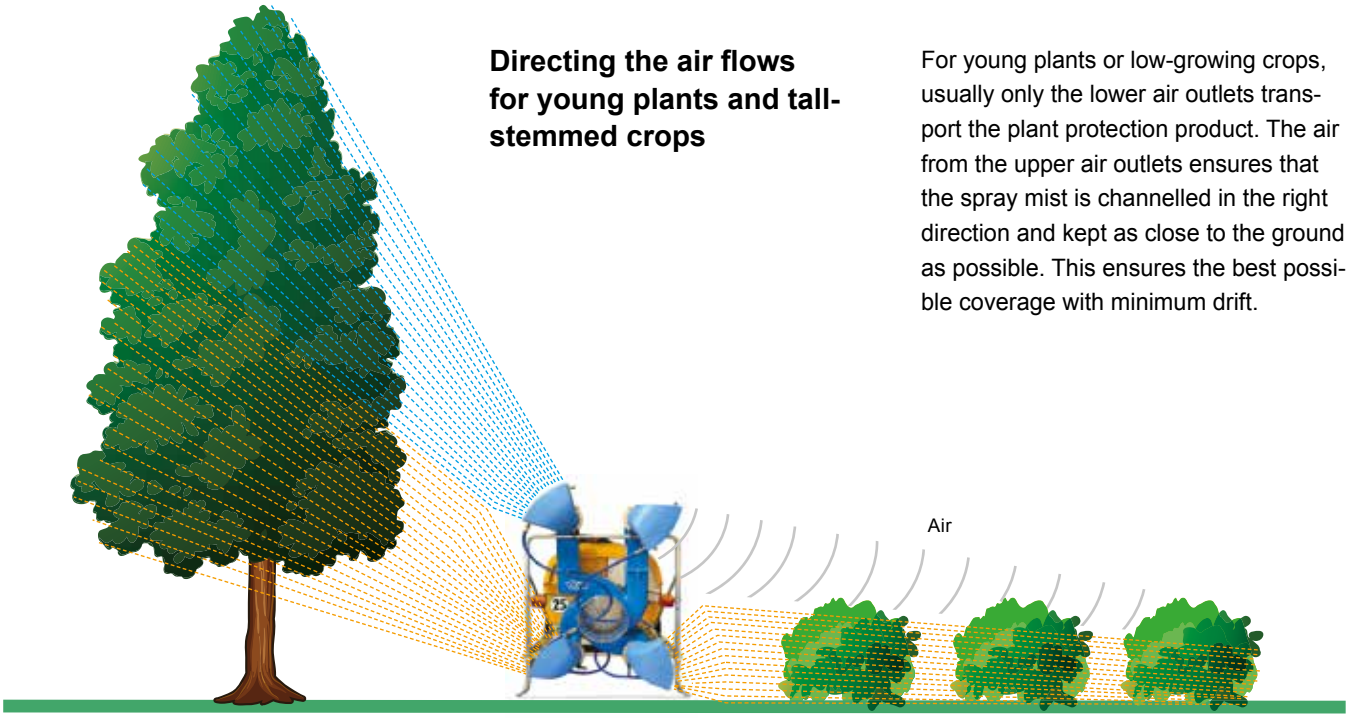
Air flow controls the flight direction of the droplets

With both centrifugal blowers and conventional blowers, the air flow controls the direction of the droplets' flight. The air functions as a carrier, transporting the plant protection product to the application area. The nozzles, on the other hand, are solely responsible for the application rate and the droplet pattern (adjusted by altering the pressure) and do not affect the direction of flight. As such, being able to vary the air flow is vital, as it is largely responsible for the precise application on the plants and thus for potential savings in plant protection products.

Regardless of the model series, the top nozzle of the top air outlet and the bottom nozzle of the bottom air outlet are always directed within the canopy range (see diagram). Achieving the correct alignment is important for alternate row application (see "Special features for viticulture"). In this case, the nozzles should be aimed at the second row and not the first.

Ensure that the air outlets are only used within the scale range. This prevents the turbine components from getting coated in product and streaks forming on the foliage. This applies to all models and outlet versions – they only differ in terms of the width of the air outlet and the resulting number of nozzles.

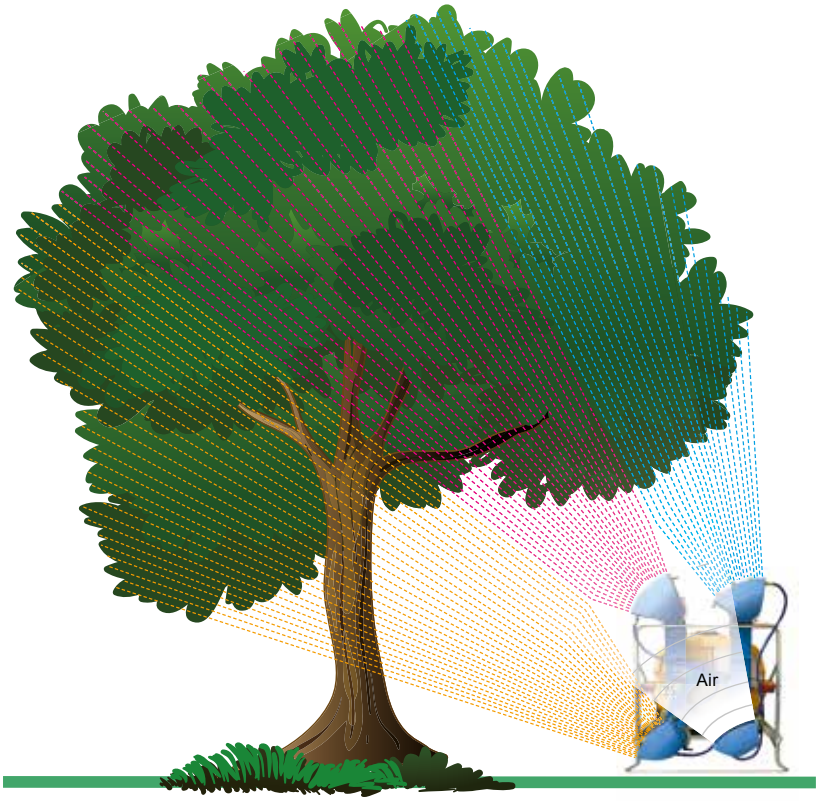




Directing the air flows for young plants and tall-stemmed crops

For young plants or low-growing crops, usually only the lower air outlets transport the plant protection product. The air from the upper air outlets ensures that the spray mist is channelled in the right direction and kept as close to the ground as possible. This ensures the best possible coverage with minimum drift.

To treat trees and tall-stemmed crops, all outlets can also be directed to one side. This gives you twice the range and height when applying plant protection products. Symmetrical distribution of the nozzles means that, unlike conventional blowers, the radial blower has the identical setting on both sides.



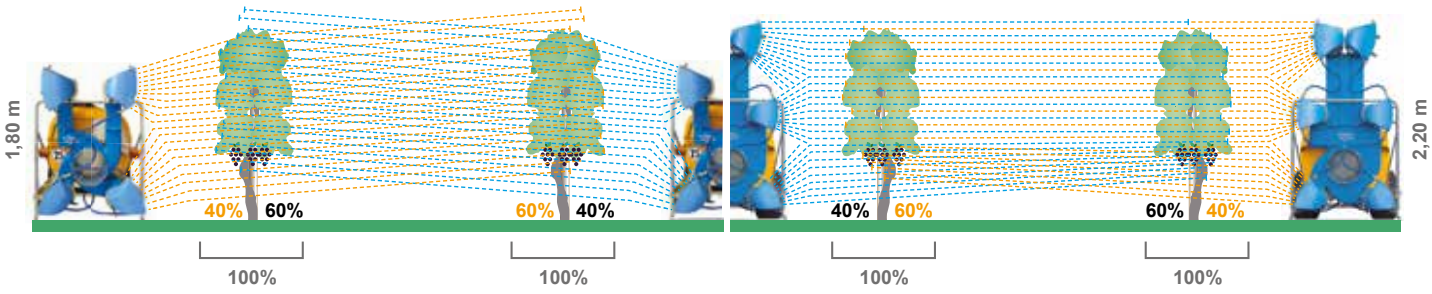
Special features for viticulture

For a good yield level and the best grape quality, the plant protection product needs to thoroughly penetrate the foliage of the individual vines, so that both the underside of the leaves and the fruit set are fully and evenly coated. This enables the plants to withstand high levels of infection threat.

The VICAR radial blower has a higher air speed as it is designed to be used only on alternate rows, with the advantage that it not only achieves much greater penetration of the plants in the first row, but also better adsorption of the pesticide in the second row. Depending on the width of the air flow and the resulting speed losses over distance, the average coating rate lies at around 40% for the first row and up to 60% for the second row. This means that, if you work backwards and then forwards down alternate rows, you can achieve a nearly 100% application rate on each side of each grapevine.

The quality of application on the first row is the crucial factor here. The greater penetration achieves a uniform and comprehensive coverage without any spray shadows on the underside of the leaves and the grape trusses. For contact agents in particular, uniform coverage of the entire surface is essential.

This approach not only saves on the cost of purchase of multi-row crop protection technology systems, but also fuel and labour costs due to the time saved. Another positive side effect of this application technique is the regular cleaning of the grape zone. Impurities such as blossom and leaf debris which result from tending the canopy are removed by the high air speeds. Better ventilation and the associated drying out of the plants prevents the formation of fungi. This has a positive effect on the quality of the grapes.

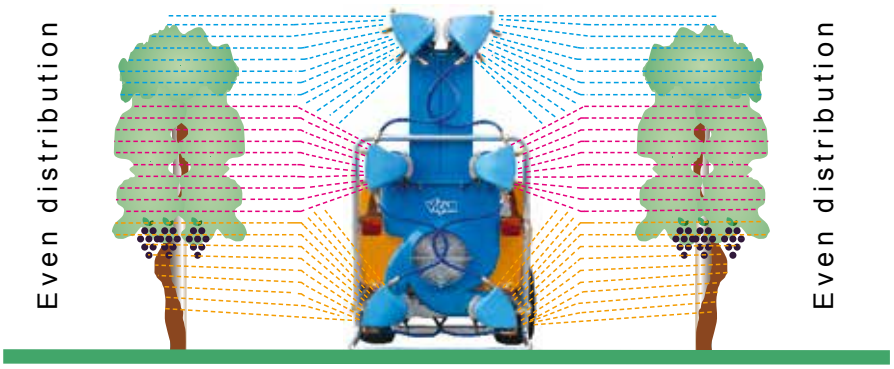


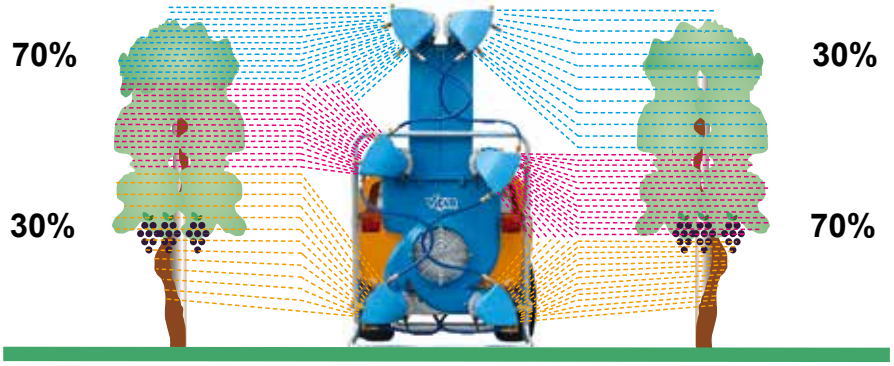
Models specifically for viticulture

The two models 456 and 460 each have an additional air outlet with central nozzles. This feature can be used to control the overlap – i.e. the percentage distribution of the plant protection product on the foliage. To avoid gaps in coverage, the central air outlet must be centred between the upper and lower outlets. This is the only way to ensure an even distribution of the plant protection product over the entire foliage.

If you draw the central air outlet downwards towards the grape zone, you can achieve up to double coverage, for example for a grape wash. The same applies to the targeted treatment of the shoot tips (e.g. in the case of peronospora) – simply draw the outlet upwards within the scale range. This does not create a spray shadow.

As the percentage distribution of the plant protection product can be adjusted via the air flow in the 456 and 460 models, there is no need for different nozzle gauges. This makes it much easier to calculate the application rate.





For all applications

The radial blowers from VICAR can be used in vineyards, fruit farms, hops farms, tree nurseries and on special crops.

What growers say about VICAR plant protection technology