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Amazone ArgusTwin & WindControl



The wind sensor sits on top of the extendable mast on the Amazone fertiliser spreader.

Photos: Weninger

Fertiliser spreading despite wind

Automatically adjust the lateral distribution, compensate for crosswinds and make better use of time: With ArgusTwin and WindControl from Amazone this is possible. Two farmers report on their experiences with it.

By Lukas Weninger, Landwirt journalist

While pneumatic fertiliser spreaders are practically immune to the influence of wind, the use of centrifugal spreaders can quickly be limited by crosswinds in particular. This can result in under-fertilised or over-fertilised crops and the subsequent consequences including symptoms of crop deficiency and thus reduced yield, difficulty harvesting due to lodging or uneven/insufficient quality of the harvested crop. Farmers typically use a „gut feeling“ or the laying out of test trays to assess whether the wind is too strong for fertiliser spreading or whether lateral distribution will still be suitable.

14 tireless eyes

For the automatic adjustment of the lateral distribution and the compensation of crosswinds Amazone offers two optional systems, ArgusTwin and WindControl. ArgusTwin consists of 14 radar sensors mounted above the two spreading discs. They constantly monitor the spreading direction of the fertiliser in real time. In the event of variations, the system automatically adjusts the feed point of the fertiliser onto the spreading discs by means of an electric feed system (also optional, but required for this purpose), thus correcting the lateral



Thomas Schmidt is the farm manager at Agropan GnbR, which has now used ArgusTwin and WindControl for the second season.

distribution of the left and right spreading discs, each independently of the other. The direction of spreading depends on the fertiliser qualities, the working width, the spreading disc unit and disc speed. ArgusTwin can compensate for changing qualities of fertiliser, worn or dirty spreading discs, driving on slopes and the starting and stopping of the tractor.

For the ArgusTwin itself no calibration run is necessary, the system works immediately - also with active part-width section control and border spreading. Only the current fertiliser type must be calibrated once per season via test mats and an app (Amazone mySpreader). The radar sensors operate independently of dust and dirt, the system works without moving parts - so is maintenance-free. ArgusTwin therefore optimises lateral distribution, while the optional weighing system ensures the correct quantity is spread.

Sensor in lofty heights

Amazone offers a further upgrade for automated fertiliser spreading with WindControl. This system constantly monitors the influence of the wind on the spread pattern and automatically compensates for this alongside the ArgusTwin. The technology is a wind sensor, which is mounted on an extendable mast at the front of the spreader (developed according to Prof. Dr. Karl Wild, HTW Dresden). The mast swings up or down automatically when the spreader discs are switched on or off. In the transport position the sensor is protected from

dirt or hanging branches. In the working position, the sensor protrudes above the cab so the wind can be measured without being influenced by the tractor.

The sensor records the wind direction and speed and sends the measured values to the terminal. This, together with the information from ArgusTwin, calculates new settings for the feed system and the spreading disc speed. In the event of a crosswind, the speed of the spreading disc facing the wind increases and the feed system is rotated outward. The spreading disc facing away from the wind undergoes the opposite change (reduced speed, feed system turns inwards).

With WindControl, Amazone promises larger time windows for spreading in wind as well as maintaining a good spreading pattern even under changing conditions. If the system is no longer able to compensate for the influence of the wind or if changing wind gusts occur too frequently, it issues an automatic warning to the driver.

From autumn, Amazone will also offer the two systems separately - until now, WindControl was only available in conjunction with Argus. ArgusTwin costs 7,250 Euros, WindControl costs a further 3,515 Euros (list prices excl. VAT). We now present the experiences of arable farmers using ArgusTwin and Wind Control on their Amazone fertiliser spreaders.

Benefit Exceeds Cost

In the hilly and windy Weinviertel region of Lower Austria, Agropan GnbR, based in Ernstbrunn, manages around 1,670ha of arable land as a service company for several estates. The fertiliser spreader on the farm - until 2002 a



A total of 14 radar sensors (the black components on the pipe hanger) monitor the discharge angle of the spreader.



When folded into the transport position, the wind sensor remains within the height of the vehicle.

pneumatic spreader and since 2016 an Amazone ZATS 4200 in 30m wide tramlines - has an annual operational area of around 4,500ha. "Over these five years, fertiliser worth more than one million euros has flowed through this spreader. That's why precise spreading is very important to us," says plant manager Thomas Schmidt. In 2018, he exchanged the spreader for an identical model with ArgusTwin, followed by the addition of WindControl in spring 2020.

Schmidt's experience since then has been positive: „In the spring, the spreader is adjusted once to the respective type of fertiliser using test mats. Then you can rely on it automatically adapting to fluctuating fertiliser qualities with varying moisture. The application quality is always the same and, above all, good. We've checked that against the test mats several times out of interest - and it's always been right.“

In addition to better lateral distribution, there is more impact due to a longer usable time window. „With WindControl, we can still spread fertiliser with a clear conscience in windier conditions where we might otherwise have stopped. Conversely, the system has sometimes advised us not to spread - against our gut feeling," says Schmidt.

The farmer knows the production figures of Agropan GnbR by heart. Nevertheless, the costs saved by having evenly fertilised crops can hardly be quantified. "The cost-benefit calculation is certainly positive for the amount of fertiliser we apply," Schmidt is sure. Just under 11,000 euros list price, spread over an estimated ten years of use - the benefit is certainly greater than the estimated 1,500 euros total costs per year. In any case, the primary goal is

a good cross-distribution. He achieves this goal with ArgusTwin and WindControl. With WindControl, Schmidt can also extend the operating times.

“Reduced burden for my employees”

Different region, similar challenges: Anton Stangl Jr. runs an arable farm in Moschendorf in southern Burgenland. He also changed his „old“ ZA-TS 4200 to the same model with ArgusTwin and WindControl in March 2021. The fertiliser spreader also works in 30m wide tramlines and has an annual operating area of around 1,500ha. "We are increasingly struggling with strong winds in the spring - or rather, against them. With some types of fertiliser we had noticed clear deficits in distribution accuracy. Hence our investment in this technology," says Stangl. On his farm, fertiliser spreading is done exclusively by his employees. For them, WindControl is a relief because they no longer have to pay attention to the wind. Already after this first season (which was again very windy) Stangl noticed a better lateral distribution. "The one-time adjustment of the respective fertiliser type is done in a few minutes with the test mats and the mobile phone app. Even with overlaid fertilisers, we now achieve good distribution accuracy," the arable farmer sums up. ■



Anton Stangl jun. is an arable farmer in southern Burgenland and has been using Argus Twin and WindControl since spring 2021.

Foto: Paar

Tipp

Tip More pictures and a video of this field report can be found at: www.landwirtschaft-media.com/landtechnik