

Press release

Voitsberg, September 2021

Reliable harvest thanks to irrigation

Bauer is the expert for irrigation issues and offers numerous energy-efficient solutions for agriculture in climate change

Extreme weather events are increasing. Long periods of drought are followed by enormous amounts of precipitation that soil and plants cannot absorb. The past hot summers have shown that irrigation is an important measure to ensure yields. It is clear: With climate change, the importance of irrigation will increase in the future.

Multiple reasons for irrigation

Especially in times of climate change, irrigation is the basis for ensuring the supply of food. In addition, farmers indicate different reasons for purchasing an irrigation machine. One reason is the absolute need to increase productivity due to scarcity of land. Or to irrigate zones that suffer from very unfavourable natural conditions. But also the increase in quality is an important factor for investing in irrigation systems. A lack of water means stress for the plant, which of course is also reflected in the starch, sugar and energy content of the individual crops.

The right dose at the right time in the right growth phase

It is crucial for efficient irrigation and thus for a good harvest that the plant is supplied with water at the right time, in the right dose and in the right growth phase. Needs-based irrigation is the basis for an optimal harvest and is considered an insurance that the use of seeds, fertilizers and energy really pays off. In England, for example, where it normally rains often, it is essential to irrigate potato fields. Especially in spring, when the potatoes have to sprout, it does not always rain sufficiently in England. If the potato-plant is not supplied with sufficient water at this stage, it is already predetermined that yields will be very poor. Not only potatoes, but also field vegetables and beets are among the main crops that do not grow satisfactorily without irrigation. At the same time, we are also observing that malting barley and corn increasingly require additional irrigation.

Technical trends

Water is a precious resource and only available in limited quantities. It is therefore all the more important to only irrigate the exact dose required. For this reason modern irrigation management has to take current climate data, such as soil moisture and conditions, temperature and humidity into account, in order to calculate and give the necessary water requirements for the crop. Reliable, precise irrigation control provides valuable services, preferably as automated as possible. Modern irrigation technology is heading precisely in this direction: Precise control, monitoring, operational planning, automation and smart irrigation are indispensable for many farmers. The more efficiently water is used, the less energy is wasted. Energy efficiency together with manpower is an important cost factor when using different irrigation systems.

The right irrigation solution for the farm

Whichever mechanical irrigation system you chose, it is all about water distribution efficiency. A proven mechanical irrigation system used worldwide is the so-called hose reel machine. The great advantage of this system is that it can be moved flexibly and easily from one field to the next. Maintaining an even feed speed is essential for efficient use of the hose reel irrigator in order to ensure constant and precise water application over the entire length of the field. The optimum speed, which can be determined from special performance tables, can be precisely set with an irrigation computer and maintained over the entire irrigation operation. The modern devices are absolutely precise and therefore also water-saving. Using special applications - such as the GPS-supported app "SmartRain" from Bauer - it is also possible to monitor and control the irrigation machine. This saves working time and of course travel time to the machines, which brings us to the disadvantages of this system: Due to the increased workload and energy consumption compared to other methods, it is comparatively expensive to operate.

Trend towards low-pressure systems

For this reason, the trend in irrigation is moving more and more in the direction of low-pressure systems that require little manpower such as pivot systems. Thanks to the GPS or underground-controlled corner-arms it is now also possible to irrigate the corners of a field, which was a problem in the past. Thus, previously unproductive zones now can be cultivated and the available area can be optimally utilized. Due to the further development of pivot systems to linear and so-called centerliner systems, the perfect solution can now be found for every surface shape.

The water distribution efficiency of all of these systems is very high due to the use of low-pressure spray nozzles - the main advantage is their energy efficiency. Most spray nozzles nowadays already work with a connection pressure of approx. 0.8 bar and are therefore far superior to other systems in terms of energy consumption.

However, these types of machines are now even going a step further and using techniques that allow individual nozzles of each machine to be switched on and off individually. This principle is called VRI (Variable Rate Irrigation) and is an integral part of modern precision irrigation. With VRI, the application rate can be individually adjusted to the corresponding soil type, plant species and the growth stages of different crops. On the one hand, this allows the water distribution to be optimized and, on the other hand, there is also the possibility of very precise plant fertilization using sprinkler systems. The result is an application rate that is perfectly tailored to the culture and thus an economically optimized and responsible use of the precious resource of water.

Pivot and linear systems impress with a high degree of automation as well as reduced operating costs, since they need lower connection pressures. However, a certain field size is required for these systems to be economical. It must also be taken into account that permanently installed systems cannot be fully utilized every year due to crop rotation and the consequent cultivation of crops that do not require much irrigation. BAUER has been dealing with these and other irrigation problems for decades and invests heavily in the development of energy-efficient and therefore water-saving control technologies. For a green world and a future worth living in.

The Bauer Group at a Glance

Since its foundation in 1930, the BAUER Group - headquarters in Voitsberg, Styria, has been focused on irrigation and slurry management technology. Whilst initially producing wastewater and slurry pumps, the company first became an international player in the sector of irrigation technology in 1947 with the patent-protected Bauer lever lock coupling - named after Rudolf Bauer, the company founder. Today the company is developing rapidly in the biotechnology sector with wastewater treatment & biogas plants and it is focusing on three main sectors: irrigation management, waste water management as well as energy management.

BAUER is the Global market leader in irrigation technology: A total of more than 2.5 million hectares are irrigated globally. A major part of sales representing 50% of the total turnover is achieved in the sectors of slurry and environmental waste processing. The BAUER Group exports to about 100 countries of the world. With approx. 650 employees, Bauer generated consolidated net proceeds of about 145 million Euros in the financial year 2020/21. With an export ratio of 90%, the main markets of the BAUER Group are Germany, France, the CEE countries, China, the USA, Australia and South America. In October 2016 a new plant in Brazil was put into operation.

The BAUER Group currently consists of 16 companies worldwide, including the well-known German labels BSA, Eckart, and FAN.

Product Range

- Various irrigation systems
 - Automated pivot and linear systems, i.e.: Centerstar, Centerliner, Linestar
 - Irrigation machines, i.e.: Rainstar, A3 or ProRain
 - Traditional irrigation, i.e.: pipe systems and solid-set plants
 - Digital control solutions for a smart irrigation and slurry management (Signo 4.0, SmartRain, SmartTouch)
- Slurry transportation (slurry tanks)
- Innovative slurry treatment: mixers, pumps, separators, composting and distribution
- Pipes and fittings
- Wastewater treatment and separation technology for the food and paper industry
- Components for Biogas plants
- BRU Bedding Recovery Unit
- Bauer self propelled technology

Internet Services

- Configuration of all machines
- Ordering of all spare parts

For further information see: www.bauer-at.com



Potatoes need appropriate irrigation to grow optimally.



The hose reel irrigator is a classic irrigation machine. This Rainstar E55 is irrigating sugar beets.