

Ventilation a major cost factor for farmers

Economical EC fans for barn ventilation

Rising costs, falling prices, drought – farmers are fighting against increasing cost pressure. This makes it all the more important to find potential for savings. Electricity costs for ventilation account for up to 70% of overall operating costs, an area where efficient EC fans from ebm-papst offer great potential for savings. A farm near Celle took a chance on replacing its old fans – and reaped the benefits.

In agriculture, barn ventilation is subject to a stringent set of conditions. According to DIN 18910, the air velocity in pig barns must not exceed 0.2 m/s in winter and 0.6 m/s in summer. Barn air also contains aggressive ammonia, among other things. Fans from ebm-papst are easy to control and extremely resistant to corrosion, making them ideally suited for this application.

Conversion from AC to energy-saving EC fans

The Momeyer brothers near Celle monitored their energy consumption for months and discovered that ventilating their pig farm with AC fans caused excessive costs. They therefore opted to retrofit their ventilation system with EC fans from ebm-papst. To implement this technically, the brothers looked for a competent partner. They finally found one in Heinrich Dönselmann-Theile from hdt Anlagenbau. Installing the new axial fans was very simple, as the existing openings and fastening points could be used. The number of fans also remained the same - there are still twelve. The new fans were divided into three groups, each with four fans: two groups for the stale air and one for the supply air. The four fans for the supply air are also located in a heat exchanger, which heats the supply air and ensures that the animals are not cold in winter due to the ventilation. The fans are also particularly quiet, making them pleasant both for people and animals.

Remote monitoring for barn ventilation

The output of the EC fans used can be controlled by software and their status can be conveniently monitored at any time via PC or smartphone. Replacing the fans was worthwhile for the Momeyers – indeed the forecast energy savings were even exceeded. Instead of 35%, savings were already over 50% after six months. This saves over 15,000 kWh per year, which at an electricity price of €0.30/kWh amounts to a total of €4,500.

To save energy, the fans only run at 80 percent of their output. It is only during extreme weather, for example when it is over 38 degrees outside, that the software activates the remaining 20 percent, thereby ensuring a consistently pleasant climate in the barn.

Katrin Lindner
Trade Press Coordinator
Phone: +49 7938 81-7006
Katrin.Lindner@de.ebmpapst.com

Corinna Schittenhelm
Trade Press Coordinator
Phone: +49 7938 81-8125
Corinna.Schittenhelm@de.ebmpapst.com

15. July 2020 - Page 1 of 4

Press Relations contact
ebm-papst Group

Phone +49 7938 81-7105
twitter.com/ebmpapst_news
facebook.com/ebmpapstFANS
youtube.com/ebmpapstDE
www.ebmpapst.com

Ventilation a major cost factor for farmers

Economical EC fans for barn ventilation

Box text

EC technology

The EC motor (EC = Electronically Commutated) is a permanently excited synchronous motor operated with power electronics. This enables any operating speeds to be achieved regardless of the mains frequency used. Power electronics integrated into EC motors allow their speed to be adjusted as required via a 0-10 V control signal or MODBUS RTU interface. This ensures that a high degree of efficiency is maintained even in partial-load operation. Switching from conventional AC to EC technology is particularly worthwhile for devices with a long duty cycle, as the savings in energy expenses mean that the cost of converting can be recovered within a short period.

When using the Modbus RTU interface, numerous operating parameters can also be queried and monitored in ongoing operation alongside the control signals. If necessary, the operator of a system can quickly adjust operating parameters in order to react promptly to changing requirements. Simultaneously recording operating hours facilitates preventive maintenance for effective minimization of servicing time.

Katrin Lindner
Trade Press Coordinator
Phone: +49 7938 81-7006
Katrin.Lindner@de.ebmpapst.com

Corinna Schittenhelm
Trade Press Coordinator
Phone: +49 7938 81-8125
Corinna.Schittenhelm@de.ebmpapst.com

15. July 2020 - Page 2 of 4

Press Relations contact
ebm-papst Group

Phone +49 7938 81-7105
twitter.com/ebmpapst_news
facebook.com/ebmpapstFANS
youtube.com/ebmpapstDE
www.ebmpapst.com

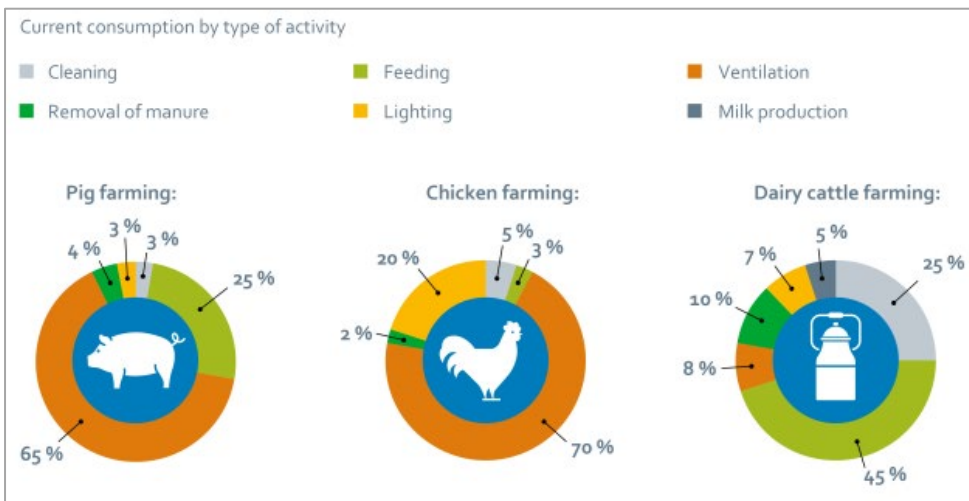


Fig. 1: Current consumption by type of activity*
*Sources: Austrian Chamber of Agriculture, agrar heute, Destatis, Zeit Online

Ventilation a major cost factor for farmers Economical EC fans for barn ventilation

Katrin Lindner
Trade Press Coordinator
Phone: +49 7938 81-7006
Katrin.Lindner@de.ebmpapst.com

Corinna Schittenhelm
Trade Press Coordinator
Phone: +49 7938 81-8125
Corinna.Schittenhelm@de.ebmpapst.com

15. July 2020 - Page 3 of 4

Press Relations contact
ebm-papst Group

Phone +49 7938 81-7105
twitter.com/ebmpapst_news
facebook.com/ebmpapstFANS
youtube.com/ebmpapstDE
www.ebmpapst.com



Fig. 2: Fans from ebm-papst operate reliably and efficiently in pig barns, even under tough conditions.



Fig. 3: The pig barn at the Momeyer's farm near Celle was equipped with new ebm-papst fans for ventilation and now saves over 50% of the electricity costs.

Ventilation a major cost factor for farmers Economical EC fans for barn ventilation

Fig. 1	ebm-papst
Figs. 2+3	Lukas Zwiessele for ebm-papst
Characters	approx. 2,600, including headings and sub-headings + 1,150 for EC technology box text
Tags	EC technology, axial fan, energy savings, barn ventilation, agriculture
Link	https://mag.ebmpapst.com/de/branchen/kaelte-klima/lueftung-landwirtschaft-ec-ventilatoren-ebm-papst_21686/
Videos	https://youtu.be/aGIKxyOulZc - Ventilation special https://youtu.be/e2_ZzMhiC5o - Momeyer: overall project

Katrin Lindner
Trade Press Coordinator
Phone: +49 7938 81-7006
Katrin.Lindner@de.ebmpapst.com

Corinna Schittenhelm
Trade Press Coordinator
Phone: +49 7938 81-8125
Corinna.Schittenhelm@de.ebmpapst.com

15. July 2020 - Page 4 of 4

Press Relations contact
ebm-papst Group

Phone +49 7938 81-7105
twitter.com/ebmpapst_news
facebook.com/ebmpapstFANS
youtube.com/ebmpapstDE
www.ebmpapst.com

About ebm-papst

The ebm-papst Group, a family-owned company in Mulfingen, Germany, is the world market leader in fans and drives. Founded in 1963, the technology leader with its core competences motor technology, electronics and aerodynamics, has set international market standards ever since. With over 20,000 products, ebm-papst offers customized, energy-efficient and intelligent solutions for virtually any ventilation and drive technology requirements.

In fiscal year 2019/20, the hidden champion achieved a turnover of 2.188 billion euros and employed almost 15,000 people in 29 production sites (e.g. in Germany, China and the US) as well as in 48 sales locations. With their fan and drive solutions, ebm-papst defines and sets the benchmark in practically all industries, such as ventilation, air-conditioning and refrigeration, heating, automotive, IT, mechanical engineering, catering and household appliances, intralogistics and medical engineering.