

# Day-old chick transport: ensuring maximum comfort and quality

Transporting day-old chicks from the hatchery to the farm is a high-risk yet crucial aspect of poultry farming. Even though the journey may only take a fraction of the chicks' lives, this relocation exposes them to novel and potentially harmful conditions that can impact both life expectancy as well as the overall performance of the flock.

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The sensitivity of newly hatched chicks to their surrounding climatic conditions during transport is one of the factors that make it extremely demanding. With large-scale farming practices, hundreds of thousands of chicks may travel together for tens of hours, regardless of the time of day, season, or location, from the Arctic Circle to the hottest equatorial regions.

In addition to the climatic conditions outside the transport vehicle, the conditions inside the vehicle and the cargo itself are crucial. With hundreds of thousands of chicks generating enormous heat energy (each emitting around 0.5W), the air conditioning system during transport must operate optimally to ensure the chicks' well-being.

## Three pillars: safety, performance and welfare

While hatcheries and farms can easily rely on technology to guarantee optimum conditions, transportation naturally limits access to space, energy supply, and backup systems. This dynamic further complicates the already delicate process of delivering high-quality chicks in order to maintain optimum farm performance.

Successful day-old chick transport is a complex, risky operation in the poultry industry that comprises three pillars, none of which leave room for compromise.

The first pillar is safety, which involves overcoming several specific risks. One of these is the volatile fluctuations of the internal climate during transport, where conventional transport technology is not

always able to ensure optimum temperature and sufficient fresh air supply at every conceivable point in the cargo hold.

In addition, air conditioning technology often lacks reliably sufficient backup systems, meaning that even under ideal conditions, a well-functioning AC system is always at risk of a fatal failure that cannot be dealt with in time to maintain chick safety. Human failure is another key safety risk. Complex controls create a large margin for human error and are not autonomous enough to effectively police themselves.

VEIT Electronics, a manufacturer of day-old chicken transport vehicles, has managed to eliminate all these risks. They have done this by combining a unique 3D AirFlow air distribution system, a fully dual air-conditioning system with two standalone cooling circuits, and an autonomous power management system that continuously ensures an optimum climate inside the cargo compartment, all without the involvement of the driver. The vehicles are also equipped with the intuitive VEIT Pilot control interface.

The second pillar is the performance of the vehicle's air conditioning system. Cargo capacity and, consequently, the efficiency of the entire operation depend greatly on the ability of the AC system to maintain a comfortable climate for the chicks.

In this respect, VEIT vehicles far exceed current benchmarks in the transport of day-old chicks.

A common performance indicator for air conditioning technology is cooling capacity. Each circuit of the doubled cooling system in VEIT semi-trailers can provide 70KW of cooling power on its own, and 90KW when both work in tandem, to ensure a comfortable climate, even in the most

extreme conditions. This high level of performance can be enhanced even further when equipped with the PAD Cooling air humidification system.

The third pillar is welfare. A chick's comfort and well-being during transport have a strong direct correlation with future growth performance. When stress levels rise, chicks tend to eat and drink less, leading to increased mortality rates and standard deviations from expected growth curves. Vibrant, healthy chicks yield significantly better 3- and 7-day mortality rates and are able to benefit most from their genetic growth potential. The pillar of welfare extends even beyond that of the chicks – it also includes environmental friendliness and sustainable business practices. This is a highly-discussed topic in high-capacity chick transport, primarily due to its naturally high energy consumption.

In its proactive approach to global poultry needs, several years ago VEIT Electronics invested heavily into developing the most efficient management of energy resources.

As a result, their vehicles are equipped with EcoTransport technology, which allows energy to be drawn directly from the vehicle's engine for ventilation, limiting dependence on the high-consumption engines used for the AC system. Not only does this reduced fuel consumption improve emissions and environmental impact, but it also translates to significant savings in fuel costs. For reference, the EcoTransport system in a VEIT trailer can save over €190,000 in fuel over the first ten years of operation.

Although chick transport poses numerous risks to both the chicks themselves and profit margins, with the right equipment they can be avoided. ■