**PRESS RELEASE**

**AURA**

***The shortest route between the trough and the clamp face!***

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Unveiled to the public on September 2021 at SPACE in France, the self-propelled autonomous **AURA** mixer is the next generation of automated ration distribution solutions for dairy and fattening operations.

With its built-in loading module, **AURA** stands out thanks to the flexibility it offers farmers through a whole range of functions, including loading, weighing, mixing, distribution, fodder push-back and reports on completed tasks.

**AURA** has won some prestigious awards, including an Innov'Space Award in September 2020, a SIMA Award in February 2021, an Inel d'Or in September 2021, and a Sommet d'Or in October 2023

**AURA** has been available in France since 2021, and will be rolled out internationally in 2026. The **AURA** self-propelled mixer will make its international début at the EURO TIER livestock exhibition in November 2024.

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**AURA in France:**

Impressive Performance and Data!

Today, the entire fleet of machines totals almost 40,000 working hours and a total distributed volume of over 37,000 tonnes of mixed rations.

Some units have achieved up to 13,000 hours of operation, averaging 15 hours of daily use. These impressive technical results validate the excellent design and component choices made by our R&D team.

**AURA, Supporting Farmers in Precision Livestock Management**

AURA is designed to meet the diverse needs of farmers. In France, our pre-series machines are predominantly used by dairy farmers, but they are also proving invaluable to beef and goat producers. Daily operating times vary, depending on farm size, the number of feedings, and the distance between the clamp faces and the troughs, ranging from 3 to 15 hours per day.

AURA delivers exceptional precision in feeding, consistently loading the exact amount of coarse forage. Across the entire fleet, the average deviation is less than 1.3% between the programmed quantity and the actual distributed quantity.

Utilizing "linear feeding" technology during distribution, AURA continuously tracks its position along the trough and calculates the remaining ration and the amount distributed. It automatically adjusts its distribution speed, door angle and unloading auger speed, ensuring consistent feed-out along the entire length of the lot.

Interfaces like Kuhn Librafeed enable farmers to instantly modify the machine's task programming. The reporting information provided allows users to interact quickly and make informed decisions regarding feeding.

**AURA, what users are saying :**

AURA's onboard loading system significantly minimizes the workload associated with feeding tasks for farmers, such as weekly cleaning and uncovering of the clamp face. This translates to less than 0.5 minutes per dairy cow per week, equating to under 1.5 hours weekly for a herd of 150 dairy cows.

**AURA** also excels in multi-distribution, allowing farmers to mix and distribute rations directly from freshly harvested forage stored in clamps.

Users frequently mention the calm and contented demeanour of their herds shortly after adopting AURA. Multi-distribution reduces competition among animals at feeding troughs

The animals also go to the milking robots more often, resulting in improved milk production.

AURA reduces feed refusals and forage area requirements by providing fresh rations and frequent push-backs throughout the day.

Even during hot summer periods in poorly ventilated buildings, AURA maintains animal appetite with fresh forage, resulting in improved dairy and fattening performance.

Many users have also reported reduced veterinary costs, attributed to AURA's 3 m³ mixing tank equipped with a magnetic device that captures potentially harmful metal pieces from smaller mixes, mitigating risks of intestinal injuries in animals.

**AURA, a built-in loading module:**

* **AURA** has a multi-purpose milling head for loading all types of silage, and fibres such as hay, straw and grass haylage. The conveyor-mounted milling head is sized to reduce energy consumption.
* For enhanced efficiency, the milling head-conveyor unit moves laterally across the machine's width to complete all silage passes with minimal machine movement at the clamp face, resulting in significant time saved per work cycle!
* The other ration components, such as concentrates and mineral additives, are loaded via peripheral augers mounted on the farm’s various stocks. Communication is established using WIFI via Kuhn External Control modules. Once the mixing tank is positioned under the auger, **AURA** starts the component filling program with an exceptional level of precision.

**AURA, a weighing data management module:**

* The tasks sent by the farmer are recorded in the Kuhn Librafeed feed management software. This function records the precise quantities of each ration component, the distribution points and the number of daily distributions.
* **AURA** strictly follows this information and accurately makes the mixed rations requested by the farmer. **AURA**'s built-in weighing system is accurate to the nearest kilo!

**AURA, a mixing module:**

* **AURA** has a 3 m3 mixing tank equipped with two vertical augers. We opted for a two-auger design because it offers a lower power requirement than a single mixing auger with a larger diameter. The twin-auger design also ensures good mixing quality in fibrous rations.
* **AURA** can therefore provide daily feed for herds of up to 280 dairy cows and all their heifers.
* For the longevity of the components in contact with the feed, the lower part of the tank and 100% of the mixing augers are built with K-NOX technology, which guarantees a service life 6 times longer than the steel grades traditionally used on trailed or self-propelled mixers.

**AURA, a distribution module:**

* Like the other automated feeding systems on the market, **AURA** performs multi-day feeding tasks in the time slots and frequencies the farmer programs in their Kuhn Librafeed software. Supplying animals with a fresh, high-quality mixed ration stimulates their intake and keeps them calmer in the stables.
* Distribution is handled by a cross conveyor belt that unloads to the right or left of the machine. This design minimizes manoeuvring in different building configurations, reducing idle time for AURA.
* Positioned at the rear of the machine, the conveyor feeds out rations all the way to the end of the feed rail in non-through buildings.

**AURA, a fodder push-back module:**

* During distribution or in a dedicated pass for feed push-back, AURA's feed push-back system includes rotating brushes that push feed remnants close to the feed rail.
* The brushes can push feed on both the right and left, allowing farmers to adapt to all feeding alleys without unnecessary manoeuvring.

**AURA, a navigation module:**

* **AURA** is a 100% accessible solution, designed for total integration with existing farm infrastructure. It comes equipped with two steering systems: RTK GPS SIM card-free technology coupled with motion sensors for use outdoors, and LIDAR technology for indoor manoeuvring. The systems ensure precise positioning down to the centimetre.
* If the GPS signal is lost, **AURA**’s motion sensors scan its surroundings to help it accurately find its way around the building or yard.
* **AURA** moves along virtual trajectories recorded in its Kuhn Farm Track interface which allows the farmer to adapt the speed of the machine according to the different routes. Kuhn Farm Track makes it possible for farmers to temporarily close off certain routes depending on what is happening on the farm.
* **AURA** performs well on slopes of up to 20%, which means there’s no need for any special flooring or land restructuring on most farms looking to automate their feeding operations.

**AURA, a safety module:**

* **AURA** is a completely autonomous machine that must comply with applicable standards. Equipped with a safety system that includes radars, lasers, ultrasonic sensors and sensitive edges surrounding the machine, AURA operates safely within its environment. As Kuhn began to develop **AURA**, we joined a task force on ISO 3991, specifically for automated feeding systems.
* The integration process into livestock operations is carefully managed through a number of key stages, ensuring that AURA operates seamlessly in an environment that meets all regulatory standards (safety pre-inspection, Safety Check inspection, etc.).

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