



07/12/2020

"DELTA X" by Bioret Agri - Silver Medal at EuroTier

## **SELECTIVE REMOVAL SYSTEM FOR DAIRY FARMING WASTE**

This year's EuroTier Innovation prize list is featuring the reduction of dairy farm emissions (ammonia, carbon dioxide, etc.) The gold medal was granted to Cow Toilet, a urinal for dairy cows, while Bioret Agri was rewarded with a silver medal for the Delta X.

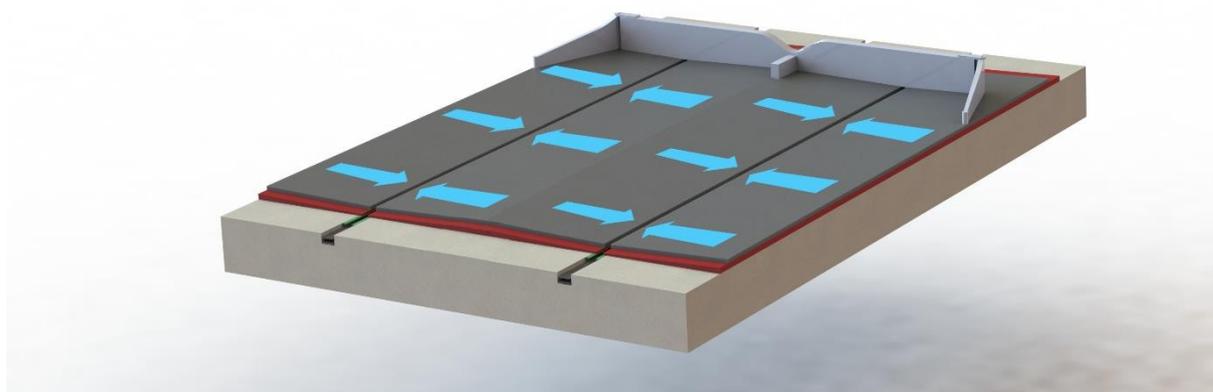
These awards from EuroTier are a world-wide level of recognition from peers for continuous technological innovation. Permanently sparking new ideas, Bioret Agri is frequently awarded for new equipment concepts that positively impact the dairy farming industry and provide sustained improvement in animal lives and zootechnical results.

### > ORIGINAL CONCEPT

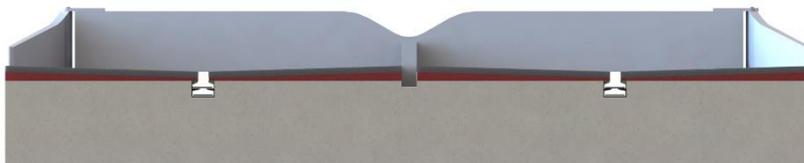
- Very simply, it is solving the dairy cow's slurry creation by impeding its formation.
- To do this, it splits the two phases of waste: collecting the liquids in one direction while collecting the solids in the opposite direction to store them apart from one another.

### > HOW IT WORKS

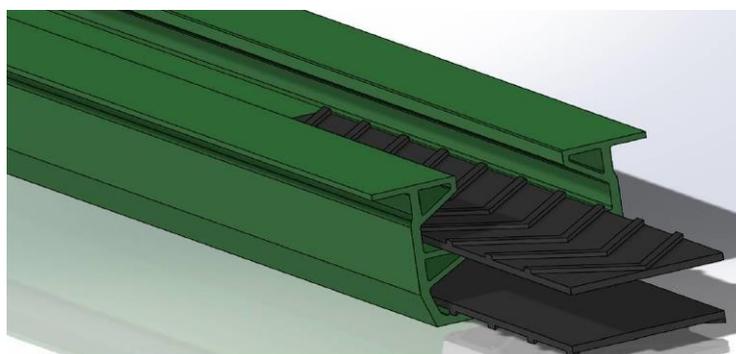
- Two channels are built in the alley flooring and both are fitted with a reinforced belt-based separator system.



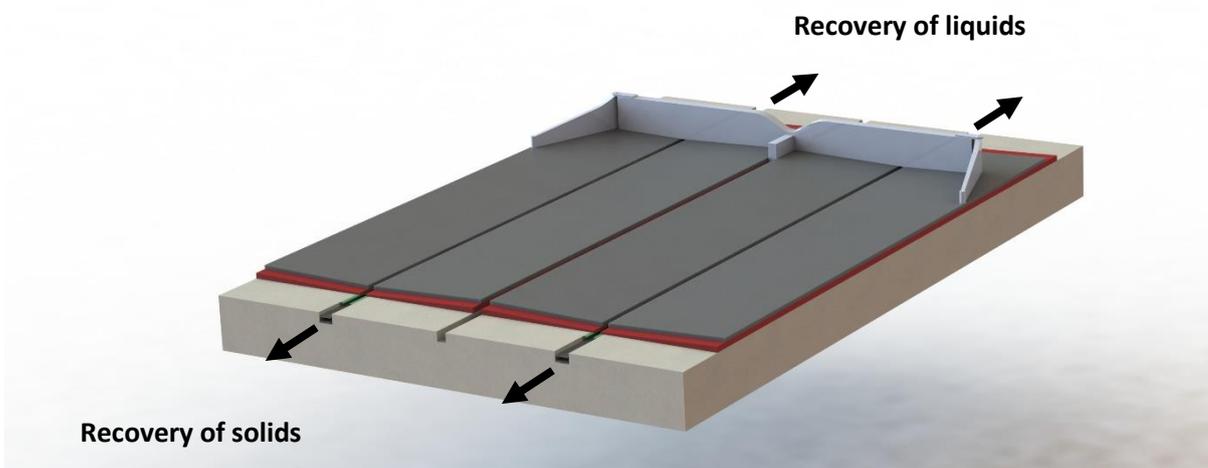
- 3-percent slopes are built on each side of each channel to push the waste into the channels by gravity or scraping.



- Longitudinal belts fitted at the base of each channel are slowly and continuously driven by two rotating pulleys.



- The upper belt conveys solid waste (dung) through the barn, toward a storage pit located at the end of the building.
- During its return, the lower belt conveys liquid waste (urine) toward the other end of the building where it flows into its own storage pit and from which it can be pumped out for longer term storage.



## > BENEFIT FOR FARMING

- Quick separation of urine from manure allows it to immediately flow to the drainage system and to outdoor storage. With no time spent exposed to free air, it does not mix with dung and thereby generates 70% less ammonia emissions.
- Cleaner cowshed (stable) flooring.
- No more unpleasant ammonia smell nor accompanying respiratory issues.
- Cows breathe better, so does the staff.
- Improved milk production and reduction of chronic conditions.
- Better quality solid waste, with increased potential for methanization, composting or spreading. A forthcoming study will confirm the improved carbon balance for the farm, with a quantified emission reduction of CO<sub>2</sub> per cow per year.
- Processed liquid waste, once concentrated, will go back to the environment as a nitrogenous bio-stimulant for crops. It's free and organic.
- Waste in these 2 forms will be better valued in manure spreading strategy and each form, solid or liquid, can be supplied at a different and optimal time based on crop needs. Greater accuracy can also be achieved.

By avoiding the formation of slurry, DELTA X greatly reduces barn emissions of ammonia and produces both precious organic enhancement as well as concentrated organic fertilizer, both free of charge.

Combining synthetic nitrogen fertilizer, the un-emitted nitrous oxide exiting the barn and the reduction in methane emissions from solid waste, the total benefit for the planet is estimated to be around 3 to 4 tons of CO<sub>2</sub> per cow per year. This is excellent news for the dairy farming community which is increasingly under pressure in the global warming debate.

**> DOES IT WORK?**

- For several years, research and development of this concept has led to the establishment of 5 patents in France and abroad.
- The prototype was validated in real operating conditions at the GAEC DU BUISSON dairy farm (Abbaretz – France).
- DELTA X will officially be on sale beginning in April 2021. A first unit is to be installed in the Netherlands in 2021. Two others are currently planned in France in a renovated stable in 2021 and in a new dairy facility with 220 dairy cows and heavy drainage basin issues in 2022.