



Increased productivity and lower mortality for cattle at Arcobaleno Farm in Modena, thanks to improved temperatures.

Supplier: Italkero SRL
Design Engineer: Italkero SRL

Arcobaleno is a farm located in the Modena area (Central/Northern Italy) that supplies milk used for the famous Parmigiano Reggiano cheese production. After a summer with high temperatures of 34°C - 36°C that were negatively impacting on the production and cattle's wellbeing, the management found a solution: evaporative cooling.

Project requirements

Arcobaleno Farm is a big farm in the Modena area, with many stables spanning on a 2000 sqm area with head of cattle used exclusively for milk production. After a summer that reached 34°C - 36°C, the company registered a significant increase in cows' mortality, decreased appetite and therefore lower milk production.

Veterinarians consulting for the farm confirmed as well the link between cows' mortality and high temperatures.

For this reason the management has looked for a solution at the beginning of Summer 2016, in order to avoid the same scenario of the year before.

Solution

Italkero, official supplier of Breezair evaporative cooling products for Italy, suggested evaporative coolers as a solution to meet management's requirements to decrease temperatures, in a situation where traditional air conditioning was not an option due to natural openings of the stables and high installation and running costs.

Breezair in fact is the perfect solution to cool such big areas, ensuring significant savings, since it only uses water and electricity to run. For this reason, Breezair Evaporative cooling is also kind to the environment, not using any kind of synthetic refrigerants to cool the air.

Installation

Italkero has assessed the stables' requirements in terms of temperature and air changes. Arcobaleno used to have a mechanical ventilation system and the stables' structure was ideal for evaporative cooling, with opened side walls.

After an initial installation of 3 Breezair units with axial fan in the main stable as a trial installation, the company has decided to add 2 more units, resulting in a significant improvement in cattle's wellbeing, replicating Spring temperatures and comfort also in the Summer.

Results

Comparing the data of three years in a row, from 2016 to 2018, we can notice a significant increase in the food eaten by the cattle and the milk produced. The decreased temperatures have also improved the cows' distribution in the stable itself, a correct use of the bunks, also avoiding them to line up for drinking.

	2016		2017		2018	
	food eaten (kg)	milk prod. (litres)	food eaten (kg)	milk prod. (litres)	food eaten (kg)	milk prod. (litres)
June	24.77	32.51	25.24	36.10	27.52	37.9
July	23.22	31.21	24.54	34.71	27.44	36.40
August	22.73	32.12	24.54	33.52	24.54	34.71



Benefits

Industrial and commercial buildings but also animal farms usually have heat issues. Air conditioning might seem the obvious solution, but it is expensive to install and maintain; and requires doors and windows to be kept shut. As outside temperatures increase, buildings with inadequate ventilation become unbearably hot and stuffy.

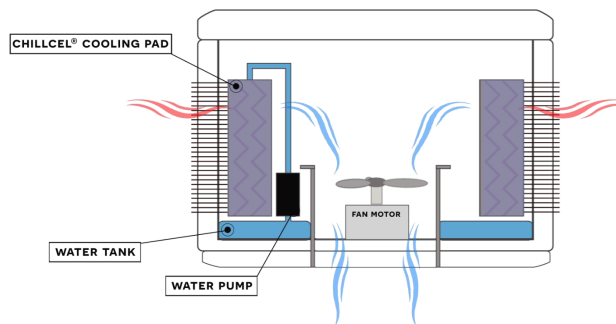
Easy to install and maintain, Breezair evaporative coolers are the best solutions when cooling large and semi-open areas. Running only with water and electricity, they use up to 87% less energy than conventional air conditioning, thus resulting in a significant saving in running costs.

Drawing 100% fresh air from outside, evaporative coolers offer a great health advantage over refrigerated air conditioning, which recirculates the same stale dry air over and over.

How it works

1. Hot outside air is pumped through water soaked pads
2. As the air blows through the pads, water is evaporated and the heat in the air is absorbed
3. A fan then pushes the cool air through a ducting system, which then lets the cool air inside the whole building

Breezair cooling units feature a patented fan: they can also be used in fan mode only (with no water), to blow fresh air through the vents.



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