

Case study: AgHort  
Milk production  
Brazil, South America

#### Quick facts

- Improved animal behaviour
- Improved milk production
- Reduced replacement rate
- Quick payback on investment
- Improved conception rate

## Colorado's Farm

Colorado's Farm is located in Araras City in São Paulo State. The company was founded in 1982 and is one of the biggest milk producers in the country, selling its milk production under its own brand.

With the proximity of the Company to the city of São Paulo, one of the biggest markets in the country, Colorado's farm needed to maintain a stable milk production in order to

comply with commercial agreements. Milking cows, which are very sensitive to heat stress, typically suffer from reduced milk production and conception rates during hot periods, thus negatively influencing the profitability of the company. The Region has a hot climate with temperatures regularly exceeding 30°C. In order to improve the productivity of the heard and maintain the

levels of production during the year, Munters proposed a completely automatized Cross Ventilation System.

The perfect climate that Munters was able to create resulted in higher milk production and conception rates that will give a payback of the investment, estimated, in less than 3 years.

Munters Brasil Indústria e Comércio Ltda

Matriz Curitiba Rua Anselmo de Lima Filho, 343-C - CEP: 81 290-250 CIC Curitiba, Brazil  
Phone +55 41 3317 5050 / Fax +55 41 3317 5070 / [munters.com](http://munters.com)



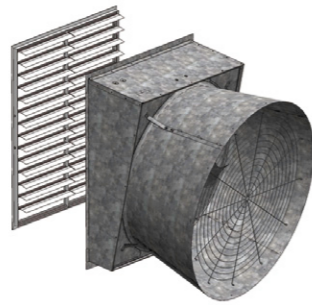
# Colorado's Farm

- Brazil -



Air Extraction

VENTILATION FOR HOT PERIODS



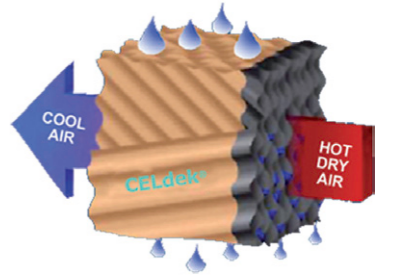
WF50 3D model

44 WF50 1,5hp wall exhaust fans with discharge cone create air speeds inside the house exceeding 3m/s during the cross ventilation. Thanks to the high wind chill effect cow comfort is considerably improved. Removable plastic shutter allows for easy access for maintenance and cleaning purposes



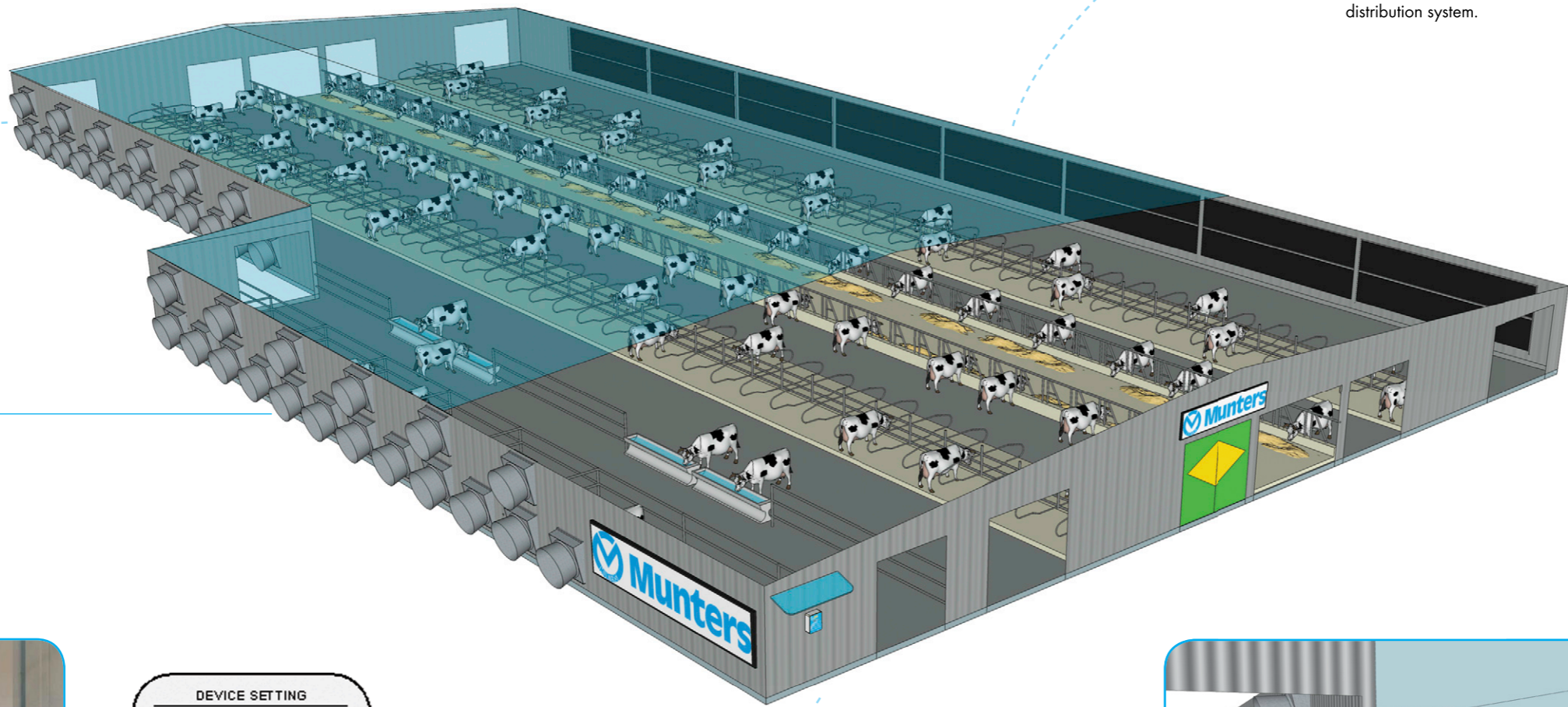
Cooling

COOLING FOR HOT PERIODS



Cooling process

A pad wall (80m long and 3m high) made up of 15cm thick CELdek 6560/15 with MI-T-edg® coating is installed along one side of the barn. The top quality of the materials and of the manufacturing process combined with the MI-T-edg protective edge coating guarantee extremely high cooling efficiency as well as unbeatable long life span. MI-T-edg is the only edge coating with patented algae resistance. Uniform wetting of the cooling pads is ensured by Easycool water distribution system.



OUTSIDE view

INSIDE view



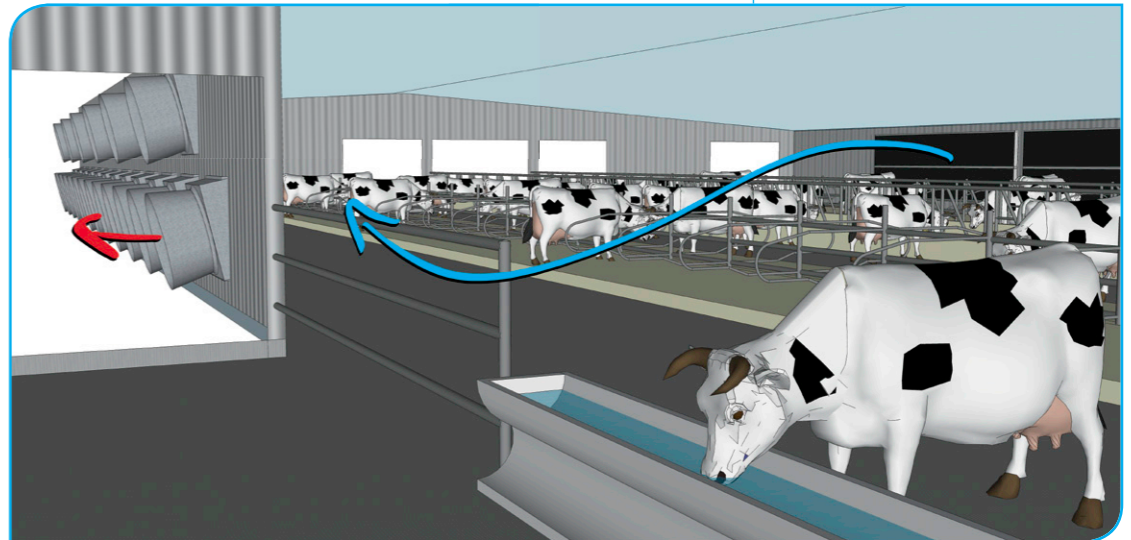
Control

ALL SEASON

Farm Premium P's display

- | DEVICE SETTING |                       |
|----------------|-----------------------|
| 1.             | LEVELS OF VENTILATION |
| 2.             | SPEED FAN LEVELS      |
| 3.             | VENT & CURTAIN LEVELS |
| 4.             | STIR FAN LEVELS       |
| 5.             | STIR FAN PROGRAM      |
| 6.             | COOL PAD              |
| 7.             | FOGGERS               |
| 8.             | LIGHT                 |
| 9.             | WATER & FEED          |
| 10.            | EXTRA SYSTEMS         |
| 11.            | EMERGENCY SETTING     |
| 12.            | WATER ON DEMAND       |

Farm Premium Climate Controller. The flagship in the Munters controller range provides fully automated control of the climate equipment of the house. Ventilation levels can be programmed for exceptionally accurate ventilation according to variable ambient daily conditions.





The Cross Ventilation System allows the herd to be housed in a single enclosed building (reduced construction and management costs); giving the possibility of controlling inside temperatures (up to 10°C reduction depending on ambient condition) and creating an airflow of over 3m/s around the animals. The cool air coupled with the airspeed generated by the fans maximize feed conversion and production outputs. WF50 air exhaust fans and evaporative cooling system Easycool with MI-T-edg CELdek® are automatically managed by the Farm Premium P climate controller. A communication system allows the farm Manager to comfortably check the climate system directly from its own pc.

The results obtained were really satisfactory according to Fazenda's Colorado management and could measure improvements in several key production parameters were recorded:

Munters solution vs Natural ventilation	
Improved milk production <sup>1</sup>	+5,5%
Improved Conception Rate <sup>2</sup>	+15%
Replacement rate	- 4%
Payback <sup>3</sup>	Less than 3 years

<sup>1</sup> Milk production/cow\*day as average along the year.

<sup>2</sup> During the warmest months of the year.

<sup>3</sup> Depending on feed and milk prices as well as configuration of Munters equipment.

**Australia** Munters Pty Limited, Phone +61 2 8843 1594, **Brazil** Munters Brasil Industria e Comercio Ltda, Phone +55 41 3317 5050, **Canada** Munters Corporation Mason, Phone +1 517 676 7070, **China** Munters Air Treatment Equipment (Beijing) Co. Ltd, Phone +86 10 80 41 8000, **Denmark** Munters A/S, Phone +45 9862 3311, **India** Munters India, Phone +91 20 3052 2520, **Indonesia** Munters, Phone +62 818 739 235, **Italy** Munters Italy S.p.A., Chiusavecchia, Phone +39 0183 52 11, **Japan** Munters K.K., Phone +81 3 5970 0021, **Korea** Munters Korea Co. Ltd., Phone +82 2 761 8701, **Mexico** Munters Mexico, Phone +52 818 262 54 00, **Russia** Munters AB, Phone +7 812 448 5740, **Singapore** Munters Pte Ltd., Phone +65 744 6828, **South Africa and Sub-Sahara Countries** Munters (Pty) Ltd., Phone +27 11 997 2000, **Spain** Munters Spain S.A., Phone +34 91 640 09 02, **Sweden** Munters AB, Phone +46 8 626 63 00, **Thailand** Munters Co. Ltd., Phone +66 2 642 2670, **Turkey** Munters Form Endüstri Sistemleri A.Ş, Phone +90 262 751 3750, **USA** Munters Corporation Mason, Phone +1 517 676 7070, **Vietnam** Munters Vietnam, Phone +84 8 3825 6838, **Export & Other countries** Munters Italy S.p.A., Chiusavecchia Phone +39 0183 52 11



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