

HUMICOOL: Case study Poultry farming in a controlled climate

CELdek® system carries right through to total savings

Background

David Kirsten's poultry farm in South Africa is located some 120 km north-west of the city of Johannesburg. This is a region of the world that is often subjected to very hot and dry weather conditions, summer temperatures averaging, for example, around 34 °C with a relative humidity of only 25 per cent.

Mr. Kirsten, whose farm is called Boshhoek, started poultry farming about three years ago as a contract grower for a leading producer of poultry meat in South Africa.

Hot and dry problem

The harshly hot and dry climate of this South African region is not conducive to problem-free poultry production—quite the contrary.

David Kirsten has two chicken houses that are able to accommodate a maximum of 31,500 birds each, which equates to about 21 birds per square meter. As the birds reach maturity, this density level reaches overcrowding, leading to heat stress in hot weather. The best results are obtained when each building has a density of 28,500 birds, equaling 19 birds per square meter, i.e., they will have a low mortality rate.

Mr. Kirsten, who holds a degree in electrical engineering, is quite aware that without the help of modern, sophisticated climate-control technology, the health of the birds as well as the final production per cycle, and ultimately the production volume of the entire farm, would suffer considerably.

Tough economic climate

The poultry industry in South Africa consists of extremely competitive producers. The major contenders are constantly forced to aim for high



FACTS

By installing the CELdek® system, David Kirsten's poultry farm has been able to:

- improve health and lower mortality
- improve the feed-conversion rate
- boost weight gain per cycle
- increase bird population per sq.m.
- increase amount of meat per cycle
- shorten the time to slaughter
- reduce overall cycle time
- increase production cycles per annum per building
- boost the overall performance efficiency factor
- provide a more wholesome, drier environment, resulting in cleaner birds



CELdek® evaporative cooling pads and Euroemme® fans are the real 'trade secret'.

productivity while effectively juggling small profit margins.

Capital costs for constructing a poultry farm are extremely high compared with the production figures reached utilizing a conventional naturally ventilated building.

These difficulties are eliminated by the proven ability and efficiency of CELdek® systems.

Cool cash solution

For these, and numerous other reasons, Munters – together with PPA, its local distributor – approached Mr. David Kirsten with the idea of assisting in a pilot project involving a controlled-environment installation. Munters and PPA would, in this way, be able to prove the benefits of a controlled-environment system. Mr. Kirsten found the proposal of interest and agreed to participate in the project.

With this effective pilot project in full operation, Mr. Kirsten has subsequently had the means at hand to improve climate conditions notably, with a high level of control and thus be able to

- improve health and lower mortality
- improve the feed-conversion rate
- boost weight gain per cycle
- increase bird population per sq.m. (At slaughter time – after mortality rates are taken into account – each chicken house records a density of about 18.5 birds/sq.m., or 27,750 each.)
- increase amount of meat per cycle
- shorten the time to slaughter (The ideal weight specified by the market, for the birds ≈ 1.8 kg before slaughter. This is achieved in 38 days.)
- reduce overall cycle time



Each building has CELdek® evaporative cooling pads along each side, measuring 1.5 by 16.2 meters.

- increase production cycles per annum per building
- boost the overall performance efficiency factor, and, last but not least,
- provide a more wholesome, drier environment, resulting in cleaner birds.

Results have been directly measured as recorded substantial savings. It is fair to say that the profit ratio achieved by employing a CELdek system has allowed Mr. Kirsten to reap the same earnings as competitors operating twice the number of naturally ventilated poultry buildings.

Mr. Kirsten most decidedly believes that if there were no evaporative cooling in the two buildings then they would have to reduce the amount of birds to 16 birds/sq.m. and, even by doing that, they would still experience a high mortality rate due to heat stress. Since installing the CELdek system, Mr. Kirsten's success has been rewarded by his "winning" the Contract Grower of the Year award,

awarded by the company for which he produces.

How Munters does it

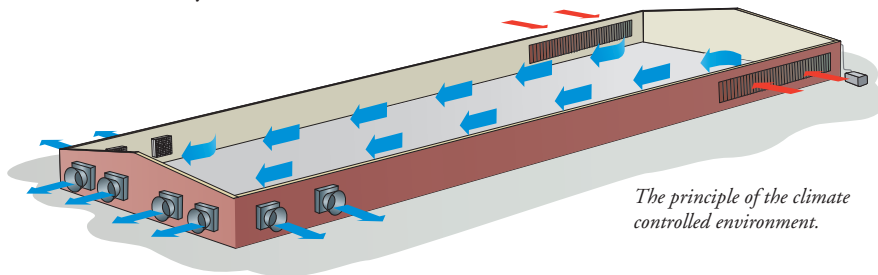
The essence of CELdek systems is to provide comprehensive control – from start to finish.

This begins with Munters expertise in choosing the right equipment and goes on to include all the technical support necessary for a totally turnkey solution. The specially designed control panel, for example, is a principal part of the system.

In general, it includes CELdek evaporative cooling pads, selected Euroemme® fans, a control system and all necessary water-distribution equipment. Munters has many years of far-ranging global experience in providing the right climate in the right place – at the right price.

Inside details

The system installed at David Kirsten's farm includes eight 50-inch, 1.5-hp fans that supply ventilation through CELdek evaporative cooling pads on either side of the building. These are 1.5 meters in height and 16.2 meters in length. The entire climate of the building is regulated by single control system.



Munters, HumiCool Division, Kung Hans Väg 8, P.O. Box 434, SE-191 24 Sollentuna, Sweden. Phone +46 8 626 63 00, Fax +46 8 754 56 66.
www.munters.com

Australia Munters Pty Limited, Phone +61 2 6025 6422, Fax +61 2 6025 8266, **Austria** via sales organization in Germany, **Brazil** Munters Brasil Industria e Comercio Ltda, Phone +55 41 3317 5050, Fax +55 41 3317 5070, **China** Munters Air Treatment Equipment (Beijing) Co., Ltd., Phone +86 10 80 481 121, Fax +86 10 80 483 493, **Denmark** via sales organization in Sweden, **Finland** Munters Oy, Phone +358 9 83 86 030, Fax +358 9 83 86 0336, **France** Munters France S.A., Phone +33 1 34 11 57 50, Fax +33 1 34 11 57 51, **Germany** Munters Euroform GmbH, Phone +49 241 89 00 0, Fax +49 241 89 00 5199, **Indonesia** Munters, Phone +62 21 9105446-7, Fax +62 21 5310509, **Italy** Munters Italy S.p.A., Phone +39 0183-52 11, Fax +39 0183-521 333, **Japan** Munters K.K., Phone +81 3 5970 0021, Fax +81 3 5970 3197, **Kingdom of Saudi Arabia and Middle East** Hawa Munters, c/o Hawa United Cooling Syst. Co. Ltd., Phone +966 1 477 15 14, Fax +966 1 476 09 36, **Korea** Munters Korea Co., Ltd, Phone +82 2 761 8701, Fax +82 2 761 8777, **Mexico** Munters Mexico Phone +52 722 270 40 30, Fax +52 722 270 41 95, **Norway** via sales organization in Sweden, **South Africa and Sub-Sahara Countries** Munters (Pty) Ltd, Phone +27 11 997 2000, Fax +27 11 608 3501, **Spain** Munters Spain S.A., Phone +34 91-640 09 02, Fax +34 91-640 11 32, **Sweden** Munters Europe AB, Phone +46 8 626 63 00, Fax +46 8 754 56 66, **Switzerland** via sales organization in Germany, **Thailand** Munters (Thailand) Co. Ltd., Phone +66 2 645 2708-12, Fax +66 2 645 2710, **United Kingdom** Munters Ltd, Phone +44 845 644 3980, Fax +44 845 644 3981, **USA** Munters Corporation **Fort Myers**, Phone +1 239 936 1555, Fax +1 239 936 8858, Munters Corporation **Mason**, Phone +1 888 335 0100, Fax +1 517 676 7078, **Export & Other countries** Munters, Phone +46 8 626 63 00, Fax +46 8 754 56 66.

Your closest distributor