

# Colourful orchid plants bloom with Munters' Climate Control System

In the beautiful area of the Colli Eganei, (Euganean Hills) lies Europe's first botanical garden. And in this province of Padova, Northern Italy, is the town of Galzignano Terme. With its small population of just over 4,000, the land rises 22 meters above sea level. It is here in this region's eastern foothills, that the Gamberoni family produces its colourful orchid flowers.

The family actually started its flower business back in 1963 in the Bolzano province where they cultivated potted flowers in greenhouses. But it wasn't until 2001 when Rudolf Gamberoni opened his new production site in Galzignano Terme fully dedicated to the Phalaenopsis orchid flower – currently the most valuable blooming pot plant orchid at the flower auctions in the Netherlands. The species can be classified into two groups: a group with a long, branched inflorescence (up to 1 m long) and large, almost round flowers with rose or white tints; and a group with short stems and less rounded, waxy flowers with more pronounced colours.

The greenhouses are laid out over 14,000 m<sup>2</sup>. Twelve employees are able to produce an average yearly yield of 400,000 Phalaenopsis orchid plants that are available in 100 different colours. The Gamberonis distribute them mainly in Italy but also in other European countries.

## European flower market

The family operation is almost invariably set to grow since according to the Flower Council of Holland, the estimated value of the European market for flowers and plants in 2004 was €22.7 billion (€13.8 billion for flowers and €8.9 billion for plants). In the period 2004–014 the increase in value of the market is estimated at 3.1% for flowers and 3.9% for plants. According to United Nations Comstats, Italy is the fourth largest exporter of potted plant orchids in the world.

**HUMICOOL: Case study, Greenhouse: Potted plant orchids; Gamberoni family, Italy**



## FACTS

By installing Munters' Climate Control System, the Gamberoni were able to:

- constantly keep the RH at optimum level of 70%
- constantly keep the temperature 10–15 °C below outside temperature
- grow orchid varieties that are highly valued on the market



*"The smart combination of pad and fan cooling with air mixing and ventilation makes ideal flowering conditions for the Phalaenopsis orchid", says Mr. Gamberoni.*



## Munters' Climate Control System creates tropical-like greenhouse environment

The Gamberoni family invested in Munters' Climate Control System because the Phalaenopsis are tropical orchids that demand warm temperature, low light and high relative humidity. In the wild they are typically found below the canopies of moist and humid lowland forests, protected against direct sunlight, but equally in seasonally dry or cool environments.

In order for the Gamberoni's greenhouse orchids to survive and grow plentifully, a cooling system is a must for the flowering phase since the ideal temperature should be between 20 and 25 °C and the RH around 70%. Because of the unfavourable outside summer climate conditions (up to 40 °C) Mr. Gamberoni knew he needed to find a solution that would create the proper environment in his greenhouses.

### Fantastic results

"Thanks to the Munters' Climate Control System, the temperature in the greenhouses are now where they should be at 10 to 15 °C below the outside tem-



The wall of CELdek® evaporative cooling pads.

perature. Together with our 70% RH, the Phalaenopsis orchid has very good flowering conditions now," says Mr. Gamberoni. He also states that without the Munters' Climate Control System, he would not have been able to start this new business. "The floral market required this particular type of orchid and now we can meet these demands."

### Installed Munters' equipment

EM50 Euroemme extraction fans; CELdek 7090-15 evaporative cooling pads; precoated steel gutter system and EDC18 Euroemme air blowers.

In addition to the normal pad and fan cooling system, Mr. Gamberoni also installed Euroemme EDC18 air blowers. Not only does this help to control the humidity, it is also very useful to dry the plants quickly after irrigation.

### Climate Control System from Munters

At the heart of Munters' Climate Control System are two of the most trusted brands in the industry, CELdek® evaporative cooling pads and Euroemme® fans.

The CELdek® evaporative cooling pads are used in systems where high efficiency cooling is required. It can be used for many different cooling purposes but is particularly suitable for cooling of live stock buildings and greenhouses.

The green stripe pad consists of specially impregnated and corrugated cel-

lulose paper sheets with different flute angles. This unique design yields a cooling pad with high evaporation efficiency while still operating with a very low pressure drop. In addition, scaling is kept to a minimum and no water carryover occurs since the water is directed to the air inlet side of the pad.

Euroemme® extraction fans are special because they need to close very tightly when they are not in operation. To meet this special requirement, the extraction fans are equipped with specially designed shutters which close tightly when the fan is not in operation. When the fan is operating, a unique

centrifugal mechanism opens the shutters and keeps them fully opened, even in dusty agricultural environments. This ensures efficient ventilation. It also helps to retain heat and eliminate drafts when no ventilation is required.

Euroemme fans are products of choice when it comes to supplying ventilation to agricultural structures. Whether the required ventilation need is air extraction, air circulation, distribution of heated air, or breaking up of stratified air, there is a suitable fan in the Euroemme range.



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