DryGair SOLUTION CASE STUDY

Yield Quality & Quantity



Yield Improvements

Based on measured user experience, the data presented in this case study was collected from tomato, pepper and cucumber greenhouses, utilizing the DryGair system. These greenhouses are found in diverse climates around the world.

Intro

Humidity is a critical factor that impacts the growth, health and quality of vegetables. The DryGair solution provides innovative, effective and energy efficient humidity control for greenhouses and closed growing facilities. Effective humidity control boosts yields, improves produce quality, prevents common diseases, and increases germination rates in seed production.

The DryGair Solution

DryGair, in partnership with the Israeli Agricultural Research Organization, the Volcani Center, has designed a solution to control humidity inside greenhouses and closed growing facilities.

How It Works

Close the greenhouse, spread thermal screens (if applicable) and operate the DryGair unit to remove excess moisture.

Extracts 45 L/hr (12 G/hr)* of water using 10kW of electricity

*At designed conditions of 18˚C, 80% RH

Treats 22,000 m^3 (13,000 CFM) of air

Circulates the air to create uniform conditions

Saves ~50-70% energy on average



RESULTS



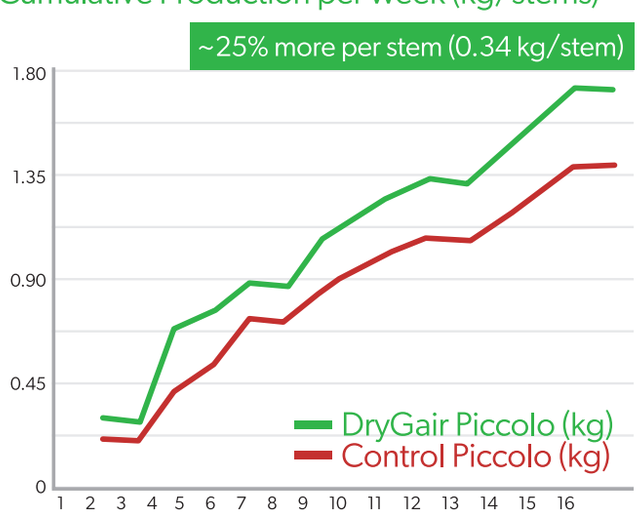
Tomatoes

Cherry Tomatoes – Spain

Yield Increase ~25% Per Stem In Unheated Greenhouse

The temperature increase, provided by DryGair, significantly improves growing conditions in non-heated greenhouses. These conditions stimulate growth and fruit production. Combining dehumidification with a temperature increase leads to optimal growing conditions and significant yield improvement.

Cumulative Production per week (kg/stems)



Cherry Tomatoes – UK

Yield Increase ~5.5% In Heated Greenhouse

Yield increase results from reduced rates of disease, and creating active climate conditions that stimulate growth.
DryGair's dehumidification, combined with its patented air circulation, allows for denser crop placement as well.

Peppers

Seedless Peppers – Israel

Yield Increase ~25%

Bell Peppers – New Zealand

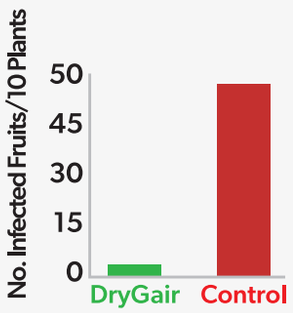
Yearly Yield Increase ~15%



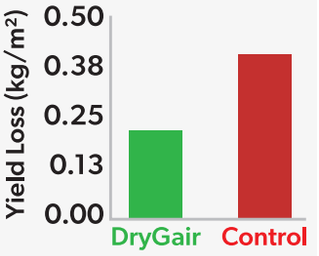
Improved Quality and Reduced Disease Rate

DryGair prevents disease outbreaks and reduces spray use, by preventing the conditions necessary for disease development. It reduces the presence and development of common mildews, such as downy mildew, powdery mildew, and gray mold.
Growers also report higher, and more consistent Brix index in tomatoes throughout the growing season.

98% reduction
in botrytis infections in peppers (Israel)



50% reduction
in yield loss due to cracked tomatoes (Spain)



Basil

Yield Increase ~15%

Better Growing Conditions

Using DryGair improves climate conditions inside the greenhouse, by creating optimal humidity and temperature levels, with minimal fluctuations. This contributes to larger yields due to shorter grow cycles and improved plant growth.

More Plants Per Meter

DryGair also allows growers to increase their crop placement density, by reducing humid microclimates, and allowing for more plant mass, without risking disease outbreaks.

Disease Prevention

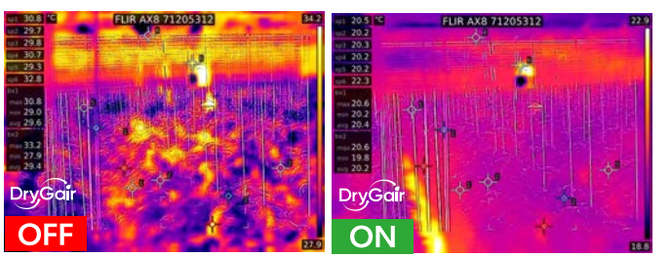
In this trial, the control greenhouse exhibited 15% yield loss due to disease and mold infections. In the greenhouse using DryGair, there were no diseases found. That's a 15% yield increase just based on disease prevention.

Higher Produce Quality

According to the growers participating in this case study, the basil was more uniform in size and shape, and of higher quality.

Improved Yield Uniformity Due to Air Circulation

Thermal camera images show temperature fluctuations in 4-meter-tall pepper crops in the Netherlands. When the DryGair fans are on (right), temperatures remain relatively uniform throughout the greenhouse.



Three sensors capture relative humidity & temperature in different locations and height in a tomato greenhouse in Israel. During DryGair's operation, variability in conditions is significantly minimized.

DryGair's air circulation provides homogeneous desired conditions for the plants throughout the entire greenhouse. The uniformity prevents the formation of humid microclimates within the foliage, preventing the development of damaging diseases.

No Humid Microclimates = Disease Reduction
Uniform Conditions = Uniform Crops

Summary – Yield Benefits

- **Higher Yield Per Meter**
- **Improved Quality**
- **Reduced Disease Rates and Yield Loss**
- **Better Seed Production – Improved Germination Rates**
- **Energy Savings – 50% Average**



DryGair CONTACT drygair.com

DryGair Horticulture Dehumidifiers
a new way to grow.