



**More than 50 years**

of experience fighting against the harmful effects of hail and frost

2024

# Let's start protecting your world

Don't let it crumble. Take action as soon as possible. Passion for what we do

SPAG Group, the leading company in the manufacturing, marketing, and distribution of Anti-Frost and Anti-Hail Systems

We are present in key sectors such as Agriculture, Automotive, Aerospace, and Energy, offering specific solutions for each of them

With over 50 years of experience, we have established ourselves as one of the top service providers in the field of frost and hail protection. Currently, we have assembled the best team of professionals and have achieved a high business volume spread across 30 countries

# Cutting-edge Innovation



Anti-hail System



Anti-frost System

# Present in 30 countries



Two main headquarters  
Located in Spain and France



50 years of experience  
Innovation & Technology



30 countries  
Hail and frost protection in  
over 30 countries

# Competitive Sectors...



Agriculture



Aerospace

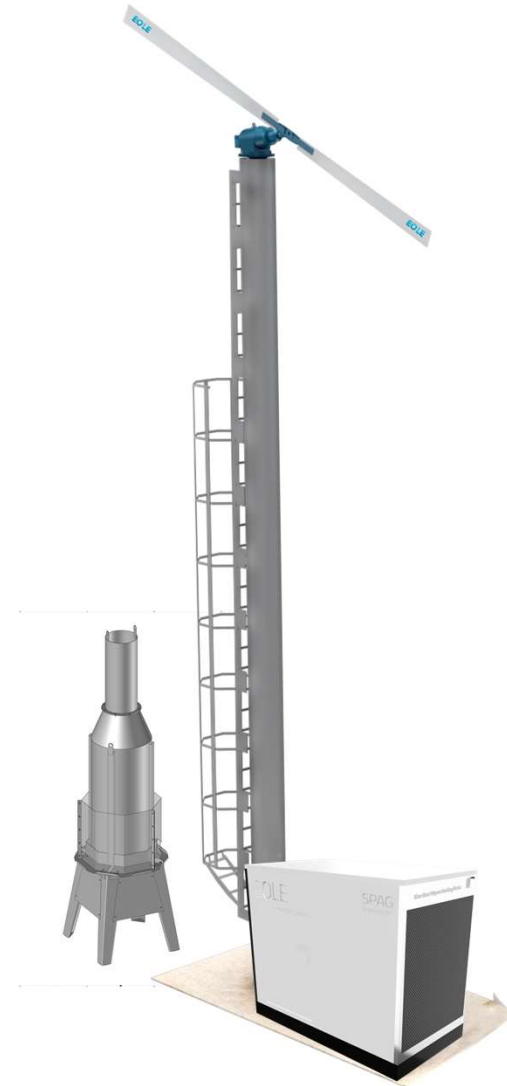


Automotive



Energy

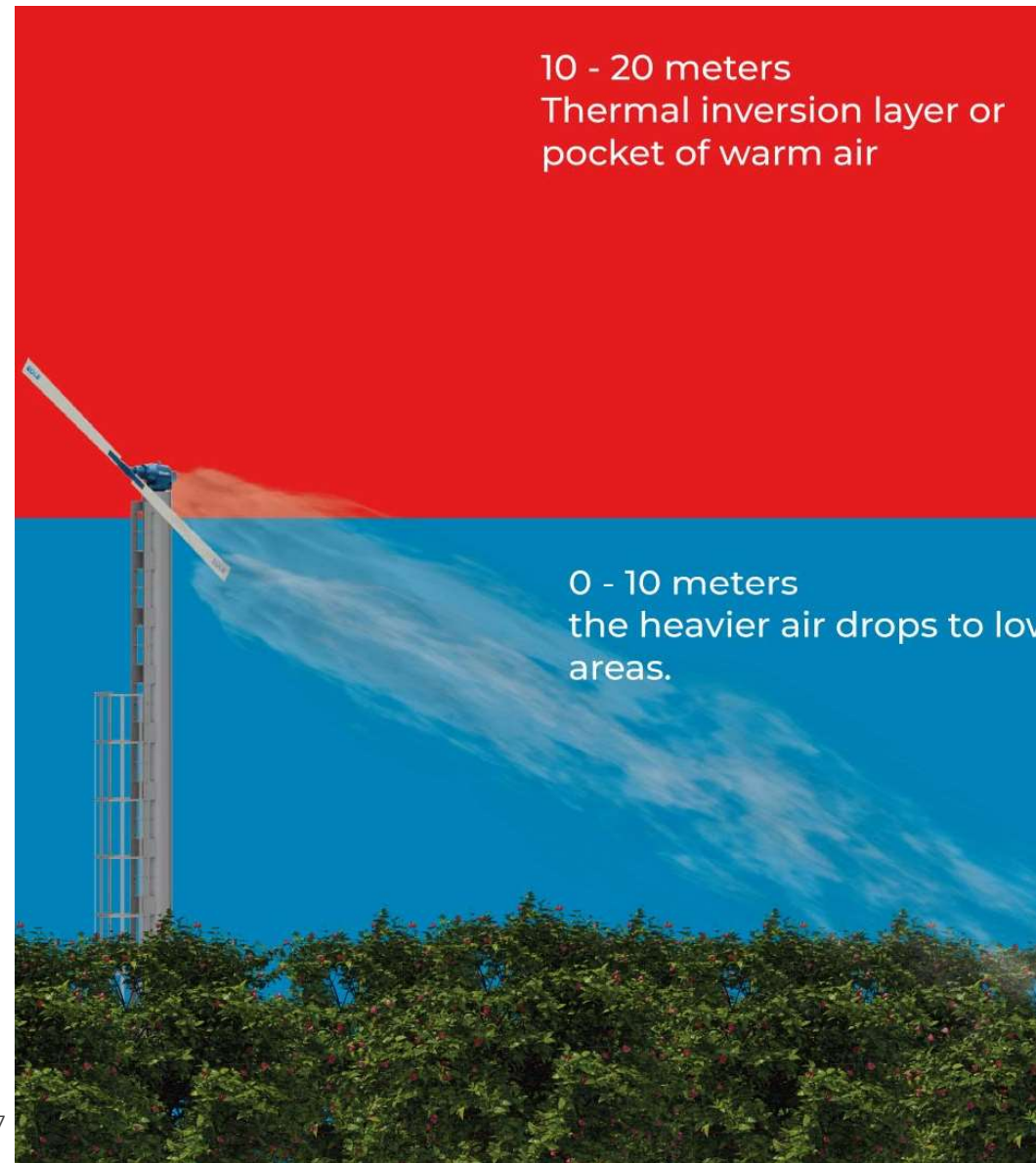
# Anti-frost System SPAG Group



# Radiation Frost with thermal inversion

The system set thermal inversion, a phenomenon that occurs naturally at nightfall. The anti-frost tower acts as a propellant, sucking in the air concentrated in the warmer upper layer And driving it down to the Lower layer where the crops are. A constant flow of air is created, which heats up the coldest layer and prevents frost from occurring.

This phenomenon causes flowers to produce abscisic acid, which increases their tolerance to frost and the migration of water from the inside to the outside of cells.



# Anti-frost System SPAG Group



100%

### Frost Protection

The system uses thermal inversion technology, driving hot air from upper layers to ground level



### Crop profitability

The system pays for itself on the first meteorological phenomenon

7.2Ha

### Protection

With a single system, depending on the type of frost

-6°C

### Temperature

With heater. Without heater up to -4°C



Environmentally friendly

# System options

All our anti-frost models are designed with the latest cutting-edge technology, providing consumers with the equipment best-suited to their needs.



Static  
EOLE Anti-frost  
system

Designed with the latest cutting-edge technology, this system provides the advantages of thermal inversion in a smaller area.



Tilting  
EOLE anti-frost  
system

Designed with the latest cutting-edge technology, this system features two positions geared to simplifying repairs and installation.

# Elements of the System

Its aerodynamics and highly innovative features make the EOLE tower the most effective system on the market.



Tower gear drive

The highest standards of mechanical engineering make the EOLE gear drive the most reliable and durable system on the market.



Carbon blades

High resistance and excellent aerodynamics, adapted to ensure the greatest flow of air and optimal engine power.



Helical shaft

The helical shape of the shaft provides greater structural resistance, ensuring excellent aerodynamic performance.

# Types of Motor

We adapt to your needs



Diesel motor

Anti-frost tower with Diesel motor from 163CV(120KW) manufactured by leading brands



Gas Motor

Anti-frost tower with Gas motor, running on LPG, propane, gasoline or a mixture



Electric motor

Anti-frost tower with a 100 kw electric motor with a frequency inverter, which can be connected to an electrical network or a generator unit



Tractor coupling

Anti-frost tower with a tractor coupling device (900rpm), with no need for the installation of another motor.

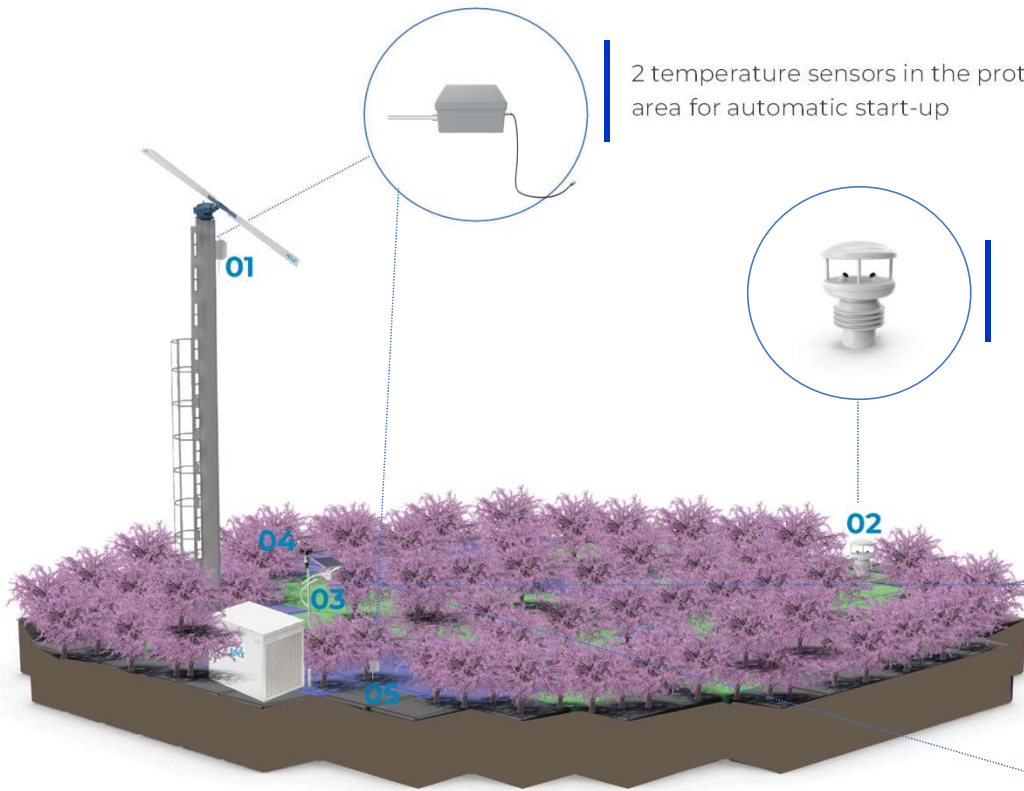
# Automation of the system

2 temperature sensors in the protection area for automatic start-up

1 temperature sensor placed 100 meters away from the anti-frost tower

1 anemometer to. Measure variations in speed at start-up in order to optimize the process. Anemometer in charge of speed variation at start-up to optimizer

A solar panel to feed the entire system



# Anti-frost tower Accesorios

Increase the calories in your soil. Increase productivity

01. Burning system  
12 volt (3 speed) burning system  
800.000 Calories | hou.  
1.000.000 Calories | hour  
1.600.000 Calories | hour

02. Heating system  
Manufactured in refractory steel. The system is 6 meters tall and the temperature increases by +2°C

03. SPAG greenhouse system  
Manufactured in galvanized steel. Equipped with a diffusion regulator. Designed to operate for 2 | 3 hours

Innovation and technology in each protection system.



# Some of our Clients





We have the **solution**  
The **decision is yours**

Innovation and technology at your fingertips

Frost and hail protection systems

[grupospag.com](http://grupospag.com)