



***Smart  
solutions for  
modern and  
eco-  
sustainable  
agriculture***





## ***Martignani in 5 words:***

- ***History***

1958 - first to use the Low Volume technique

- ***Spraying technology***

1981 - first in Europe to introduce Electrostatic Charging

- ***Saving***

WATER: -90%; CHEMICAL: -40%; FUEL: -60%;  
LABOUR: -60%

- ***Efficiency***

Environmentally friendly and ZERO residues on fruit and wine

- ***Eco-friendly***

Green New Deal: Connectivity 4.0; Innovation Awards; Patents;



# 60 Years of History



1958



1960



1970



1980

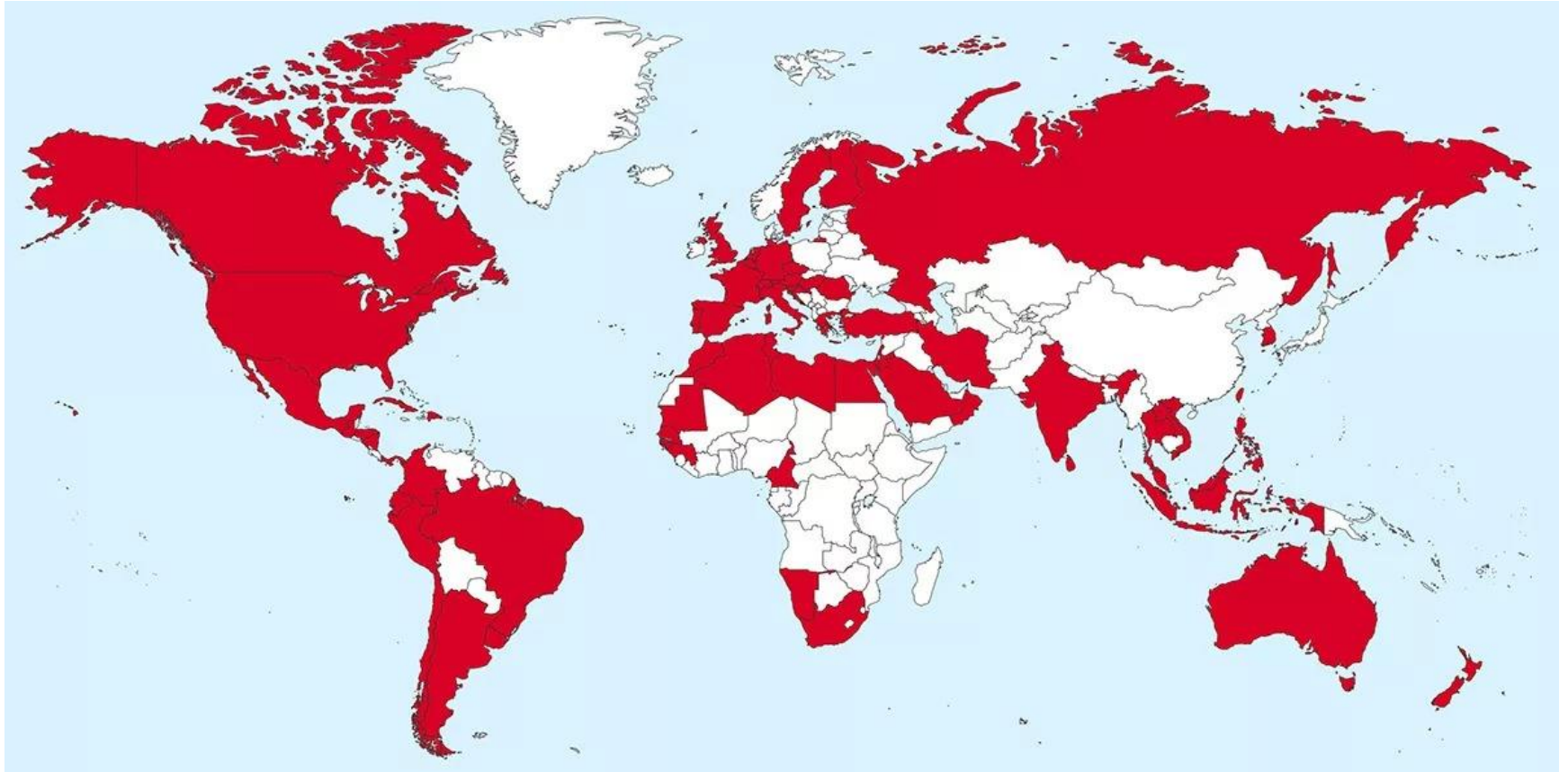


2000



2020

# ***Martignani markets***





# ***Martignani the only one***

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- With over **60 years** of experience in **low volume treatments** and **40 years** with **electrostatic** charge
- Tested in phytoiatric terms by **leading research institutes worldwide**
- Used in high concentration treatment without problems, on **thousands of farms worldwide**
- Multi-awarded in the field of the most **important international events and fairs**





# Patents

Martignani Srl has been granted 29 patents since 1991 -

<https://www.martignani.com/en/patents>



The first patent in **1991...**

**Patent BO 91 U 00040, no. 00224697**

Spraying tower for fruit trees with telescopic adjustment system,  
B612 TURBO 2 H.T.S. (High Target System) Electrostatic  
(Gold Medal Fieragricola Verona, ITALY, 1991)



Year **2003**

**Patent No. 0001341493**

MC2 electrostatic dusting machine  
(Award for technical innovations EIMA 2004, Bologna, ITALY 2004)



Year **2013**

**European Patent EP 2689662 A1**

M612 Electrostatic 'Duo Wing Jet' with two air cushion drift shields  
enlarged beyond their perimeters, without any recycling of chemical mixture  
(Gold Medal EIMA, Bologna, ITALY 2012 and 2014)



Year **2016**

**European Patent EP 3087835**

M612 Electrostatic Multi-Flow 'Südtirol 2015' with integral air curtain anti-drift system,  
capable of eliminating the risk of contamination of neighbouring areas (buffer zone)  
(Blue Award EIMA, Bologna, ITALY 2016)

# Recent Patents



**2020**

Patent Application **No. 102020000023995**

**"SMS" System** (Smart Maintenance System) in the new Phantom M120  
(Mention Eima 20-21 for Innovation)



**2020**

Patent Application **No. 102020000026744**

**TELE AIR FAN:** Front suction tunnel, crop spraying apparatus



**2021**

Patent Application **No. 102021000025145**

**TELESCOPIC:** Compact system with guides and internal actuation



**2021**

Patent Application **No. 102021000025151**

**HYDRAULIC SYSTEM:** Hydraulic adjustment system with constant angular speed

# Martignani sprayers guarantee:

Superior effectiveness in treatments



Uniform and constant spraying



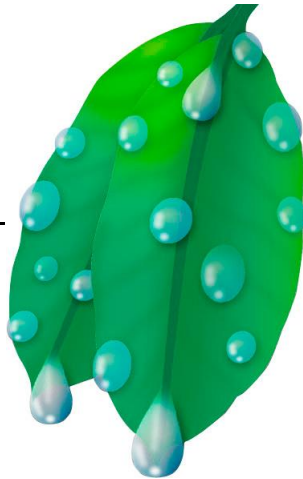
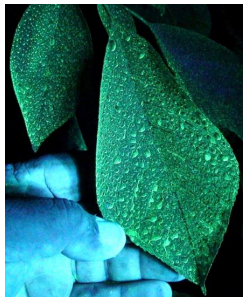
Homogeneous distribution of the active agents



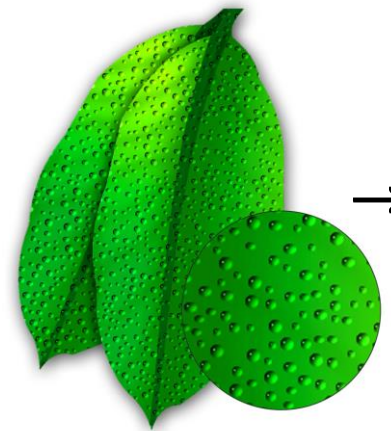
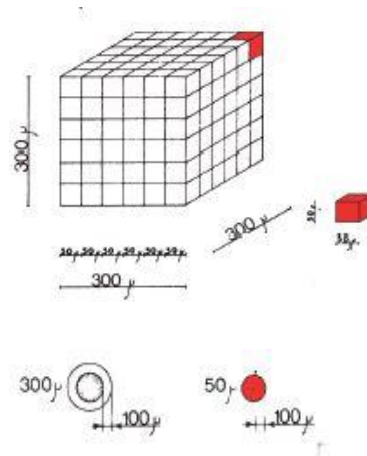
Exceptional penetration capacity



Greater productivity (efficiency)



Conventional spraying

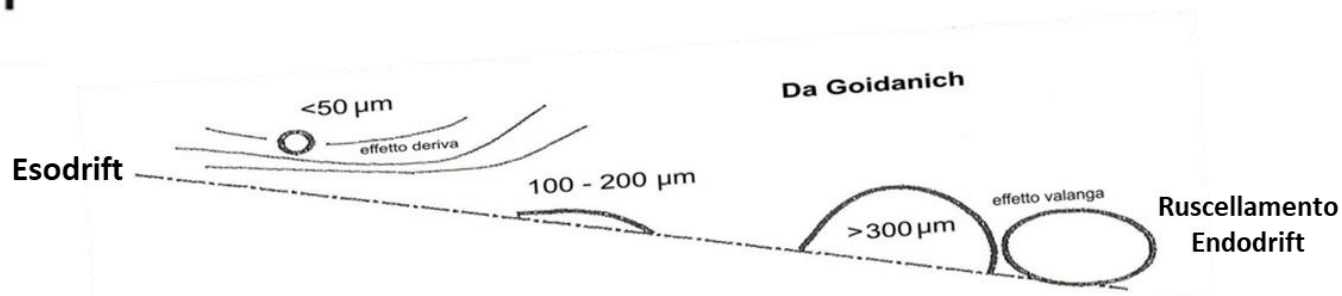


Droplets size  
100-130  
microns

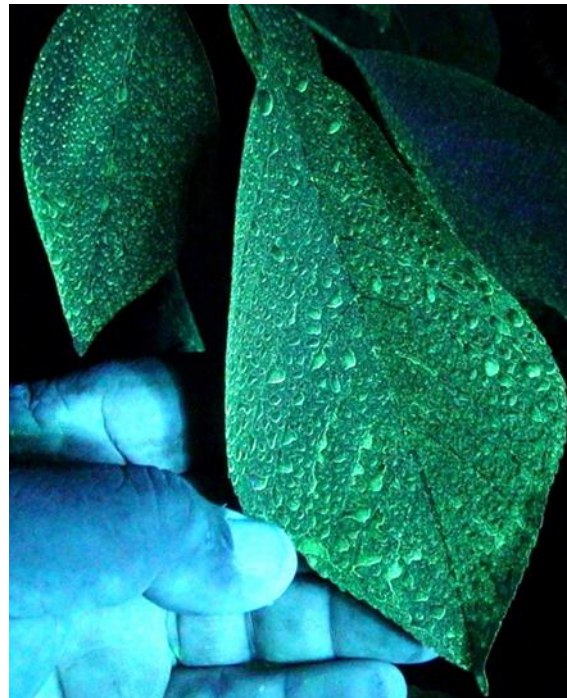
Martignani pneumatic spraying



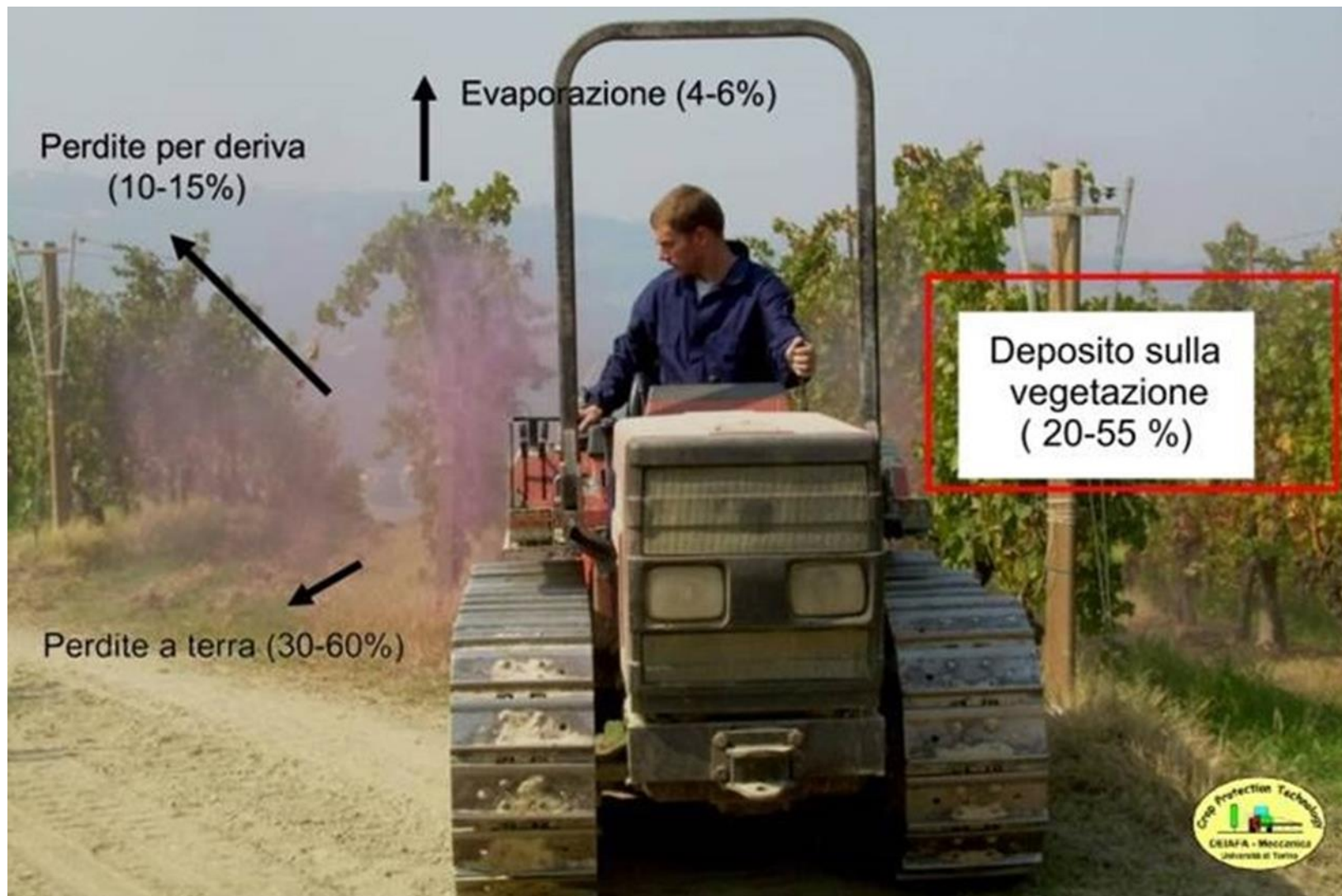
# Micronization in treatments



Insetti volanti					Insetti del fogliame					Fogliame											Suolo (evitando la deriva)									
0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
BASE OLIO					BASE ACQUA O OLIO																BASE ACQUA									

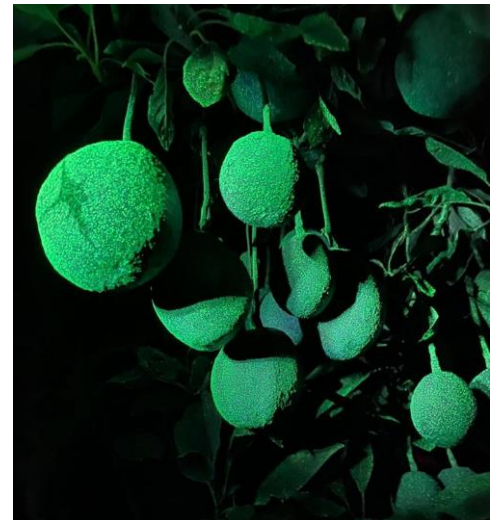
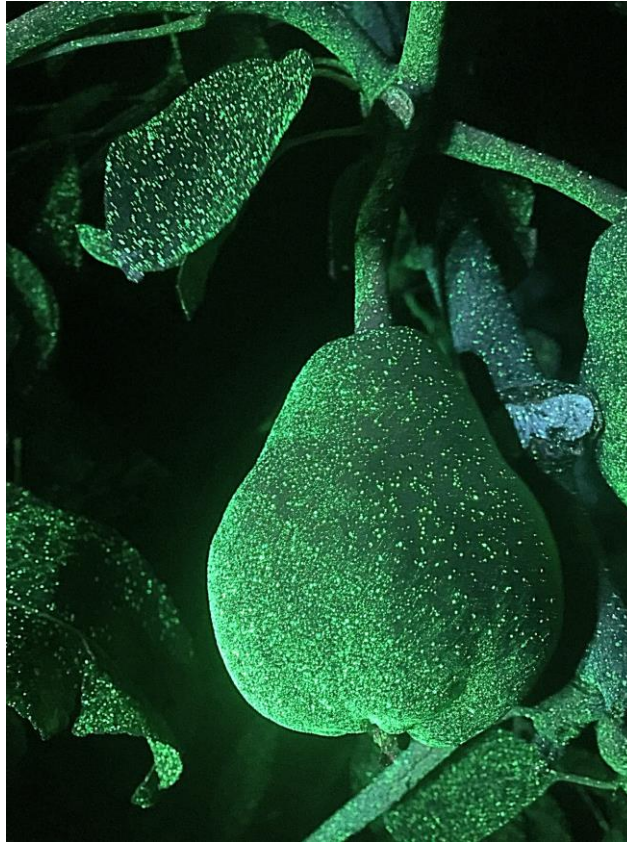


# *Product waste and environmental contamination during biological control treatments*





# *Spraying coverage*

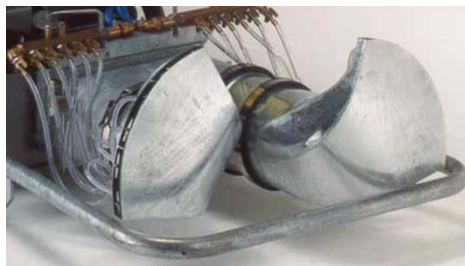


# Spray tracer deposit $\text{ng}/\text{cm}^2$

**Axial sprayer**



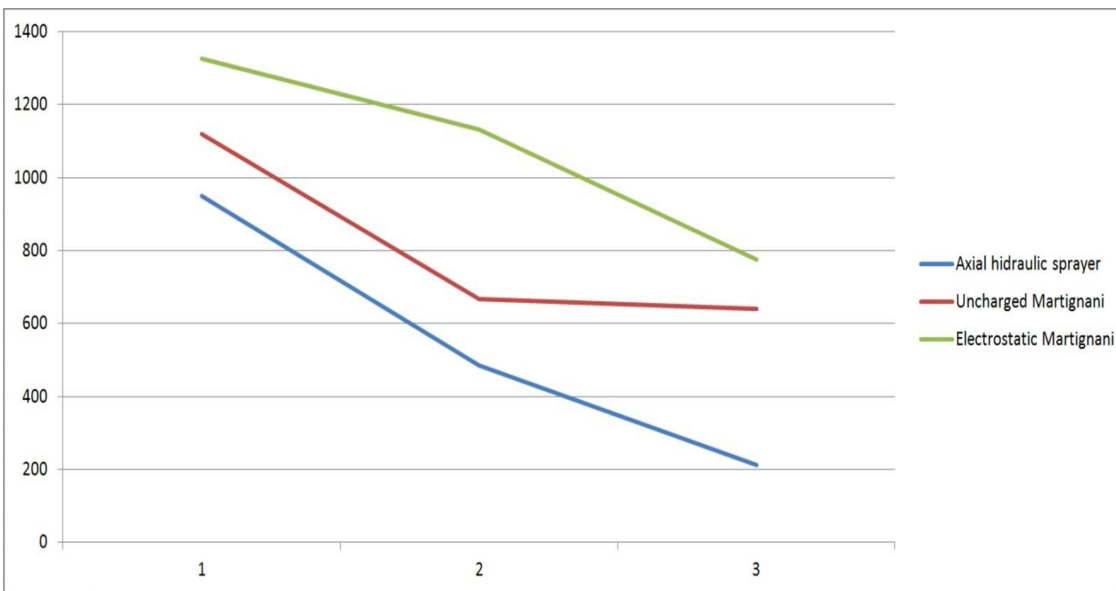
**Martignani without electrostatic**



**Martignani with electrostatic**



Spray tracer deposit  $\text{ng}/\text{cm}^2$



**Foliage depth**

**UNIVERSITY OF BOLOGNA**  
Agricultural and Food Science  
Pest control division





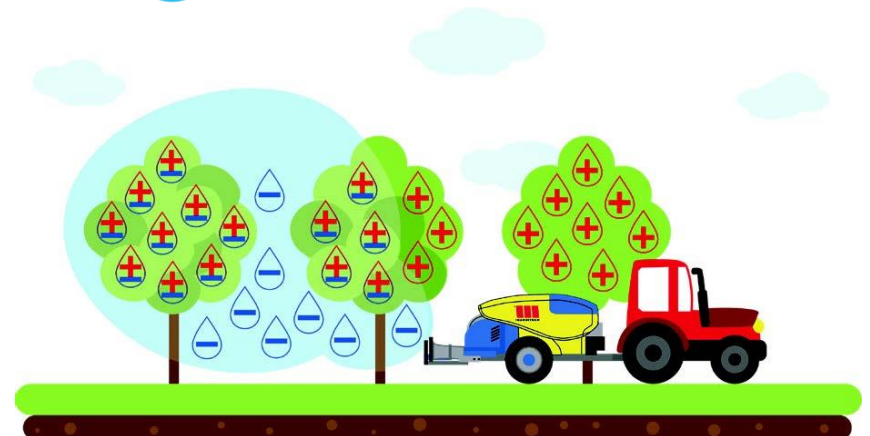
# Electrostatic charge (since 1981)

## Technical principle:

An electromagnetic field is created between the chemical mist and the plants. The vegetation therefore attracts the drops **preventing them from being dispersed into the surrounding environment**, increasing the level of **coverage and uniformity**.



 **ELECTROSTATIC<sup>®</sup>**  
AGRO SPRAY SYSTEM





# Advantages of Electrostatic Charge

- **Uniform distribution** of the plant protection product on the lower and upper surface of the leaves
- Fruit and wine **without residues**
- Further **reduction of losses** due to drift
- **Greater product deposit** on the vegetation
- Considerable **reduction of environmental contamination**
- **Healthier plants** and better production quality





# *Martignani's savings*

Thanks to the **low volume** and **electrostatic system** savings are possible:

- Chemical: **≥ 40%**
- Water: **90 %**
- Labour time: **≥ 60**
- Fuel: **≥ 60%**

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**Savings, with Martignani, is not a PROMISE, but a GUARANTEE.**



# *Martignani's savings*

**Thummerer winery**, Hungarian clients of Martignani, own 130 hectares of vineyards and have bought **4 sprayers** in the last 24 months.

- With Martignani they treat each hectare with 4 hours of work per year, while with a traditional sprayer they invest around 10 hours per year.
- **Every year they save € 205** per hectare in costs alone (water + operator + fuel) (for a total of 100ha that's **€ 20,500.00**)
- Chemical cost savings (Sulphur reduction by 2/3 with a saving of **€285 per year/machine**)
- Treatment frequency approximately every 10-12 days:
  - 7 treatment cycles = 14 working days with Martignani machines
  - 7 treatment cycles = 28 working days with conventional machines
- Reduction of 30% in the number of workers





# Martignani's savings

## Martignani's cherry numbers

A recent study conducted by our collaborator in Chile, Agr. Ing. Pablo Poirot, highlights the results achieved by a cherry producer over three years of treatments compared to the previous use of conventional sprayers. Our client owns a 220-acre (90 ha) cherry farm in the Teno area, south of the capital Santiago (Chile). This producer harvests 100 tonnes of fruit per season, or 200,000 crates of cherries for export.

## Let's have a look at the numbers:

The producer in question works with **2 Martignani electrostatic sprayers at 40 gallons/acre (375 litres/hectare)**, compared to the **160 gallons/acre (1,500 litres/hectare) previously used with 4 conventional sprayers**. This means a saving of **75% WATER**.

In addition, they have saved \$6,846 (6,390.00 euro) per machine/year in rental, fuel and operators over the past 3 seasons.

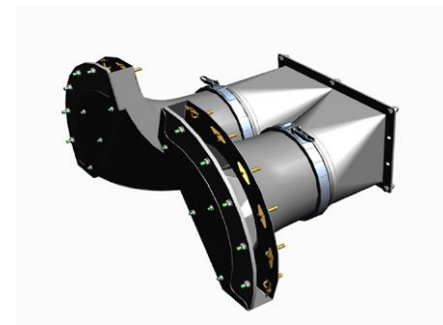
In terms of **water savings, the result was a total of 126,000 gallons (474,648 litres)**.

## Comparison of annual expenditure in product :

- Conventional sprayer: USD 4,312 per acre / (€ 4,027.00 approx.)= USD 1,746.00 per acre
- Martignani electrostatic atomiser: USD 1,324 per hectare (€ 1,226.00 approx.) = USD 540.00 per acre

**Annual saving USD 2,988 per hectare (€ 2,801.00 approx.) = USD 1210.00 per acre**

# Technical Features & major components







# Technology Partners



comer industries

**Rexroth**  
Bosch Group



ASSALI & SEMIASSI  
AXLES & STUB AXLES



TRELLEBORG



# Whirlwind Line

(Longitudinal Turbine)



ALBATROS



CANNON NURSERY

70° / 90° / 180°

GIBDOR



MULTIFLOW  
ORCHARD



TURBO 2



DUO WING JET



TURBO 3

# Phantom Line

(Transversal Turbine)





**NEW 2020/2021**

# New 3P sprayer Phantom with “SMS”

Smart Maintenance System (*patented*)



**SMS**  
SMART MAINTENANCE SYSTEM  
Patent Pending



[New 3P sprayer Phantom](#)

# NEW 2020/2021

## New Articulated Sprayer Phantom “NewPort20”

**DRIVE 6/90**

*(patented)*

[Martignani «NewPort20»](#)

“NewPort20” **Martignani** has a turning radius of less than **6 meters** and can be articulated up to **90°**.





# NEW 2020/2021

Whirlwind “**Duo-Wing-Jet**” & “**Turbo3**”  
with TELE-AIR-FAN system *(patent pending)*



[Turbo 3 electrostatic sprayer](#)





***NEW 2020/2021***



## Whirlwind “Duo-Wing-Jet” & “Turbo3”

with *TELE-AIR-FAN* system (patent pending)



# Thank you.

Lugo, 2022