

HÉLIOCUIVRE®



Preventive and anti-sporulating fungicide



INTRODUCTION

- French product developed and manufactured by ACTION PIN
- Composition: 400 g/l of metal copper from copper hydroxide + **terpenic alcohols**
- Registration number in Egypt: 1274
- Type of formulation: Suspension Concentrate
- Use: Grape/Downy mildew at the rate of **125 ml /100 l of water**

PROPERTIES

- HELIOCUIVRE is a sophisticated SC formulation based on a

A top quality copper hydroxide

powered by

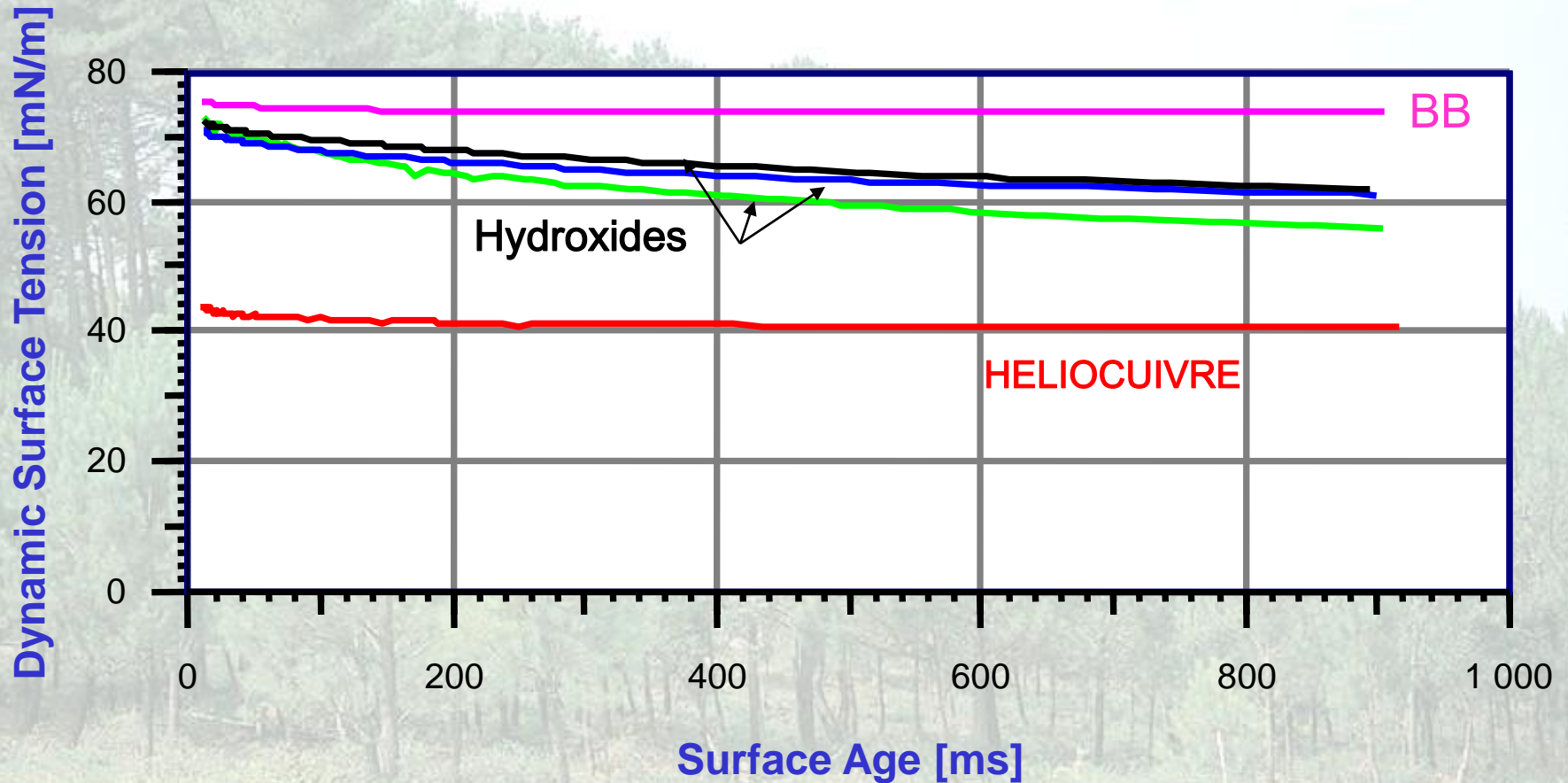
HELIOTERPEN TECHNOLOGY

- Consequently it is a unique product with unique features
- The most important ones being:
 - Excellent retention and spreading of spray droplets on the leaves and bunches => significant copper rate reduction/fed. and longer spraying interval
 - Rainfastness
 - Limited drift
 - Anti-sporulating effect => control DM even after infection => better efficacy and flexibility



RETENTION

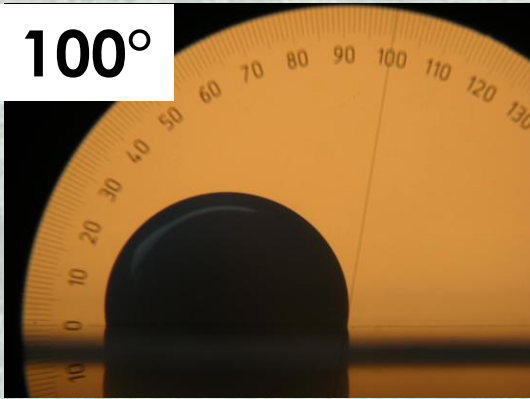
Retention depends on DST
The lower, the better



SPREADING

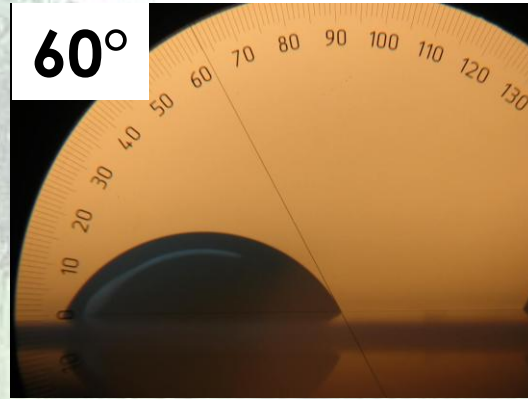
*Spreading depends on drop angle
The smaller, the better*

100°



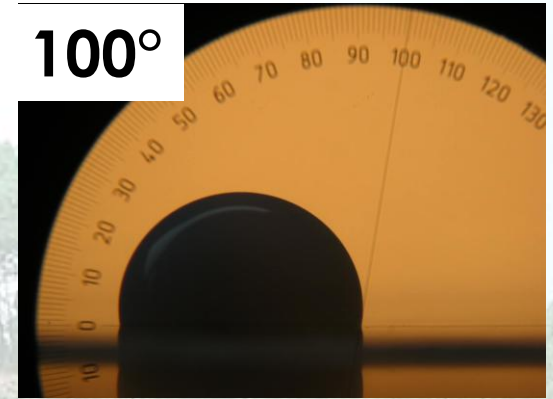
Bouillie Bordelaise

60°



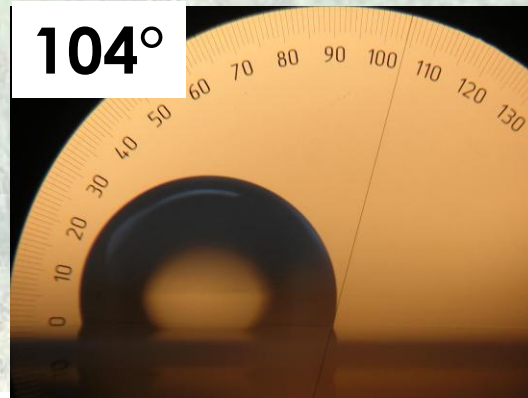
HÉLIOCUIVRE®

100°



**Copper hydroxide
based product**

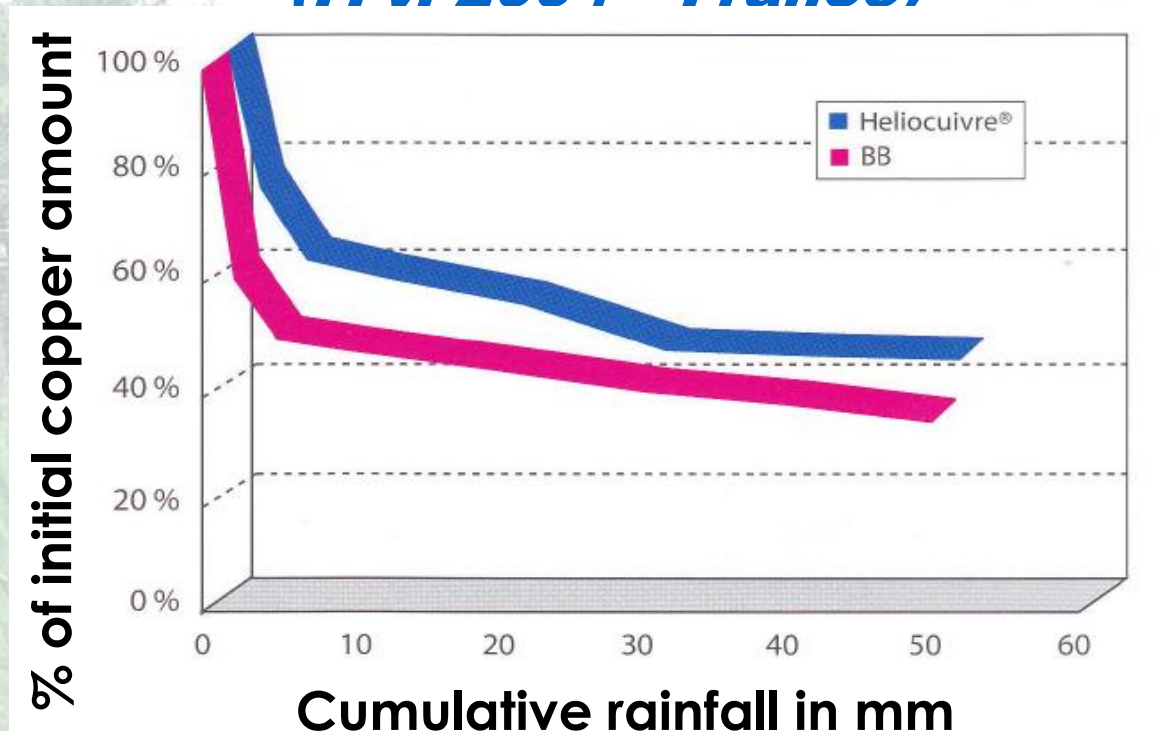
104°



Water

RAINFASTNESS

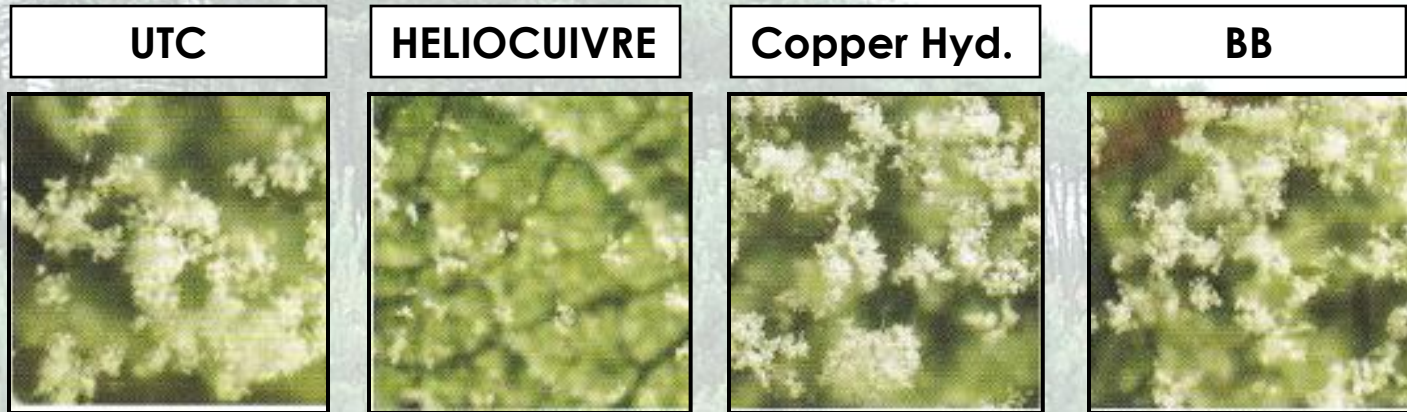
***Amount of copper found on leaves vs rainfall
(ITV. 2004 – France)***



HELIOCUIVRE statistically retains more copper than Bordeaux mixture (BB) on plant foliage

ANTI-SPORULATION

Epifluorescence microscopic view of *P. viticola* sporocystophore activity, 2 days after treatment and 7 days after inoculation



In practical conditions, HELIOCUIVRE will give the best results when applied as a preventive treatment. However, as downy mildew will occur at different developmental stages when the treatment is taking place, its anti-sporulating activity will definitely improve its efficacy.

OTHER FEATURES

- Less copper/fed. => reduced impact on the non-target organisms and the environment
- When tank mixed with other pesticides, HELIOCUIVRE:
 - improves the efficacy of the treatment
 - helps to prevent/manage resistance of the disease to the partner fungicide
 - improves residual activity
 - performs all the adjuvant functions covered by HELIOTERPEN TECHNOLOGY
 - Sticker
 - Anti-drift
 - Penetrant
 - Compatibility agent
 - Anti-foam
- HELIOCUIVRE is suitable for organic agriculture

TRIAL RESULT - GRAPE

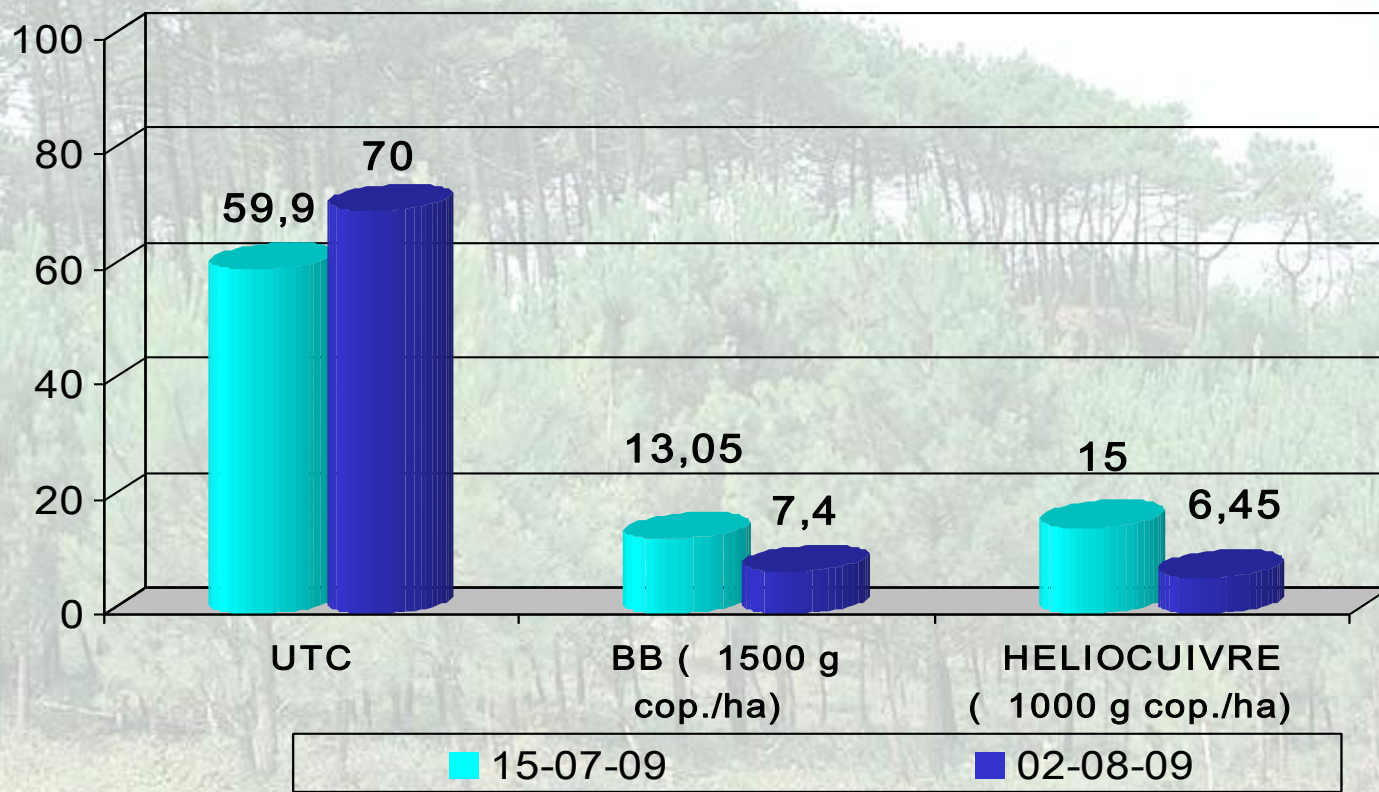


TRIAL RESULT - GRAPE

Efficacy on *P. viticola* (leaves)

Location: Villelongue dels Monts – France / Year: 2009 / Inoculation + brumisation
Var.: Merlot / Number of trts: min. 8 / Interval: 10-12 days / Mixture vol.: 200 l/ha

Intensitiy on leaves %

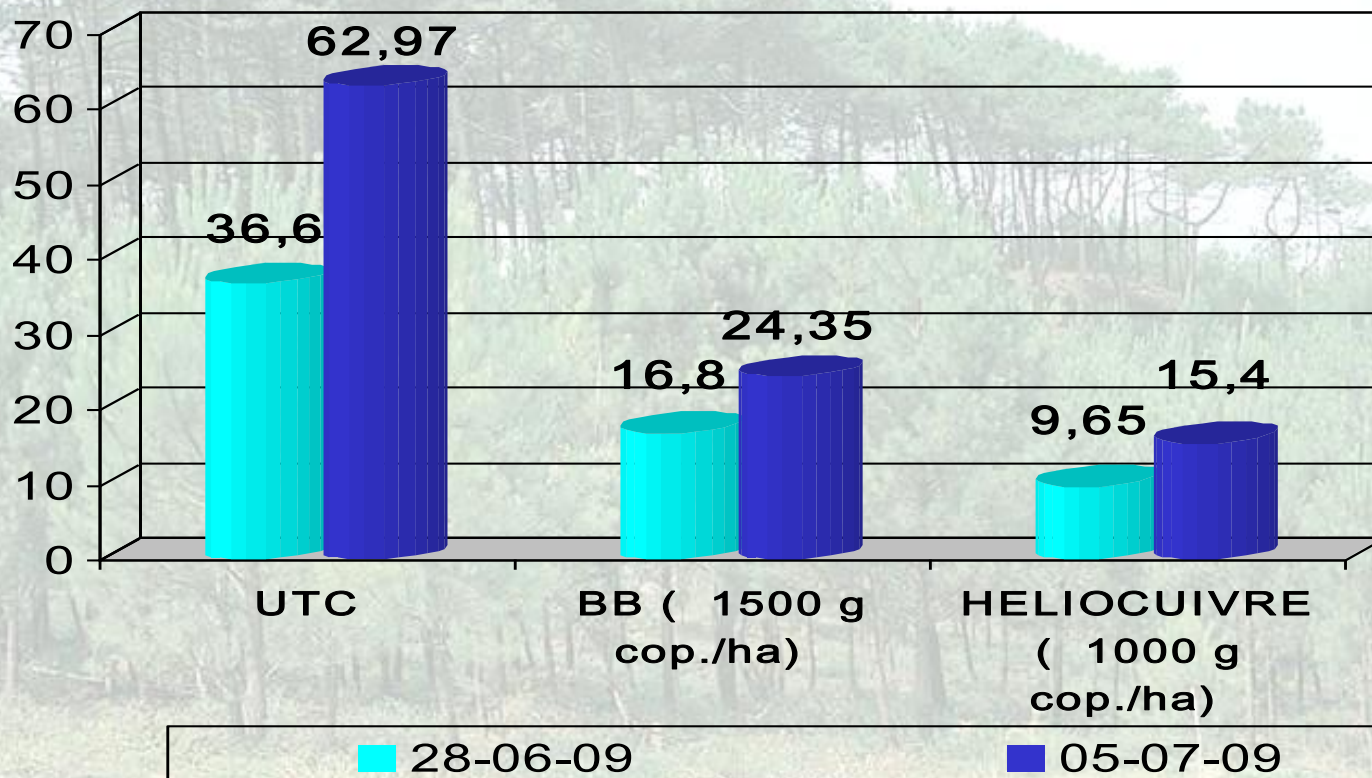


TRIAL RESULT - GRAPE

Efficacy on *P. viticola* (bunches)

Location: Villelongue dels Monts – France / Year: 2009 / Inoculation + brumisation
Var.: Merlot / Number of trts: min. 8 / Interval: 10-12 days / Mixture vol.: 200 l/ha

Intensity on bunches %

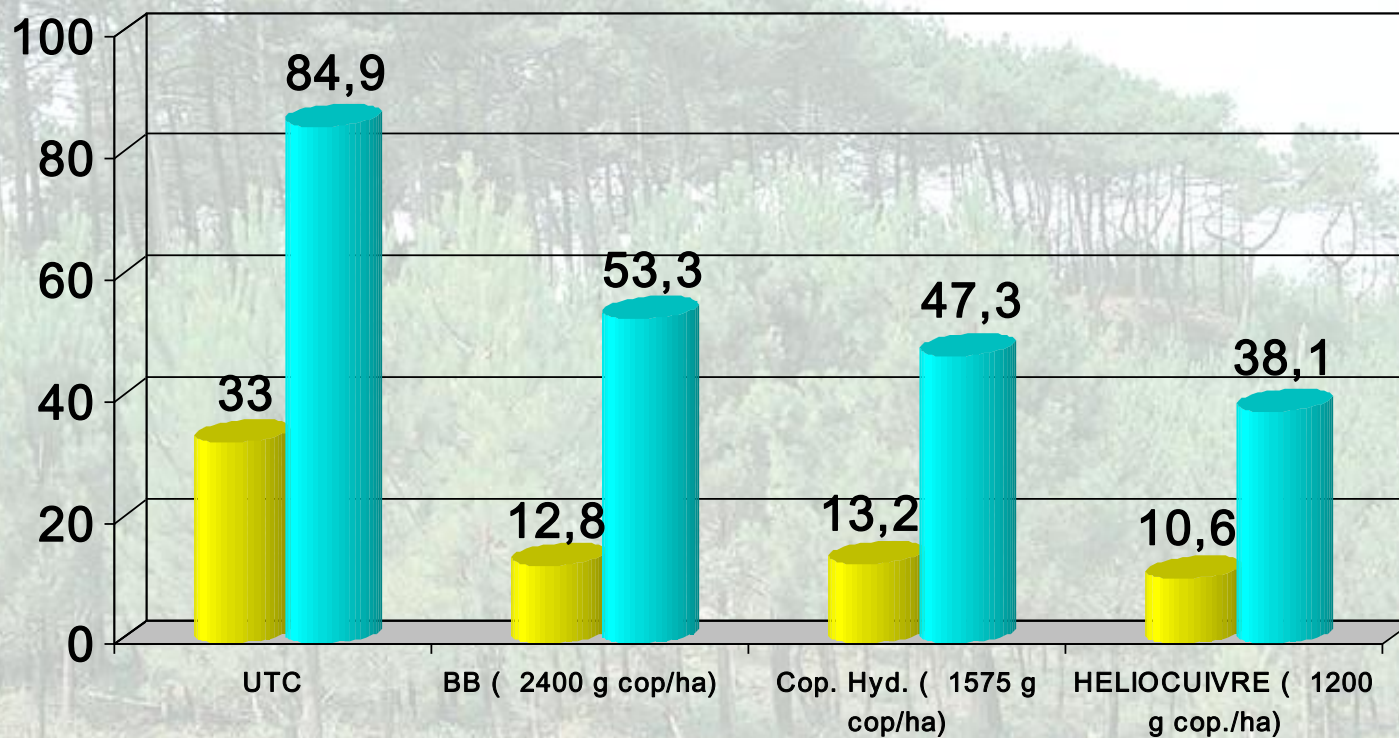


TRIAL RESULT - GRAPE

Efficacy on *P. viticola*

Location: 2 sites – France / Year: 2007

Var.: Merlot / Number of trts: 8 / Interval: 10 days / Mixture vol.: 150 l/ha



■ Severity on leaves

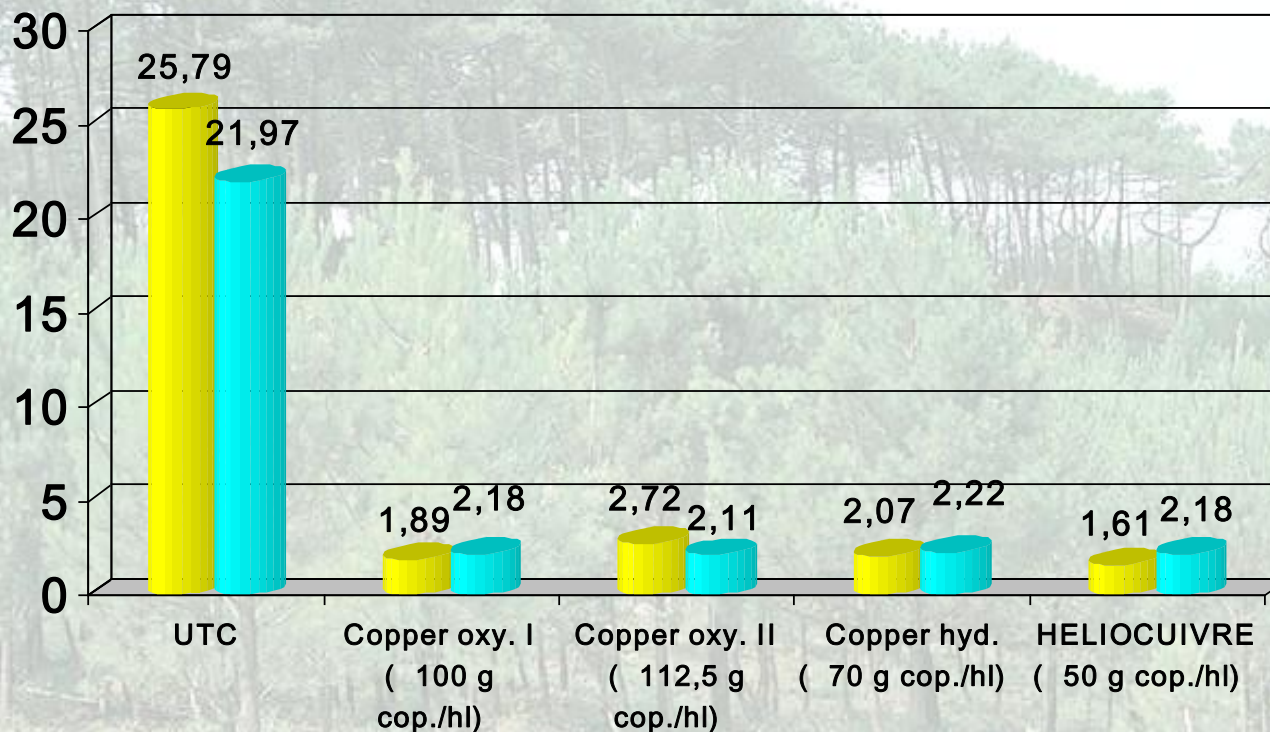
■ Severity on bunches

TRIAL RESULT - GRAPE

Efficacy on *P. viticola*

Location: Galzignano Terme – Italy / Year: 2005

Var.: Merlot / Number of trts: 13 / Interval: 7 days / Mixture vol.: 600-1100 l/ha



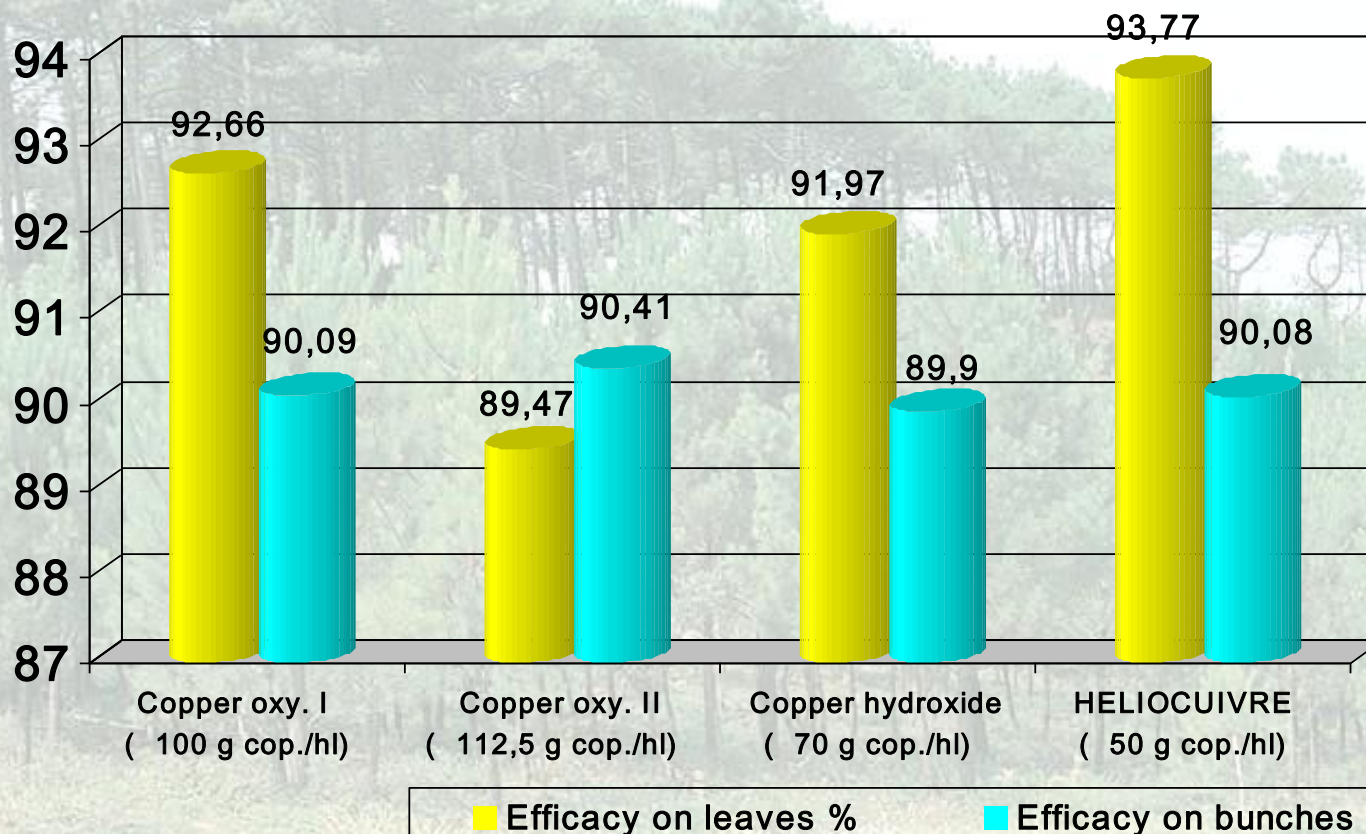
■ Severity index on leaves

■ Severity index on bunches

TRIAL RESULT - GRAPE

Efficacy on *P. viticola*

Location: Galzignano Terme – Italy / Year: 2005 / Var.: Merlot / Number of trts: 13
Int.: 7 days / Mixt. vol.: 600-1100 l/ha / Level of severity: 25.79 on leaves and 21.97 on bunches





HÉLIOCUIVRE®



**LESS COPPER
GREATER EFFECTS!**



THANKS FOR YOUR ATTENTION!



Helioterpen

