LUCROP
BAN

We care about bananas

LUCROP BAN
TANK MIX ADJUVANT

LUCROP BAN is the most innovative multifunctional adjuvant for banana crop protection. In the climate conditions where bananas grow, strong rainfall often dilutes or washes off the pesticide residues from the leaves. This causes the spray application to be less effective and the disease control of Black sigatoka to be seriously diminished. Therefore, it is helpful to add a tank mix adjuvant to the final formulation to improve the performance.

LUCROP BAN is an emulsifier, wetting and retention agent and sticker in one product.

LUCROP BAN
ADVANTAGES

- Improving the emulsion stability of the final tank mix
- Enhancing the drift control
- Providing the retention on dry and wet banana leaves
- Reducing the wash-off of sprayed fungicides
- Enhancing the adsorption on banana leaves
- Maximizing the bioefficacy of sprayed fungicide formulations
- Compatibility with most types of fungicides and spray oils

LUCROP BAN
TANK MIX EMULSIFICATION

For the preparation of the final tank mix sprays, fungicides are mixed with mineral oil, water and tank mix additives (Figure 1). Using the proper emulsifier with correct dosage, a stable tank mix emulsion is formed. Contrary, using an inappropriate tank mix additive as referenced in Figure 2 leads to certain issues such as creaming, sedimentation, flocculation or phase separation of the final tank mix.

LUCROP BAN improves the final tank mix stability by forming a stable emulsion. The fungicides are housed and well distributed in the oil droplets, a prerequisite for a successful disease control (Figure 2).

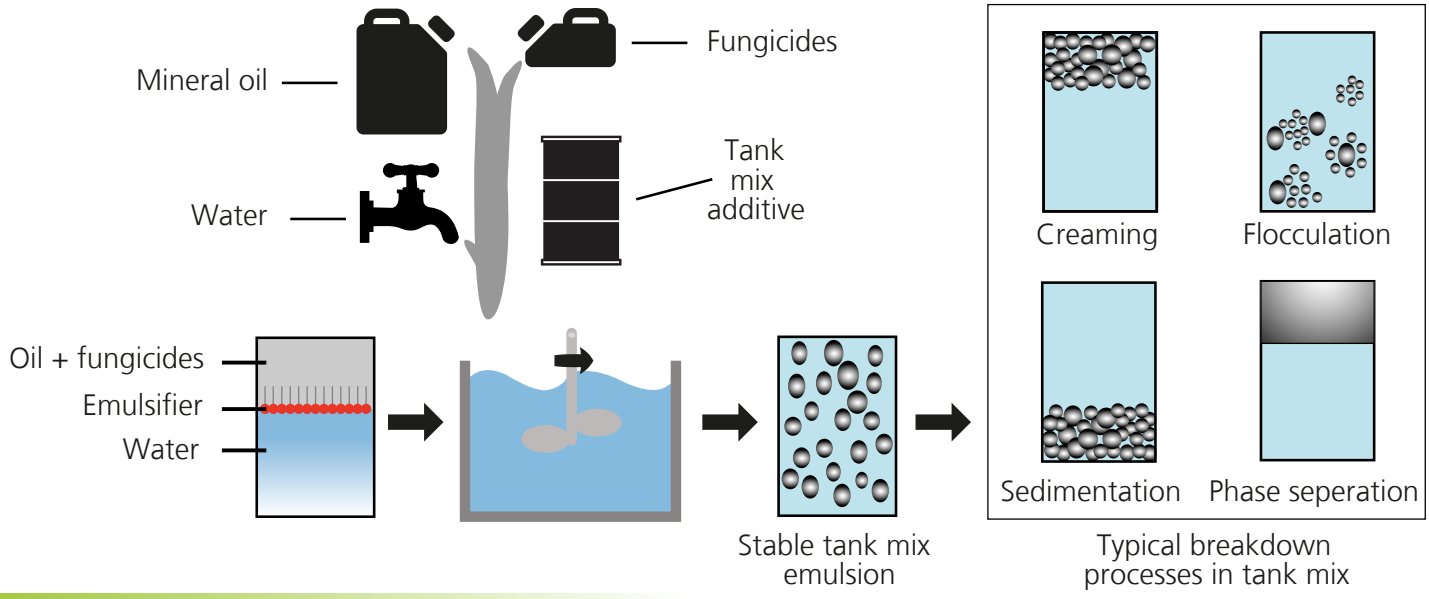

Figure 1: Tank mix emulsification process

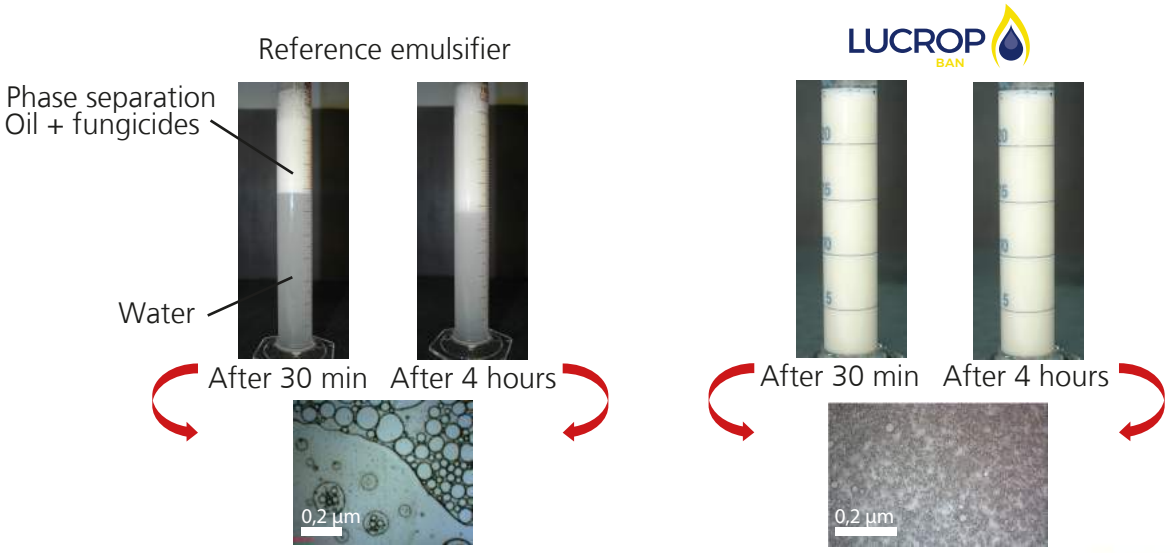

Figure 2: Tank mix emulsions - 40% spray oil / water final tank mix using Calixin as fungicide and 1% v/v (on oil) **LUCROP BAN** or reference emulsifier

DRIFT CONTROL & ADHESION
OF SPRAY MIXTURES

Climatic conditions can influence the spray performance on the plant targets significantly.
In addition, the environmental impact must be seriously considered, especially when the sprayed formulations will be washed off and penetrate into aquatic environments.
LUCROP BAN increases the amount of larger droplets in the spray.
Large droplets are heavier and will not be carried away by the wind so easily (Figure 3).
Hence, the drift control is clearly optimized by **LUCROP BAN.**

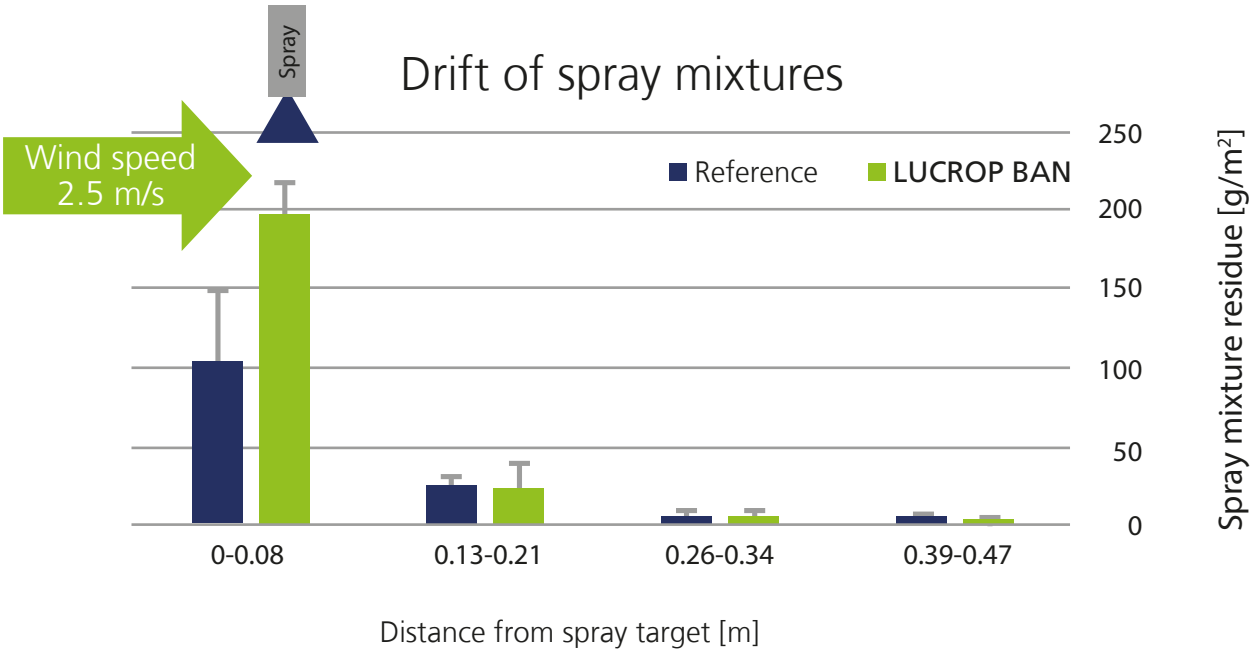

Figure 3: Drift control test - Spray (Opus SC: 30% Banole, 3% v/v (on oil) tank mix additive) was applied at a wind speed of 2.5 m/s. Spray residues were collected at specific distances and quantified.

LUCROP BAN shows a reduced run-off of spray mixture on banana leaves. With **LUCROP BAN** the spray mixtures stay on the leaves especially on wet leaf surfaces (Figure 4 and 5).

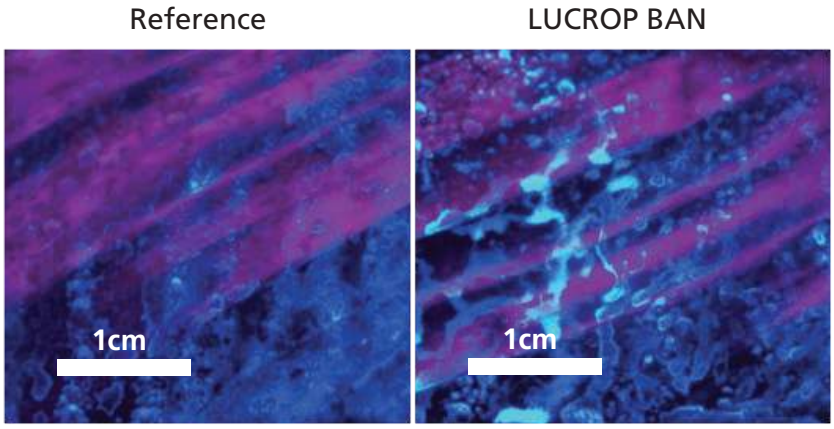

Figure 4: Spray residues on wet leaves - Spray mixture (Opus SC: 30% Banole, 3% tank mix adjuvant relative to oil, water) was sprayed on wet banana leaves. A fluorescent dye was added to the spray mixture to visualize spray deposition under UV-light.

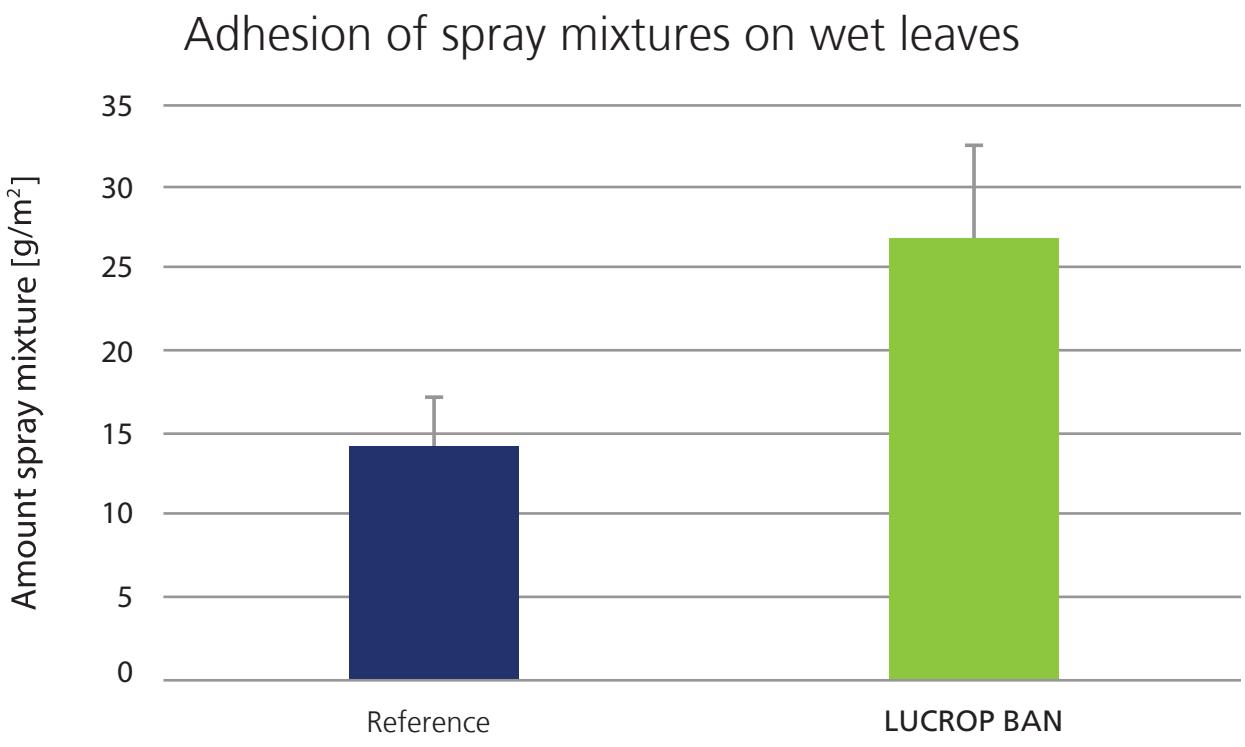

Figure 5: Adhesion of spray mixtures on wet leaves – Spray mixture (Opus SC: 30% Banole, 3% tank mix adjuvant relative to oil, water) was sprayed onto wet banana leaves and the remaining spray residue was quantified.

SINGLE LEAF TRIAL

Single leaf trials were conducted to test the performance of **LUCROP BAN** toward the disease control. Thereto fungicide spray mixtures containing **LUCROP BAN** or reference emulsifiers were applied on banana leaves.

A lower infection level by Black sigatoka and a higher rate of disease control were observed on leaves using **LUCROP BAN** in spray mixtures (Figure 6 and 7).

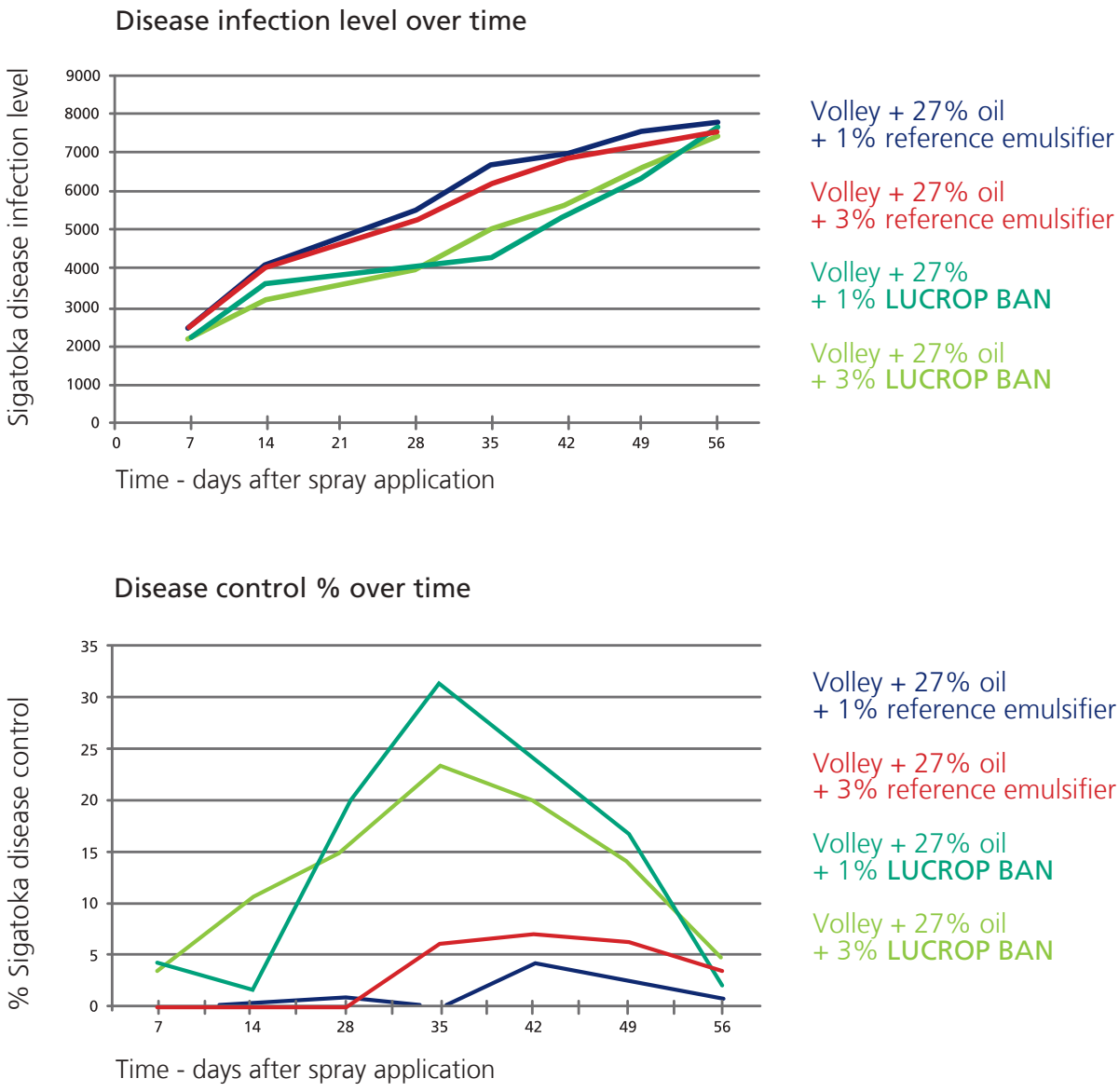

Figure 6: Results of single leaf treatment with Volley (OL formulation) combined with **LUCROP BAN** in comparison to a reference emulsifier.

Figure 7: Black sigatoka disease control after two months of pesticide treatment (single leaf) using 1% v/v tank mix additive.

LUCROP BAN shows multifunctional benefits in tank mix and spray application.
The stability of spray mixtures is preserved and a homogeneous distribution of pesticide is maintained.

The influence of unfavorable climatic conditions is reduced by **LUCROP BAN.**
It improves drift control and increases adhesion of spray mixtures on wet plant surfaces.

Biological studies of pesticides in combination with **LUCROP BAN** show significant reduction of infections by Black sigatoka.

Overall, **LUCROP BAN** optimizes the spray application in many ways for successful disease control.

LUCROP BAN

LEVACO CHEMICALS

LEVACO Chemicals GmbH

Chempark Leverkusen
Kaiser-Wilhelm-Allee
51368 Leverkusen
Germany

Phone: +49 (0)214 86927-173
Fax: +49 (0)214 86927-400

info@levaco.com
http://lucrop.levaco.com/lucrop-ban.html

LEVACO Far East Limited

Room 10, 9 Floor, Sterling Centre
No. 11 Cheung Yue Street
Lai Chi Kok, Kowloon
Hong Kong

Phone: +852 2122 9025
Web: www.levaco.hk