



dropsight
spray deposition tracer

find the best spray
calibration for your crop

Understanding the agricultural commercial crop protection mystery

Billions are spent on agricultural remedies annually, applied by spray machinery onto the crop to protect trillions in crop value from pests and diseases, but nobody knows whether the formulation reaches and settles on the intended target area.

How do you decide that the specifications of your spray equipment and your calibration thereof are delivering the formulation effectively to the primary target area?

- Are you purely relying on a visual assessment of the “wetness” of the surfaces?
- Are water sensitive cards your go-to method?
- Does the water sensitive cards show you where the water impacted, but not reflect the retention of the formulation on the target?
- How about a visual assessment of fluorescent tracers?
- Or do you rely on other people to make that call?

All of the above are subjective and qualitative and cannot be used for reliable comparative reference.

We bring you an easy-to-use scientifically developed tool to determine the actual deposition that will be a game changer in agriculture to:

- improve spray applications
- reduce risk of poor control
- optimise the use of expensive resources
- minimise the impact of contamination on natural resources



dropsight - the steps






DROPSIGHT technology entails using a portable laboratory, **LEAFLAB**, in which the leaf samples, sprayed with the **UVIEW** tracer solution, are evaluated by using your smartphone with the **DROPSIGHT** application, to determine the FPC% deposition levels achieved.

How to get started

- Step 1** Visit www.dropsight.ag, click on the blue "Client Registration/Login" button.
- Step 2** If you have not located and acquired your **LEAFLAB** and **UVIEW** yet, select "Need to find a distributor first?" This will tell you where you can order these items from the closest distributor.
- Step 3** Order your **LEAFLAB** and **UVIEW** from your closest distributor.
- Step 4** Select "Register now".
- Step 5** Fill in your login and billing information.
- Step 6** Choose your registration period, followed by your payment options and final payment. You are now a registered user of **DROPSIGHT** and ready to download and activate the **DROPSIGHT** app on your smartphone.
- Step 7** On your smartphone, search and download "**DROPSIGHT**" on the Google Play/Apple Store or simply scan the QR code supplied on the website.
- Step 8** Log in on the **DROPSIGHT** app on your smartphone and activate it by using your registered login information.
- Step 9** You are ready to use **DROPSIGHT** technology!

How does it work?

- STEP 1**  Add the **UVIEW** Solution to the tank
- STEP 2**  Spray the trial
- STEP 3**  Harvest batch leaves
- STEP 4**  Follow the prompts on the **DROPSIGHT** app and take photograph samples in **LEAFLAB**
- STEP 5**  Download your results from **DROPSIGHT** app

dropsight report in PDF format

Images shown with digitised fluorescent tracer

FPC% indicated per image

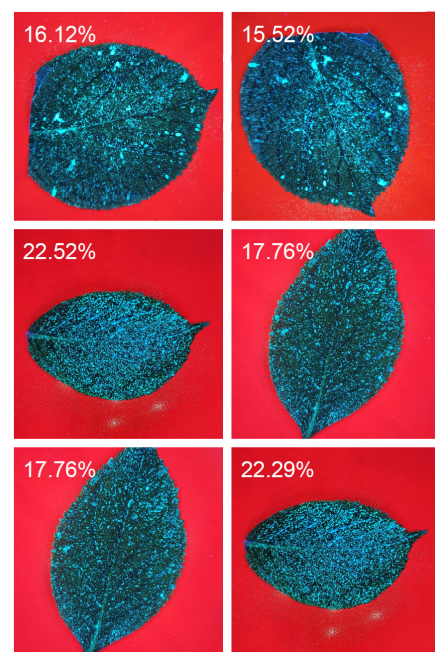
Maximum 36 Images per BATCH, 6 per Page

Summary of Results

Deposition Quantity	FPC%
Minimum	15.52%
Maximum	22.52%
Average	18.66%
Standard Deviation	2.77%

dropsight makes it possible to:

- measure deposition quantitatively in field
- compare results
- make adjustments before the chemical is added to the tank thus optimising the application deposition.



SnapLeaf process

1 Preparing the Spray Applicator

- Clean the spray applicator properly, triple rinse the tank, pump, spray lines, nozzles and filters to prevent cross contamination from previously used crop protection products or dyes.
- Empty the tank completely.
- Add enough clean water to the tank for calibration purposes. $\frac{1}{4}$ Tank is usually sufficient.
- Do NOT add any adjuvants or additives to the spray mixture.
- Calibrate the spray applicator with the appropriate setup to be evaluated.
- Test the calibrated water flow rate and adjust until accurate.
- Add enough clean water to the tank for a trial spray application (minimum of 200ℓ). This volume can be calculated using the following formula: $[\text{Spray volume } (\ell/\text{ha}) / \text{trees per ha}] \times \text{number of trees to be sprayed}$.
In the case of row crops 200ℓ will be sufficient.
- Start the agitators in the tank to ensure thorough mixing.
- Add **UVIEW** solution at a 2% concentrate (e.g. 2ℓ/100ℓ). This represents a 1x concentrate (dilute) application.
- If a 2x or 4x calibration is evaluated, the required concentrate will be 4% and 8% of **UVIEW**.
- To assure that the **UVIEW** solution has reached the spray nozzles, run the sprayer at least 20 meters downwind and away from the test site, spraying the solution for a minimum of 1 minute.
- The spray applicator is now ready to spray the deposition trial.

2 Preparing the trial site

Tree crops

- Select a representative row in the test orchard. Mark the row clearly.
- Select 10 adjacent trees to be sprayed from both sides with the calibrated spray applicator.
- Select at random three (3) of the 10 trees and mark as data trees (except for the first and last tree, which should only be buffer trees).
- Before spray application, make sure that the target surfaces (leaves) are dry.
Do not irrigate in this area till after spray application and subsequent sampling.

Row crops

- Select a representative part of the field. Mark a 4m x 10m (width x length) area to be sprayed per treatment.
- Before spray application, make sure that the target surfaces (leaves) are dry.
Do not irrigate in this area till after spray application and subsequent sampling.

3 Preparing containers for leaf sampling

Tree sampling

- Leaves will be sampled from three selected data trees at random from vertical and horizontal canopy positions (top, middle, bottom, inside, outside canopy positions).
- This will require a leaf sample container clearly marked for each tree in the trial, i.e. 3 containers, each labeled to fit the batch description used in the **DROPSIGHT** app.

Row crops

- Leaves will be sampled at random from 12 selected data plants in vertical canopy positions: Top, middle and bottom.
- This will require a leaf sample container clearly marked for each trial, labeled to fit the batch description used in the **DROPSIGHT** app.

4 Spraying the Trial

- The spray apparatus needs to be actively spraying at the calibrated parameters when entering the marked tree or field section.
- Continue spraying until the last tree or perimeter of the trial plot in the trial site has been passed.
- When spraying tree crops, spray the marked trial section from both sides in opposite directions, to simulate in field applications.

SnapLeaf process

5 Sampling the sprayed leaves

- Ensure that the leaves are completely dry before sampling. However, do not wait for longer than 30 minutes after the leaves have dried before sampling to prevent UV degradation.
- When sampling leaves, pick/cut the leaf at the petiole, taking care not to touch the leaf blade. This might disturb the pigment on the surface which can lead to inaccurate analysis.
- During and after sampling, keep the sample containers out of direct sunlight and closed to prevent UV degradation.

Tree crops

- From each data tree, sample minimum of 12 to maximum 18 leaves per data tree in all the different areas of the tree. A maximum of 36 samples (18 top leaf surface & 18 bottom leaf surface) per batch report can be accommodated.

Row crops

- From minimum 12 to maximum 18 randomly selected data plants per area plot, sample leaves randomly from the top, middle and bottom of the canopy. A maximum of 36 samples (18 top leaf surface & 18 bottom leaf surface) per batch report can be accommodated.

6 Using the leaflab for sample photography

- Ensure leaf surfaces are dry before handling.
- Make sure that the camera lens as well as the UV Filter lens on **LEAFLAB** is clean.
- Good high speed internet connection is required for **DROPSIGHT** to function.
- Place and position smartphone on the leaflab lid in position as indicated.
- Move the smartphone to position lens of the camera over the opening in the **LEAFLAB** lid.
- Place a single leaf in the middle of the red base of the **LEAFLAB** and close the lid.
- Switch on the UV light of the **LEAFLAB**.
- Follow Snap Leaf prompts.
- Name batch reference.
- Zoom picture to view whole leaf with minimum background visible without any of the leaf border touching the frame of the picture.
- Take care not to touch the inside of the leaf blade to prevent smudging.
- Process the upper and lower leaf surfaces consecutively throughout the batch, enabling you to see the upper and lower leaf presented next to one another if so required in the PDF report generated.
- Process the upper and lower leaf surfaces as separate batches if so required in the PDF report generated.
- For the comparison of results between leaves, the same phone must be used to take pictures of all the leaves.

7 Processing the PDF report

- A high speed internet connection is required.
- After the last leaf in the batch has been processed, choose the "Save Batch" icon.
- This will save the data to the cloud as well as automatically present the PDF report.
- The report can be forwarded by e-mail or WhatsApp.

