

High-speed imaging use to predict spray retention on barley leaves.

H.H. Boukhalfa^{1,2}, M. Massinon¹, F. Lebeau¹

1-Mechanic and Building Unit, Sciences and Technologies of the Environment Department,
Gembloux Agro-Bio tech, Ulg Belgium.

2- Department of Agronomy, Faculty of Sciences of the natural sciences and life, University
Mohamed khidar Biskra, Algeria.

hassinaboukhalfa@gmail.com

Laboratory studies were conducted to validate the effectiveness of the use of high-speed imaging method to replace chemical analysis by fluoremetrie. Measurements were performed with a high-speed camera coupled with a retro-LED lighting. Size and velocity of the drop were extracted by image analysis.

Drop impact types were determined by the operator. Drops were produced with a flat-fan nozzle mounted on a movable ramp. Two surfactant (Break-Thru® S240 and Li700®) were sprayed on BBCH 12 barley leaves to highlight the effect of the reduction of surface tension. Relative volume proportions were computed within of an energy scale divided into 11 classes based on the Weber number.

Results are compared to the results of the chemical analysis by spectrofluorimetry.

Keywords :

Precision spraying, Spray retention, Fluoremetry, Drop impact, High-speed imaging, Barley.