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Crop protection equipment — Droplet-size spectra from atomizers — Measurement and classification

Équipement de protection des cultures — Spectres de taille des gouttes des systèmes d'atomisation — Mesurage et classification

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Foreword

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Introduction

The measurement and classification of droplet size spectra for applications of pesticides and other chemicals facilitate the description of sprays and therefore enhance efficacy and spray drift management.

Most atomizers produce a spectrum of droplet sizes, giving different droplet size spectra in different operating conditions.

Measurement systems and laboratories can produce different absolute values for a given droplet spectrum. Differences are usually due primarily to sampling effects, dynamic size range capabilities, data processing and reporting. Some of these differences can be minimized through the use of appropriate sampling techniques. However, discrete differences in absolute values of droplet size spectra can still remain between measurement systems, especially where spatial size distribution (size distribution of particles in a given volume of space where there is no significant variation in the distribution during the sampling interval) and flux size distribution (size distribution of particles passing through a sampling zone during a given interval of time where individual particles are counted and sized)lead to sampling differences.

An approach that has been successfully used for describing spray droplet size spectra using standardized terminology involves the use of reference sprays to define reference categories for increased uniformity in the relative measures and classification of spray droplet spectra among different measurement systems and laboratories[1][2]. This is the approach taken by this document.

Each measurement facility should determine its own “in-house” reference categories using this document (with one set for each measurement system and sampling method), and then classify sprays being measured using the same measurement and sampling procedures as those for the respective reference sprays. For example, reference curves from one source (laboratory, measuring instrument and sampling technique) cannot be used to classify sprays from a different measurement source.

Using the classification of droplet size spectra, it is also possible to provide appropriate information to the user.