Evaluation of meteorological conditions for application of phytosanitary products in the Entre Rios province, Argentina

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Summary

This paper analyzes three manuals of Good Agricultural Practices in relation to meteorological conditions of the year 2018, corresponding to Paraná, Gualeguaychú and Concordia cities of Entre Ríos. The analysis shows that considering the proposed conditions for the application of phytosanitary products according to the AAPRESID-REM manual, the number of hours available for application is higher than the one that corresponds to the conditions recommended by FAO. In addition, the impact of relative humidity (RH) on the droplet evaporation process was analysed using computational simulation tools of the micro-physical processes in the ejection spray. It was observed that droplet diameters of approximately 25 µm evaporate before reaching 0.02 m. The simulated cases correspond to real situations that were recorded in Paraná. These consist of situations in which temperature and humidity values are within and outside the ranges recommended in the manuals. The highest evaporation was obtained when RH was 23 % and the dry bulb temperature (T_d) was 38°C, where droplets of up to 81.8 µm evaporated. The lowest proportion of evaporated droplets was obtained whit RH = 93% and T_d = 26.2°C, with droplets smaller than 29.2 µm evaporating.

Key words: BPA; pulverization; agrochemicals; simulation