温室轴流风送药雾靶标沉积试验 Experiment of Axial-flow Air-carried Toward-target Pesticide Deposition in Greenhouse

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关键词： 轴流风送 高压静电喷雾 荷电雾滴 雾滴沉积 靶区 植株靶标 试验

摘 要： 为研究药液雾滴在温室靶区内和植株靶标上的沉积量及分布情况，以炮塔式压力雾化轴流风送高压静电喷雾系统为试验平台，在相同风机频率、喷雾压力和喷雾流量条件下，通过改变喷头高度和静电电压对风送药雾进行靶标沉积试验和分析。结果表明：沿风送轴线上距喷头150～200 cm靶区内的药雾沉积量都出现一个沉积高峰区；随着静电电压的增大，植株靶标上的药雾沉积量明显增加，荷电后的药液雾滴在风送射程和喷幅内的靶标沉积率显著提高。根据实际喷施作业目标，合理布置喷头高度和调节合适电压，是增加靶标沉积率的重要手段。 The object of this paper is to study the range of pesticide droplet deposit and droplet distribution, in different target district and plant target. By axial-flow fan of the air-carried blast sprayer in greenhouse, spraying experiment was carried out with variable height of nozzle and charged voltage, under the same condition of spray pressure, spray flux and frequency of fan. Taken the barbette model pressure atomization axial-flow air-carried high-voltage electrostatic spraying system as the experiment platform, the parameters of spraying deposition on target were calculated and analyzed. The results showed that one deposition peak area is found along the wind cylinder axes at the distance of 150～200 cm from nozzle; with the increasing voltage, pesticide droplet deposition on plant target increases obviously. The toward-target deposition ratio rises distinctly within range of spraying in the state of induction charge. To adjust height of nozzle and charged voltage is the important measures for adding toward-target deposition depending on the practical target of spraying application.

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