

# Regulating Efficacy and Phytotoxicity of Controlled-released Granules

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Several pest control strategies have been reported in an effort to reduce the amount of pesticide used, such as biological control systems, integrated pestmanagement and controlled-release (CR) formulations. The latter can regulate (and often slow) the rate of availability of a pesticide, localizing it in the crop zone and reducing the amount accessible to leaching.

In the previous report, it was reported that the CR formulation containing wax matrix exhibited excellent efficacy and duration. In this study, to find out more effective application for the CR granules, 1% and 2% dinotefuran granules and 1.5+1.5 granule of acetamiprid+A mixture, the efficacy against the brown planthopper on the rice and the cotton aphid on the red pepper and the cucumber and the damage of plant for each granule were investigated. The CR granules for technical grade dinotefuran and acetamiprid mixture contained the amount of the 0%, 10% and 20% wax matrix, respectively.

As the amount of wax matrix increased, the compounds were more effective. Especially, the effect of CR granules containing 20% wax matrix was better as time passed. The efficacy of the CR granules containing 10% and 20% wax matrix lasted for 60 days. The phytotoxicity, however, was more intensive as the amount of wax and the CR granule of acetamiprid+A mixture was more harmful to the plants than dinotefuran.