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## **Induction of Resistance against Rice Blast Disease by a Novel Class of Plant Activator, Pyrazolecarboxylic Acid Derivatives**

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Synthesis and characterization of anti-rice blast activity of pyrazole derivatives was described. Structure-activity relationship study indicated that a carboxyl group at 5-position of 1-methyl-1*H*-pyrazole played an important role in the activity and that a halogen atom such as a chlorine or bromine at 3-position enhanced the activity. Among the derivatives, 3-chloro-1-methyl-1*H*-pyrazole-5-carboxylic acid (CMPA) exhibited the highest anti-rice blast activity with the ED<sub>80</sub> (80% effective dose, the concentration needed for 80% inhibition of disease development) of 0.05 mg/pot. CMPA did not have any significant effects on the hyphal growth, spore germination, and appressorium formation of *Pyricularia oryzae*, suggesting that CMPA induces systemic acquired resistance in rice plants.

### **Keywords:**

rice blast, *Pyricularia oryzae*, systemic acquired resistance, pyrazolecarboxylic acid

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