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**Effect of agricultural materials of traditional agriculture on control of rice blast
(*Pyricularia oryzae*)**

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Abstract

The objective of this research was to determine controlling effects on rice blast (*Pyricularia oryzae*) in rice plants by using plant extracts from different extraction methods (water, boiling water, fermentation, and ethanol) from 38 agricultural materials of traditional agriculture. Rice blast was completely suppressed by 3% ethanol extracts in *Rheum palmatum* roots, and suppressed 97% and 77% by 10% ethanol extracts in onion bulb and pine tree leaves, respectively in a laboratory test. However, other agricultural materials showed low effect on suppression of rice blast. Additionally, in a seedling test, rice injury of two cultivars (Ilmibyeo and Hopyoungbyeo) against rice blast was reduced 40-71%, 29-63%, and 23-63% by 5 and 10% ethanol extracts in *Rheum palmatum* roots, onion bulb, and pine tree leaves, respectively, compared with non-treated controls. Rice injury of two cultivars (Ilmibyeo and Hopyoungbyeo) against rice blast was reduced by 21-55%, 23-46%, and 5-39% in response to *Rheum palmatum* roots, onion bulb, and pine tree leaf applications at 100, 200 and 400 g/m² at 0 day after seeding, respectively, compared with non-treated controls. Rice plants did not show any leaf injuries and growth reduction after treatments of the *Rheum palmatum* roots, onion bulb, and pine tree leaf extracts or soil application. Thus, the above materials may be used for controlling rice blast in organically produced rice fields.

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Keywords: Agricultural material, plant extracts, *Pyricularia oryzae*, rice, traditional agriculture.

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