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| Keyword 1                            | : Food security  |
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| Title of Entry                       | : INOCULATION TECHNIQUES FOR ASSESSMENT OF RICE PANICLE BLAST RESISTANCE   |
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| Abstract                             | : Techniques for rice panicle blast (PB) inoculation involve the use of fully grown plants (in vivo) or use of detached panicle (in vitro). Different inoculation methods for PB resistance evaluation have been developed but not widely adopted for routine PB resistance screening. Three inoculation methods (spraying, injection and cotton wrapping) were equally effective in producing typical PB lesions in susceptible plants. All inoculation methods can distinguish the differential reactions of the five test varieties with different blast resistance and there was no significant difference among them even at different spore concentrations. The method involving the use of cotton wrapped around the panicle for inoculum delivery was found to be superior to spraying or injection method. Sprayed inoculum induced PB when sprayed plants are immediately put inside humid chamber, but quickly dried and seldom caused infection when exposed in open field or nursery conditions. Injecting the inoculum into the panicle base induced infection both in the greenhouse and field, but the method is cumbersome and appeared to be destructive. Because the inoculum comes directly in contact with injured tissue, infection in susceptible host was always severe, thus intermediate level of resistance cannot be determined. Inoculation by wetting a spore suspension into a cotton wad wrapped around the panicle provides a convenient and effective method of inoculum delivery both in greenhouse and field conditions. During trials under field condition, dry cotton wads were wrapped and held in place by Parafilm in individual panicles, beginning in the morning. Near sundown, when the ambient temperature is lower, inoculum is wet into the cotton using a pipet or syringe. This allows simultaneous inoculation of a large number of panicles at the same time. The parafilm wrap |

protects the cotton with inoculum from drying up, thus allowing the spores to germinate and initiate infection even under low ambient humidity. The method is also not destructive thus allowing different levels of resistance/susceptibility to be scored. The PB disease assessment method modified from IRRI standard evaluation system is visible, easy to measure and scoring. It is easier for inexperienced researchers to collect accurate panicle blast phenotyping data.

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