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| Field evaluation of plant extracts against rice sheath blight (Rhizoctonia solani) disease |
| Abstract Body | Sheath blight caused Rhizoctonia solani, is a major fungal disease that has been recorded in all major rice growing areas. Due to the lack of resistant rice varieties, the management is accomplished by the application of synthetic fungicides. ~~With the current economic crisis prevailing in the country, it is difficult to find out expenditure for agrochemicals~~. As well as continuous inappropriate usage of chemicals causes undesirable effects on the environment and human health. Therefore, alternative methods for disease management have become more important than ever before. Plant extracts become vital among the alternative methods, as it is an environmentally safe biocontrol method. The present investigation was conducted to screen the efficacy of several plant extracts against *R. solani* under field conditions. Aqueous plant extracts of bulbs of garlic (*Allium sa*tivum), plant extract combination of bulbs of garlic and leaves of clove (*Syzygium aromaticum*) and plant extract combination of bulbs of garlic, leaves of clove, leaves of hulanthala (*Ageratum conyzoides*) along with carbendazim as (50% WG) fungicide (positive control) and water (negative control) were used in the experiment according to the results of in vitro test. After isolation of the pathogen, mass preparation of the pathogen was done using a mixture of rice bran and rice husk (1:1) and agar. The media with *R. solani* was kept at room temperature for about one week and inoculated between the leaf sheaths of the rice plant. Selected plant extracts were sprayed to the plants at 100 % concentration. The highest disease severity was observed in water (39.28 %) treated pots whereas the lowest disease severity (26.67 %) was observed in carbendazim- treated pots. The aqueous plant extract combination of *A. sativum, S. aromaticum* and *A. conyzoides* ~~was~~ showed the highest disease severity (33.29 %) against R. solani, followed by plant extract combination of A. sativum and S. aromaticum and plant extracts of A. sativum 29.88 % and 26.67 % respectively. Therefore out of these plant extracts, A. sativum was proved to be the most effective in inhibiting the growth of R. solani which can be introduced as a possible alternative method with further evaluation. |