EVALUATION OF NON-PESTICIDAL METHODS FOR MANAGEMENT OF BLISTER BLIGHT OF TEA

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Blister blight caused by *Exobasidium vexans* is a highly destructive disease of tea (*Camellia sinensis* (L.) Kuntze). The disease is mainly controlled by the frequent application of copper-based fungicides, which could lead to serious environmental and health issues. The present study was conducted to evaluate potential use of non-pesticidal methods to reduce blister blight incidences, yield performances and changes of selected biochemical parameters. Field experiments were conducted in Queensberry Estate, *Nawalapitiya* using cultivar TRI 2024 to evaluate four treatments, spraying 2% sodium bicarbonate (SB) and 1 mM salicylic acid (SA), hot air (50°C) treatment and applying copper oxychloride (2g/l) spray. Treatments were applied six times in weekly intervals and blister blight incidence was recorded at two-day intervals while, the yield data was recorded at 7th day after each application. Separately, the effect of Infra-Red and UV radiation on the suppression of blister was tested by exposing tea leaves at 3, 5, 10 seconds in laboratory. Tea leaves of treated plants with sprays were analyzed for four defense enzymes, polyphenolic content and chlorophyll *a* and *b*. Percentage blister blight incidence was significantly ($p<0.05$) reduced by SB and SA spray treatments in comparison to the fungicide treatment, while no significant difference was observed between SB and SA. The reduction of disease incidence by SB and SA sprays was prominent from the second application onwards. Hot air treatment reduced the disease incidence significantly from the fourth application onwards. Leaves treated with Infra-Red and UV radiation was not effective as the leaf moisture content was reduced drastically. SB and SA treatments resulted significantly higher levels ($p<0.05$) of defense enzymes, polyphenolic compounds and leaf yield. Therefore, sodium bicarbonate, salicylic acid and hot air treatments could be identified as successful non-pesticidal measures to reduce blister blight incidence of tea.

Keywords: Blister blight, Chlorophyll, *Exobasidium vexans*, Defense enzymes,