



RESEARCH ARTICLE

Evaluation of combination of potassium phosphonate and *Trichoderma harzianum* on management of *Phytophthora* foot rot of black pepper (*Piper nigrum* L.) under arecanut cropping system

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ABSTRACT

Phytophthora foot rot (*Phytophthora capsici* Leonian) was significantly least on black pepper (*Piper nigrum* L.) vines wherein disease incidence was minimum leaf yellowing, least defoliation, minimum death of vines and highest yield (green berry yield and projected yield) due to protection of vines to foliage and root zone with application of potassium phosphonate (@ 0.3 %) as spraying (@ 2 l^{vine}) and drenching (@ 3 l^{vine}) and soil application of *Trichoderma harzianum* Rifai. (MTCC-5179) @ 50 g per vine with one kg of neem cake to the root zone during pre-monsoon (June) and peak monsoon (August). In case of farmers practice wherein only affected vines were applied with 1 per cent Bordeaux mixture to the foliage after appearance the disease. Those vines registered maximum leaf yellowing and maximum defoliation, maximum death of vines and lowest yield (green berry yield and projected yield).

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INTRODUCTION

Black pepper (*Piper nigrum* L.), the king of spices, and traditional historic spice is being cultivated as mixed crop in arecanut and coffee cropping system and also as pure crop since ancient times in India. Black pepper perennial woody

climber is native of the Western Ghats of South India. The cultivation of crop in the world is mainly confined to India, Brazil, Indonesia, Malaysia, Thailand, Sri Lanka and Vietnam. In India, Black pepper is being cultivated in Kerala (96%), Karnataka (3%) and to a lesser extent in Maharashtra, Andhra Pradesh, Tamil Nadu and North Eastern regions in an area of