



RESEARCH NOTE

# Efficacy of *Pseudomonas fluorescens* in relation to diseases incidence of soft rot of ginger in Uttara Kannada district of Karnataka

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## ABSTRACT

Ginger (*Zingiber officinale* Roscoe.) an important spice crop is seriously damaged during monsoon by soft rot causing organism, *Pythium aphanidermatum* (Edson.) Fliz. in Uttara Kannada district of Karnataka. Application of *Pseudomonas fluorescens* (@ 1 per cent at 10<sup>8</sup> cfu) as seed treatment and three sprays at 15 days interval from 30 days after planting showed reduced incidence of soft rot disease and improved the vigour and yield of the crop.

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Ginger (*Zinger officinale* Roscoe), a herbaceous spice crop is grown in Uttara Kannada district of Karnataka during monsoon. It is used as fresh, dried, pickled preserved in syrup, powdered, crystalloid since time immemorial. It is also used in curry powder, cakes and cookies. It has multiple medicinal properties viz., cures indigestion, relieves seasickness, fights nausea, diarrhoea, lowering cholesterol, reducing arthritis pain and preventing ulcers. India is the largest producer of dry ginger in the world. It is cultivated throughout India stands first in the production. The rhizome under ground is succumbed to infection by soft rot [*Pythium aphanidermatum* (Edson.) Fliz.], a soil borne organism, which results in huge losses to the tune of 80 per cent. The disease is more severe during South West monsoon especially under ill drained soil condition. The disease appears as yellowing of lower leaves tip which spreads gradually to leaf blade and leaf sheath along the margin. Later the yellowing spreads from bottom to upwards in all the leaves with drooping, withering and drying. Pseudo stem at collar region shows pale translucent brown

colour with water-soaked lesions. The fungal infection spreads to rhizome with rotting symptoms and results in death of plant. The disease aggravates with application of nitrogenous fertilizer within fortnight. Though the disease could be managed by integration of cultural practices and chemical methods, the residue of chemicals in the produce results in poor quality and less price in the international market. There is little information on the efficacy of bioagent viz., *Pseudomonas fluorescens* in combating the disease. Hence, the present investigation was taken up to find out the effectiveness of bioagent on the disease.

The experiment was conducted at Horticulture Research Station, Sirsi, Uttara Kannada, Karnataka during 2011. The centre is situated at an altitude of 516 mts MSL with and average annual rainfall of 2500 mm with 110 rainy days. The temperature ranges from 16 °C to 36 °C. The variety used in the experiment was popular local cultivar which was highly susceptible to the disease. The trial was laid out in RBD with 4 replications. There were seven treatments, out of which four