

Improved *Trichoderma*- Based Application Strategies for Effective Management of Stem Rot in Groundnut

Stem rot is an important disease of groundnut grown under both rainfed and irrigated conditions in India. It can cause heavy economic losses, reducing yield by up to 27%. The same fungus also causes pod rot, which can further reduce yield by nearly 30% in farmers' fields. The disease is caused by *Agroathelia rolfsii*, which produces hard, long-lasting structures called sclerotia. These sclerotia survive in the soil for many months and help the disease to spread easily.

Several practices are recommended to reduce stem rot, such as deep summer ploughing, crop rotation, soil solarization, mouldboard ploughing, adjusting the sowing time, using suitable varieties, raised-bed planting, applying bioagents and using fungicides. However, managing this disease in farmers' fields is still difficult. This is mainly because farmers often do not have suitable rotational crops or fresh land to use and undecomposed crop residues in the field help the fungus to grow. In addition, the fungus developed resistance against some commonly used fungicides and resistant varieties of groundnut against this disease are not yet available that make management of this disease more challenging.



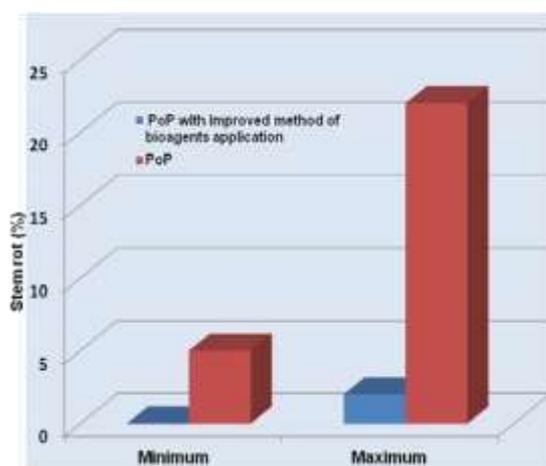
Groundnut Stem and Pod rot incited by *Agroathelia rolfsii*

Improved Trichoderma Based Application Strategies

Improvements in the method of applying bioagents such as *Trichoderma harzianum* and *T. viride*, developed and recommended by **ICAR–Indian Institute of Groundnut Research (ICAR–IIGR), Junagadh** have shown a significant positive impact on the management of stem rot in groundnut.

ICAR–IIGR advised farmers to adopt an integrated application method consisting of **Seed treatment with *T. viride* or *T. harzianum* @ 10 g per kg seed, followed by soil application of 50 kg farmyard manure enriched with 4 kg of bioagent at sowing, 40 DAS, and 70 DAS. This refined method proved highly effective in reducing stem rot incidence.**

Several farmers in the Saurashtra region adopted the ICAR–IIGR recommended technology during Kharif 2014 and 2015. Fields where traditional bioagent application methods were practiced showed disease incidences ranging from 5% to 22%. In contrast, farmers who implemented the improved seed treatment and enriched soil application recorded less than 2% disease incidence, clearly demonstrating the superiority of the ICAR–IIGR technology.



Stem rot incidence in POP vs. POP with improved method of bioagents application

By adopting this improved method, farmers were able to prevent considerable crop loss, saving approximately 200 kg of in-shell groundnut per hectare from stem rot and pod rot. With an investment of only around Rs. 1,500 in bioagents, farmers gained nearly Rs. 10,000 worth of additional yield.

This highlights that the ICAR–IIGR developed technology is not only effective in disease control but also economically beneficial and easy to adopt for groundnut growers.

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