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Genomics of bio-control agent tested against *Fusarium oxysporum* and *Ganoderma lucidium* in Shisham (*Dalbergia sissoo*)

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Eighteen bacterial isolates were screened for antagonistic activity against *F. oxysporum* and *G. lucidium* *in vitro* conditions. Five cultures showed prominent activity against the test pathogens. These cultures were also characterized for HCN production, siderophore formation and chitinase activity. On the basis of antagonistic activity against two test pathogens and biochemical characterization; five best cultures were identified as SD-25, SD-30, SD-87, SD-97 and SD-99. Maximum seed germination (100%) *in vitro* was

observed in the treatment having (SD-99 only); followed by SD-99+ *G. lucidium*. These cultures were also tested for plant growth parameters *in Dalbergia sissoo* under pot house conditions. Isolate SD-99 showed maximum shoot dry weight (0.463g) and root dry weight (0.228g). This culture showed ninety nine percent similarity to *Bacillus sp. strain A2733* on the basis of 16s rRNA sequencing.

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