

Green bean (*Vigna radiata*) seedling growth inhibition by *Chromobacterium violaceum* under in-vitro condition.

Abstract

Chromobacterium violaceum is a pathogenic soil bacterium producing violacein and hydrogen cyanide both of which is controlled by quorum sensing with the same signal molecule homoserine lactone (C6-HSL). A study was carried out to determine if quorum sensing was a factor that was required for inhibiting the growth of green bean (*Vigna radiata*) seedling. The results showed that *C. violaceum* which reached quorum level inhibited the growth of green bean seedling as much as 86.5% for the shoot length and 92.1% for the root length. However inhibition was reduced to 37.5% for the shoot and 17.5% for root if the quorum level of *C. violaceum* was not reached under an aseptic environment. Furthermore sterilised inoculant (killed) which had not reached quorum level would not affect the growth of green bean seedlings. These results indicate that quorum sensing in *C. violaceum* is a factor that determines its inhibitory effect on seedling growth.

Keyword: *Chromobacterium violaceum*; Quorum sensing; Seedling growth; *Vigna radiata* inhibition.