Summary

Our broad aim was to incorporate traits which can enhance the biofertilizer potential of *B. subtilis* DK1042. With this approach, we could incorporate oxalic acid production and secretion ability in *B. subtilis* DK1042 but the yield of oxalic acid was not sufficient enough to impart mineral phosphate and potassium solubilization ability. Oxalic acid in the range of 5 – 10 mM is required to solubilize mineral complexes in the rhizosphere. Oxaloacetate occurs at the very important place of anaplerotic node and it is used to replenish the citric acid cycle and for the synthesis of several amino acids so, it is possible that the activity of the enzymes other than OAH that use oxaloacetate as a substrate could be higher than OAH because of which we could not achieve higher production and secretion of oxalic acid in *B. subtilis* DK1042. On the other hand, incorporation of VHb in *B. subtilis* DK1042 enhanced its biofilm formation ability, and biofilm formation is positively correlated with the colonization and biocontrol activity of *Bacillus* spp. Therefore, these findings also emphasize on the potential use of genetically modified *Bacillus* species containing VHb as biofertilizers/biocontrol agents for sustainable crop production in future.