# The Agricultural Application of Phytomethylotrophy

Mittel, Frank "Kaelin" (School: American Fork High School)

Methylotrophy is the means of obtaining nutrition via the assimilation of single-carbon compounds. It is employed as a sole means of nutrition by many bacteria; however, the enzymes used in the phytomethylotrophic metabolism are ubiquitous in organisms. One of the terminus metabolites of methylotrophy is carbon dioxide. These enzymes can be exploited to increase plant growth by increasing endogenous carbon dioxide. Plants grow much faster when the phytomethylotrophic metabolism is stimulated with methanol. This principle can be used in an agricultural setting to increase crop yield and possibly multiply growing seasons.

**Awards Won:**