Abstract - We investigated carbohydrate utilisation patterns from organic farms, conventional farms and virgin soils of Tharad, Banaskantha district, Gujarat India Profiles of utilisation capacity of carbohydrates were statistically analysed by two multivariate methods *viz.* Principal Component Analysis and Hierarchical Cluster Analysis. The data were recorded in terms of acid production, gas production and alkali production from various carbohydrates. These data were used individually and in combination for statistical analysis and Shannon diversity index calculation. The results from such analysis were used in combination with other parameters to characterise different soils.