

## FULL REPORT

Project Title: **QUANTIFICATION OF VAM FUNGI IN SOIL FOR SUSTAINABLE PRODUCTION OF COTTON**

### INTRODUCTION

Our previous research indicated that in normal soils, fungi that formed VAM were present in the upper 15cm of soil, and that VAM were established rapidly in root systems. Thus in seasons where crop followed crop, more than adequate quantities of VAM fungi were always present. However, Long Fallow Disorder and similar syndromes are a serious concern to farmers, and we lacked any understanding of what levels of VAM fungi are necessary in soil to establish adequate levels of VAM in the roots of cotton plants. We also needed to know where in the soil profile the VAM fungi survived following long fallows.

### OBJECTIVES

The research had three parts:

- Quantify the VAM fungi at depth in the soil
- Determine the rate of colonisation of roots of cotton by VAM fungi, and
- Develop understanding of the relationship between rate of colonisation and quantity of VAM fungi.