

SUNFLOWER-SUMMER LEGUMES INTERCROPPING SYSTEMS UNDER RAINFED CONDITIONS: SOIL MOISTURE AND SOIL FERTILITY STATUS

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ABSTRACT

The study to determine the effect of sunflower and summer legumes in pure stand and in intercropping systems on soil moisture and fertility status carried out at University of Arid Agriculture, Rawalpindi during summer 1994 revealed that sole legumes proved to be the best for moisture conservation, followed by intercropping treatments and then sole sunflower. Nitrogen, Phosphorus and Potassium content of soil was not affected significantly by the various treatments. Nitrogen and Potassium content of the soil decreased significantly during crop period.

INTRODUCTION

Water and plant nutrients are the most important pre-requisites for successful crop production. Better water use was probably a common cause of yield advantages in semi-arid tropical areas because this was basically the most limiting resource (Baker and Norman, 1975).

the maize rhizosphere. Pigeonpea increased soil nitrogen content but as an intercrop, it did not increase maize yield at any level of nitrogen. Maize grain yield was not affected by the legume intercrops, indicating neither competitive depressions nor nitrogen transfer from the legumes (Yadav, 1981). Present study was undertaken to determine the effect of sunflower and summer legumes in pure stands and in intercropping systems on the soil moisture and fertility status under rainfed conditions.

MATERIALS AND METHODS

The study to determine the effect of sunflower and summer legumes in sole and intercropping systems on soil moisture and fertility status was conducted at the University of Arid Agriculture, Rawalpindi during summer 1994. The meteorological data during the crop growing season is presented in Table 1. Treatments comprised of sole sunflower, soybean, mungbean, mashbean, and