

REDGRAM BAJRA INTERCROPPING UNDER SEMI-ARID CONDITIONS OF ANANTAPUR REGION OF ANDHRA PRADESH

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ABSTRACT

Redgram sown in June recorded significantly higher yield components and yield in redgram/bajra intercropping under semi-arid conditions at Anantapur in Andhra Pradesh. Sole crops of redgram and bajra recorded higher yield components and yields than intercrops. Bajra sown as staggered intercrop between the redgram rows at 60 day delay, recorded very low yields because of severe competition from the redgram. Intercropping systems recorded higher LER than the sole crops. Sole redgram sown in June recorded higher monetary returns.

INTRODUCTION

Intercropping is one of the beneficial cropping systems recommended to mitigate the adverse climatic conditions. Intercropping systems followed in the semi-arid tracts of Anantapur district in Andhra Pradesh are redgram/groundnut, redgram/setaria and redgram/bajra. Singh et al. (1979) reported lower grain yield of bajra when it was sown 30 days after sowing of redgram as an intercrop. To study the possibility of advance seeding of redgram component in the redgram/bajra intercropping system, the present study was taken-up under rainfed conditions in the sandy loams at Agricultural Research Station, Anantapur.

MATERIAL AND METHODS

The experiment was laid out during kharif seasons of 1986 and 1987 with five treatments replicated four times in a randomised block design. The treatments included sole crops of redgram sown in August (T1) and June (T4) and bajra (T2) and intercropping treatments in 1 : 2 ratio (T3 and T5). In the simultaneous intercropping treatment (T3) both the crop components were sown at the same time i.e. in the first week of August. In the staggered intercropping treatment (T5) redgram was sown in the first week of June and bajra in between the redgram rows in the first week of August. Sole crops of redgram (LRG 30) and bajra (ICTP 8203) were sown at a spacing of 90 x 15 cm and 45 x 10 cm, respectively. In the intercropping system, redgram was sown at 135x10 cm and bajra at 45x6.25 cm to facilitate full plant stand. Fertilizer applications were made as per standard recommendations.

Table 2 LER and net monetary returns in the intercropping trial (Mean of 1986 and 1987)

Treatments	LER (grain)	LER (stalk/straw)	Net monetary returns (Rs/ha)
T1 Sole redgram (Aug)	1.00	1.00	857
T2 Sole bajra	1.00	1.00	2341
T3 Simul. int. crop.	1.29	1.40	1641
T4 Sole redgram (June)	1.00	1.00	3728
T5 Stag. int. crop.	0.93	1.29	2481
CD (5%)	0.06	0.15	337

Rates (per kg) Redgram Rs. 5.00, Bajra Rs. 1.50

June sown sole crop. Consequently higher grain and stalk yield and harvest index were recorded in this treatment compared to August sown intercrop. However, the yields were significantly lower than that of sole redgram sown in June. Staggered bajra recorded significantly very low grain and straw yields compared to simultaneous intercrop of bajra (Table 1). The differences in the yield components were not significant between the two types of intercropping system. A delay of 60 days in sowing of bajra in between the redgram rows caused much competition for the crop for moisture and nutrients leading to low yields. Though staggered intercropping system recorded lower LER values, the net monetary returns were significantly higher than that of simultaneous intercropping system (Table 2). The net monetary returns from the staggered intercropping system were significantly higher than those obtained from sole bajra also.

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