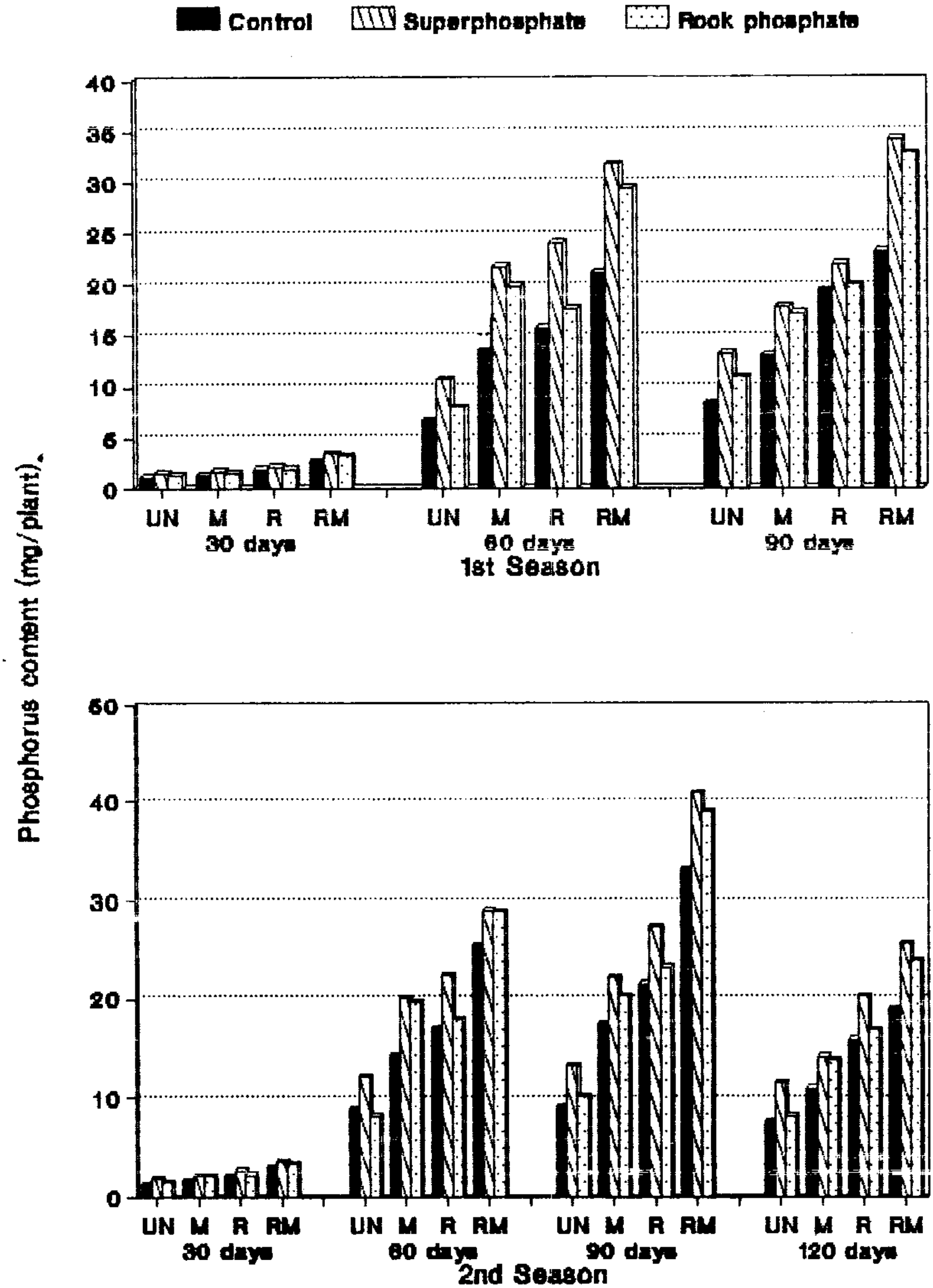

Fig (6): Effect of bio- and phosphatic fertilization on total phosphorus content of peanut shoots (mg/plant).

treatments. Combining the inoculation with G. macrocarpum and rock phosphate application significantly increased the phosphorus content of peanut shoots similary as superphosphate application, which indicates that mycorrhizal plants can utilize phosphorus from rock phosphate as reported by Daft and Nicolsen (1969); Powell and Dainel, (1978) and Attia (1987). It has been established that VA mycorrhizae mobilize phosphorus, but greatly increase its utilization from soils (Mosse et al., 1976). The interconnected network of external hyphae acts as an additional catchment and absorping surface in the soil beyond the depletion zone (Gerdemann, 1968) and serve as an auxiliary absorption system which operates in low nutrient regions (Nicolsen, 1967). Mycorrhizal inoculation also increased the effeciency of superphosphate fertilizer since the, phosphorus content of superphosphate mycorrhizal plants was significantly higher than that of plants only treated with superphosphate.

These results confirm that mycorrhizal plants take up more phosphate than nonmycorrhizal ones, and this is translocated to the shoots.

II.6. Effect of bio_ and phosphatic fertilization on total nitrogen content of peanut shoots:

For legumes plants, the nodulation is oftenly considered as the main source of nitrogen. In this respect, mycorrhizal fungi inocula play a significant role for increasing the number of nodules which in turn increase the total activities of nitrogen fixation process which satisfy plant nitrogen requirments.

Data in Table (10) and illustrated by Fig. (7) present the values of nitrogen as affected by bio_ and phosphatic fertilization. These results show that inoculation with Rhizobium significantly increased the total nitrogen content of peanut shoots as compared with uninoculated plants. The inoculation with G.macrocarpum also showed a significant effect on total nitrogen content, but this effects was lower than that due to Rhizobium. However, the effect of dual inoculation with both Rhizobium and G. macrocarpum was more pronounced than that of Rhizobium alone. Such results may suggest that mycorrhizal fungi cause an increase in plant phosphorus content, which in turn enhance the nitrogen fixation process. These result agree with the results of Daft and el_Giahmi (1976), Carling *et al.* (1978), Islam *et al.* (1980) and Attia (1987). These results may confirm the

Table (10): Effect of bio_ and Phosphatic fertilization on total nitrogen content of peanut shoots (mg/plant):

Biofertilization treatments	Growth Period	Phosphatic sources					
		1st season			2nd season		
		Control	SuperP	RockP	Control	SuperP	RockP
Uninoculated	30 days	18.1Aa	27.2Ba	20.7Aa	18.8Aa	29.4Ba	22.9Aa
G. macrocarpum		30.0Ab	36.8Bb	34.8Bb	31.6Ab	44.4Bb	40.8Bb
Rhizobium		38.7Ac	46.5Bc	40.5Ac	48.4Ac	64.1Bc	53.8Ac
Rhizobium + *G. macrocarpum*		48.8Ad	66.6Bd	62.8Bd	59.0Ad	75.4Bd	72.7Bd
Uninoculated	60 days	149.9Aa	257.2Ba	185.5Aa	223.1Ba	291.1Ba	248.6Aa
G. macrocarpum		299.9Ab	375.5Bd	345.6Bb	300.8Ab	406.3Ba	381.8Bb
Rhizobium		420.1Ac	520.1Bc	450.1Bc	439.0Ac	591.7Bc	469.0Ac
Rhizobium + *G. macrocarpum*		524.7Ad	719.3Bd	691.4Bd	506.5Ad	650.1Bd	647.7Bd
Uninoculated	90 days	150.9Aa	213.1Ba	169.7Aa	186.9Aa	230.6Ba	187.Aa
G. macrocarpum		245.0Ab	295.1Bb	280.7Bb	230.9Ab	290.7Bb	276.6Bb
Rhizobium		300.6Ac	379.9Bc	320.5Ac	311.3Ac	422.3Bc	346.8Ac
Rhizobium + *G. macrocarpum*		409.6Ad	516.7Bd	495.8Bd	354.2Ad	464.0Bd	421.0Bd
Uninoculated	150 days				120.9Aa	183.9Ba	143.6Aa
G. macrocarpum					160.5Ab	227.1Bb	200.8Bb
Rhizobium					210.8Ac	287.0Bc	241.0Ac
Rhizobium + *G. macrocarpum*					256.0Ad	331.4Bd	301.0Bd