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Effect of Irrigation, Weed Management and Phosphorus on Yield of Summer Green Gram [*Vigna radiata* (L.)]

L. K. Arvadiya, C. L. Patel and M. K. Arvadiya

Department of Agronomy, N. M. College of Agriculture, Gujarat Agricultural University, Navsari, Gujarat-396 450

Field experiment was conducted during the summer season of 1992 at Navsari to study the response of K-851 summer green gram (*Vigna radiata* (L)) to irrigation, weed management and phosphorus. The soil was clayey (PH 7.6), containing total N 0.049%, available phosphorus 10.30 kg P/ha and potassuim 220 kg k/ha. The field capacity, permanent wilting point and bulk density in 0-30 cm soil depth were 32.60 and 18.20 % and 1.38 g/cc, respectively. The treatments comprised three IW:CPE ratios (0.3, 0.5 and 0.7 i.e. 3, 4 and 5 irrigation including two common irrigation of 70 mm ation depth, three weed control treatment weeded control, hand weeding at 20 + 40 days after sowin and pre-emergence applicati of pend lin 1.0 lit/ha) and pl norus levels (0, 15 and 30 kg p/ha) were tried in a 3^3 partial confounded randomized block design with two replications. Full dose of N as urea and phosphorus as per treatments in form of single superphosphate were applied at the time of sowing. Well water of good quality was used for irrigation and was measured with 75 mm Parshall flume installed in channel in the experimental field.

Different irrigation treatment have pronounced effect on growth and yield of summer green gram. Though IW/CPE ratio of 0.7 gave higher value, statistically it did not differ with IW/CPE ratio 0.5. The yield increased were to the tune of 26.5 and 21.8 per cent with IW/CPE ratio of 0.7 and 0.5 than IW/CPE ratio of 0.3. This finding is in accordance with that of Patel *et al.* (1988). The water use efficiency decreased with higher IW:CPE ratios as frequent irrigation applied under these treatments increased moisture loss due to evapotranspiration in summer season.

Weed control treatments had favourable effect on yield attributing characters and mannual weeding (twice) recorded the highest value but was at par with pendimethalin @ 1.0 lit/ha. The per cent increase in grain yield with hand weeding (Twice) and pendimethalin over weedy check was 27.4 and 24.1 per cent, respectively. This finding is in agreement with that of Gupta *et al.* (1990). Hand weeding (twice) gave the highest