

ABSTRACT

2 cultivars of the common bean were planted in 20 litre buckets filled with forest soil. 3 plants were maintained per bucket and the buckets spaced at 10 x 30 cm to approximate field spacing. The field capacity (FC) was pre-determined and 3 watering treatments were used: FC, 0.5FC and 0.25FC, at the end of the experiment these were equivalent to 600, 300 and 150 mm of water, respectively. Dry weights of leaf, stem, root, pod wall and seed, and leaf areas were recorded at 10-day intervals from emergence. The roots were recovered by hand separation and sieving. It was found that leaf area reached a maximum at 40-50 days after emergence. As the water applied was reduced, leaf area development was also reduced. There was a preferential distribution of dry matter to the roots as watering was decreased, both before and after flowering. Root weight and leaf area decreased after flowering. A major source of assimilates to the developing seed appeared to be those re-translocated from the leaves, root, stem and pod wall. The cultivars were not significantly different in their response to the watering treatments