



University of Zabol  
Department of Agronomy

**Thesis Submitted in Partial Fulfillment of the Requirement  
for the degree of Master of Science (M. Sc) in Agronomy**

**Effect of millet (*Panicum miliaceum L.*)  
and cowpea (*Vigna unguiculata L.*)  
intercropping on grain yield and weed  
control.**

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## **Effect of millet (*Panicum miliaceum L.*) and cowpea (*Vigna unguiculata L.*) intercropping on grain yield and weed control**

### **Abstract**

In order to study intercropping of millet and cowpea under the effect of different ratio of cropping in mixture and to evaluate its effect on the function of these two plants and also to weed control, Experiment design was R, C.B. D. with 6 treatment and 3 replication at research farm of college of agriculture, university of zabol, zahak. In 1388 cropping. Experiment treatments were contain of 6 different ratio of cropping in which additive design have been used: B<sub>1</sub>: sole cropping of millet B<sub>2</sub> : sole cropping of cowpea B<sub>3</sub> : 100 % cowpea + 75 % millet B<sub>4</sub> : 100 % cowpea + 50 % millet B<sub>5</sub> : 100 % cowpea + 50 % millet B<sub>6</sub> : 100 % cowpea + 100 % millet. The characteristics which were investigated in this search were: Morphological features and yield components for both millet and cowpea kind, number of panicle, number of grain in panicle, and weight of thousand grain, height of plant, number of active and inactive tillers, length to corymb, number of leaves of millet and cowpea, number of pod in bush, number of grain in each pod, weight of hundred grain, height of plant, number of leaves in bush, HI and evaluation of intercroppings profits by the use of index of land equivalent ratio and also effect of intercropping on weeds control and also, the amounts of absorption of photosynthetically active radiation have been. The obtained results showed that different ratio of cropping was effective in the yield of cowpea and millet and also in the weight of grain these two kinds, and also the weight of both. The highest yield of grain of both millet and cowpea achieved from their sole cropping. The amount of LER in all mixed treatments was higher than one, that shows the superiority of intercropping in contrast with the solecropping. The highest PAR also obtained from 100% cowpea + 100% millet. In regarding to the control and management of weeds, different farms of intercropping showed their superiority to the solecropping of two plants. The lowest temperature and containing of soils moisture was achieved from the treatment of from 100% cowpea + 100% millet.

Keywords: Advantage of Intercropping, Millet, Cowpea, Weeds, LER, PAR