**Effects of Weeds and Different Weed Control Methods on Growth and Yield of Common Beans (*Phaseolus vulgaris)***

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**(A100/11485/2015)**

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**April, 2019**

## Abstract

Weeds infestation is a widespread problem affecting common beans production in a large number of arable land in Kenya. The increased population of weeds is due to poor management practices and lack of adequate information and knowledge on the preferred control methods. Weeds compete with beans for the available resources favoring the germination and the reproduction of the crops. (light, water , nutrients and space). This competition leads to low or no yields. Although weeding is recommended to achieve optimum yields, this lack of awareness to farmers on usage of herbicides, their optimal rates, high costs and also quality of the available herbicides are the limiting factors. Therefore, researchers should disseminate the information on the effectiveness of using herbicides and also cultural methods at large. This study was aimed at studying the effects of weeds on growth and yield of common beans. Evaluation on how the growth and yield of common beans was influenced by competition from annual mixed weed and different weed treatments was done. The experiment had four treatments. In the first treatment no weeding was not done at all throughout the whole season of the growth of the bean. The second treatment involved keeping the bean plants weed free throughout the growing season. In the third treatment, the bean plants were kept weed free the first four weeks after planting and then thereafter no weeding was done. The last treatment was keeping the bean plants weed free the first eight weeks after planting then thereafter no weeding was done. A randomized complete block design with three replications was used. Statistically significant variation was recorded in all characters as weeding was done at different times in all the treatments. The data collected included plant height, spread of the plant, number of pods per plant, size of the leaves and the plant chlorophyll content and weed biomass. Also growth and vigour of weeds was put into consideration, that is, if the weeds are growing well and vigorously it means that it is suppressing the plants. The plots that were weeded for the first 8 weeks (T4) performed better than the plots weeded throughout (T2) because the weeding frequencies vary. (T4) was weeded once weekly and (T2) twice weekly which attributed to root disturbance thus interrupting uptake of nutrients. The control had few number of pods and the small ones being the majority of all. Despite that weeding throughout gives the best performance due to uptake of nutrients and absorbing light, T4 (weeding for the first 8 weeks) had a high number of leaves and the tallest plants than T2 (weeding throughout). This is because the frequency of weeding was varying. T4 was weeded once a week and T2 twice a week contributing to root disturbance therefore causing leaching of nutrients and also making the roots unstable for nutrients uptake, thus few nutrients were available for the plants in T2. The data shows that if weeding is done early the cultivar was able to accumulate more dry matter. Weed biomass was high in control and in plots weeded for the first 4 weeks and the highest plant biomass was experienced in plots weeded for the first 8 weeks then followed by plots weeded throughout.