

## QUALITY OF THREE DRY BEAN VARIETIES AS INFLUENCED BY PLANT DENSITIES IN THE HIGHLANDS OF ABERDARE RANGES

**P. M. Gichuki and J. N. Kahinga**

*Department of Agriculture and Natural Resources, Faculty of Science, Kenya Methodist University*

**Email:** *phillipmwangi8@gmail.com*

### **Abstract**

Several studies have shown that beans are the leading source of protein and are an important source of calories for many of the poorest families in Kenya. Two dry bean cultivars (*Chelelang* and *Ciankui*) have been reported to be suitable for growing under conditions prevalent in the area around Ndaragwa in highland of Aberdare Ranges. Unreliability of potato cultivation for food and as a source of income in this area compelled farmers to venture into commercial dry bean production. The purpose of this study was to compare qualities of three dry beans (*Chelelang*, *Ciakui* and *Mwitemania*) varieties as influenced by plant densities in the highland of Aberdare Ranges and recommend the best performer(s) to the farmers for commercial production. The objectives of the study were; to compare growth, yields and seed quality of three dry bean cultivars; *Mwitemania*, *Chelelang* and *Ciankui*, to determine the effect of different plant densities on growth, yields and seed quality of the three dry bean cultivars when grown under varying conditions and to determine the effect of plant densities on pest attack of the three dry bean varieties. The following growth parameters were recorded; growth vigor in each variety, the number of pods per plant, pods length, plant resistance to aphids attack, height of plants and above the ground biomass as well as yields. Each plot layout measured 4x4 m. There were 9 plots in each of the 3 blocks. A path of about 1m was left between blocks. Each plot received treatment combinations assigned randomly. Using Randomized Complete Block Design (RCBD) the experiment was replicated three times. Plant densities were; 1 seed / hill, 2 seeds / hill and 3 seeds/ hill. All the trials received similar treatments. Data was collected, organized, and analyzed by use of SPSS (Version 22) and the means separated by use of Least Significant Difference (LSD). Results indicated that there were significant differences in all the three varieties in the mean number of pods, pod length, plant height, Plant resistance to aphids attack and above the ground biomass as well as yield and harvest index. *Ciankui* and *Chelelang* were found to be suitable for the study area. It is hoped that small scale farmers in Nyandarua will adopt growing of *Ciankui* and *Chelelang* and use the corresponding production activities so that they can realize high yield. The main objective of the experiment was finally achieved.

**Key words:** bean varieties, Aberdare ranges, plant densities