# Cowpea Sequential Leaf Harvesting for Enhanced Food and Nutritional Security

Anastacia A. O. Masinde[1, 2*], Prof Elizabeth N. Omami[2] and Dr. Nicolas K. Rop[2]
[1]KALRO FCRI, Kitale-Kenya.
* Correspondence: E-mail: anastaciamasinde@yahoo.co.uk
annastancia.ogutu@kalro.org
P.O. Box 450-30200 Kitale-Kenya

[2] University of Eldoret
Department of seed, crops & horticultural science
School of Agriculture and Biotechnology
P.O. Box 1125 Eldoret, Kenya.
elizabethomami@yahoo.com
ropkn2000@yahoo.com

## Abstract
Inadequate food and Micro-nutrient deficienciesare a big problem in Kenya, cowpea leaves are a cheap source mineral, protein and energy. Harvesting sequence is a yield determinant factor, however, the nutritive value of the harvested leaves varies with the stage at harvest. Six cowpea cultivars were tested against 4 harvesting sequences to assess the effect on cumulative leaf yield and nutritive value. Aiming at determining innovative harvesting sequence that increase leaf yield that are nutritious and sustainable. A 6 x 4 factorial arrangement laid in RCBD experiment was carried out at KALRO-Kitale (UM4) in Trans Nzoia County for two seasons. Six Cowpea cultivars K80, M66, KVU27-1, Tumaini, Makonge and local black cowpea were subjected to four harvesting sequences namely seven days, 14 days, 21 days' interval and uprooting at onset of harvesting. Samples were collected for analysis from the seventh harvest after the where the 3 harvesting were tallying. Result showed significant difference on cumulative yield across both the cultivar and the harvesting sequences.KVU 27-1 at seven days' interval gave highest cumulative yield (6.96 tons/ha), however Tumaini and Makonge gave their highest cumulative yield in the 14 days' interval sequence. Proximate analysis results showed significant differences across harvesting sequences. K80 at 7 days and local black at 14 days' interval had the highest crude protein content (30.81% &31.12% respectively). Ash minerals ranged from 3.01% - 3.95% at 7 days and 21 days' interval respectively. Crude fiber was high at 7 days' interval and low at 21 days' interval for all the varieties, ranging from (16% - 11%). Dry matter content was high for sequence 21 days' interval and low for 7 days' interval. Therefore, the innovation of sequential harvesting promotion will enhance increased yields forfood security and micronutrients for improved health.

*Keywords: Cowpea Cultivars, Harvesting Sequence, Cumulative Yield, Food and Nutritional Security*