Effect of chicken manure on leaf yields of selected African leafy vegetables in western Kenya

C. Ndinya*[1], N. Makete[1], E. Minyatta[1], M. Odendo[1], F. Wayua[1], L.Okitoi[1], P. Mudy[2], S. Kweyu[3]

[1]Kenya Agricultural and Livestock Research Organization, P.O. Box 169-50100, Kakamega, Kenya
[2]Anglican Development Services- Western Kenya
[3]AGRO-Kenya

*Corresponding Author: Christine Ndinya (christine.omboko@kalro.org, christinendinya@gmail.com)

Abstract
African leafy vegetables (ALVs) are important in western Kenya for food security and income. They require sufficient fertilizer for good yields. However inorganic fertilizers are rarely used for ALVs production because of high costs. Chicken manure can be an alternative cheap source of fertilizer because 90% of households keep chicken. A study was done in Busia, Vihiga and Kakamega Counties in western Kenya among five farmer groups per county, to determine the performance of ALVs when planted with manure. Each group collected chicken manure and planted two sets of trials of spiderplant (*Cleome gynandra*), amaranth (*Amaranthus spp*.), African nightshade (*Solanum spp*.), cowpea (Vigna unguiculata) and slenderleaf (*Crotolaria brevidense*); one set with and the second set without chicken manure. Manure samples collected from farmers were tested for nutrient contents and disease. Data were taken on fresh and dry weight of harvested leaves. Results on disease analysis showed that samples did not have *Ralstonia solanaceaurum* bacteria, or parasitic nematodes. However non parasitic nematodes and *Fusarium spp*. fungus were present in 63 and 44 percent of the samples respectively. Leaf yields in plots with chicken manure were significantly ($P<0.05$) higher than those without manure in spider plant, Amaranth and African nightshade, but not in slenderleaf and cowpea. The lack of difference in the latter could be due to the nitrogen fixing ability of these species. This study shows that locally available chicken manure can be a good inorganic fertilizer alternative for use in spiderplant, Amaranth and African nightshade in western Kenya.

Keywords: Nutrients, Vegetables, Fertilizers