African Leafy Vegetables (ALVs) are the cheapest and most readily available sources of important proteins, vitamins, minerals and essential amino acids in Ghana. This study was conducted to determine the nutritional values of the leaves of cocoyam (Kontomire) (Xanthosoma sagittifolia), water leaf "(Bokoboko)" (Talinum triangulare), "(Aleefu)" (Amaranth cruentus) and Moringa oleifera. Samples of the green leafy vegetables were obtained from the Centre for Biodiversity Utilization and Development (CBUD) farm at Prison Camp at Amanfrom in the Ashanti Region. The parameters determined were moisture, crude fiber, crude fat, protein, total carbohydrate, food energy and minerals (iron and phosphorus). The results showed they all had high moisture content ranging from 72.93 to 91.83% with Talinum sp. showing the highest percentage of moisture. The other characteristics like crude fiber ranged from 1.00% to 10.40%, fat 1.33% to 3.19%, protein 4.46% to 6.60%, carbohydrate 1.05% to 13.50%, food energy 36.60Kcal/100g to 90.20Kcal/100g, iron 1.00mg/100g to 40.50mg/100g and phosphorus 74mg/100g to 81.90mg/100g. The results showed that no particular green leafy vegetable was superior to the others. It is therefore important to use any of the different varieties of leafy vegetables for food. It is recommended that similar investigations should be carried out on other indigenous leafy vegetables such as cowpea, baobab, kapok and cassava leaves