

Water hyacinth *Eichhornia crassipes*, can be used in agriculture as compost and mulch for food production. The purpose of this research study was to investigate the suitability of water hyacinth compost in edible mushroom production and track whether heavy metals are transferred into the mushrooms. The study assessed levels of nutrients (Nitrogen and Phosphorus) and some heavy metals: Zinc, Iron, Manganese, Copper, Cadmium and Lead in dam water, water hyacinth compost and determined food safety risks that were anticipated in the mushrooms grown using the compost. Water hyacinth was harvested from Nairobi Dam, cut into small pieces, dried for two weeks and allowed to compost for a month. The compost was sterilized for six hours at 60°C, cooled and packed into sterilized plastic bags. Spawning of the compost was done in a room that was free from contaminants. The spawned bags were then incubated in a darkroom at room temperature. It took 6 weeks for the mushrooms to be ready. The experiment was set up at same conditions as existing method of mushroom growing. In the laboratory samples from water hyacinth and wheat straw composts and mushrooms were dried, ground and analyzed for nutrients (P and N). Heavy metals (Zn, Fe, Mn, Cu, Cd, Pb) were determined by Atomic Absorption Spectrophotometer. The data obtained was subjected to analysis of variance (ANOVA). The results indicated that the overall mean levels of Zinc, Iron, Manganese, Phosphorus and Nitrogen were: 0.181, 1.431, 0.465, 1.38% and 29.2% respectively for mushrooms grown using water hyacinth compost. Mean levels for Zn, Fe, Mn, P and N were 0.123, 1.226, 0.58, 1.79% and 26.67% respectively for mushroom from wheat straw compost (control). Cadmium, Copper and Lead were below detection limit. The results showed that most of the heavy metals; Zn, Fe, and Mn in mushrooms were in concentrations below the World Health Organization guideline values and hence mushrooms grown using water hyacinth compost are fit for human consumption according to the experimental findings. Iron and Manganese were present in composts in concentrations mostly above the WHO guideline values. Therefore, it is concluded that, with respect to WHO maximum admissible concentration in foods, composts had high Iron and Manganese concentrations but mushrooms grown using the same composts had acceptable levels.