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Abstract	:	Application of sewage sludge as fertilizer can be beneficial for sustainable agriculture as it could largely account for nitrogen and phosphorus demand for crops and has lower costs compared to other disposal routes, e.g., incineration, and sanitary landfills. This study evaluates the feasibility of pilot-scale pelletization of sewage sludge for non-food crops (e.g., ornamental plants). The co-pelletization method was designed by mixing sewage sludge and binder (tapioca starch) at a 9:1 sludge-to-starch weight ratio. The amount of nitrogen (N), phosphorus (P), and potassium (K) of the resultant pellets were determined at 5.7%, 4.9%, and 0.2%, respectively. Following Malaysian and US Standards, non-essential elements and pathogenicity of the pelletized sewage sludge were measured below the predetermined limits and hence safe for agricultural application. The planting trial using 50% inorganic fertilizer + 50% sewage sludge pellets exhibited a promising result on the growth of the flowering plant <i>Celosia plumosa</i>, with having better dimension and color, 20% higher in height, 4% more chlorophyll content, 54% more leaf, 43% greater stem growth, and 27% more flowers compared to control. Likewise, the planting trial on <i>Tagetes erecta</i> resulted in 10.5% wider leaf, 10.6% heavier leaf dry weight, and 12.5% more chlorophyll content compared to control with full usage of inorganic fertilizer. By considering liquidities to operate the production facility, the economic analysis estimated that the production cost per ton of pelletized sewage sludge produced was USD 0.98.