This study was conducted at the Food technology Department of Capiz State University, Mambusao Satellite College, Mambusao, Capiz from April 2023 to June 2023 to develop and evaluate the acceptability of meat loaf as affected by varying levels of sweetpotato. Specifically, to determine its acceptability in terms of color, aroma, taste, flavor, texture and general acceptability; evaluate the physico-chemical characteristics of meat loaf as affected by varying levels of sweetpotato; determine the colorimetric properties of meat loaf as affected by varying levels of sweetpotato; assess consumer acceptability of the formulated product; and determine the production cost of meat loaf as affected by varying levels of sweetpotato. This study was composed of six treatments with varying levels of sweetpotato and arranged on Complete Block Design and was triplicated. Thirty students of food Technology Department at Capiz State University, Mambusao Satellite College served as the evaluation panelists. A 9-point Hedonic Scale was used in measuring the sensory acceptability of the product. The meat loaf was acceptable in all sensory attributes in terms of color, aroma, taste, flavor, texture and general acceptability. Analysis of Variance further revealed a highly significant difference among treatments means ANOVA using F-test was interpreted at both 5% and 1% level of significance. Total soluble solids, pH content l, a, b, yellowness index and browning index of meat loaf was not significantly affected by the levels of sweetpotato added. Consumer test revealed that meat loaf was like by 84% of the consumer and dislike by 16% consumer. Cost of production showed that meat loaf without sweetpotato got the highest cost of production of P120.50 and meat loaf composed of 50% sweetpotato got the lowest production cost of P95.50.