This investigation reports the tolerance and biodegradation of benzene, toluene, ethylbenzene and xylene isomers (BTEX) by a heavy metal-adapted environmental bacterial consortium, known as consortium culture (CC). Higher tolerance was observed with benzene (IC50 value up to 191.25 mg/L), followed by toluene (IC50 = 139.67 mg/L), xylene (IC50 = 97.04 mg/L) and ethylbenzene (IC50 = 96.99 mg/L). Significant decrease (p < 0.05) in the specific growth rate (μ) however was observed as the concentrations of each individual BTEX were increased from 10 mg/L to 500 mg/L. Growth of CC was completely inhibited at 250 mg/L ethylbenzene and 500 mg/L xylene. Toxicity followed the trend: B<T<X<E. Biodegradation of individual BTEX compound was monitored by gas chromatography. The GC-FID chromatographic profiles showed the capability of CC to significantly biodegrade (p < 0.05) benzene (61.66 %), toluene (55.91 %), ethylbenzene (37.15 %), p-xylene (43.66 %), m-xylene (47.86 %) and o-xylene (41.03 %) at an initial concentration of 50 mg/L after 48 hours. These findings confirm the ability of CC to withstand biodegrade and utilize BTEX as the sole source of carbon and energy in the following order: B>T>X>E.