The textile industrial wastewater often contains residual azo dyes that have serious risk to human health as well as the plant and soil microorganisms.The most effective five bacteria namely, B. brevis, B. coagulans, L. macrolides, L. fusiformis and B. subtilis, were subjected to study the effect of some nutritional factors including glucose concentration, organic nitrogen source supplementation and microelements solution concentration on the decolorization capacity, biomass, lignin peroxidase, laccases and azoreductases production in Mineral Salt Medium (MSM) supplemented with either direct violet or methyl red azo dyes as sole carbon sources.This study aims at isolation and identification of multi azo dyes–degrading bacteria and optimization of the involved in the bioremediation of dye residues.This study suggests the use of B. coagulans and L. macrolides in the biodegradation of azo dyes, where it showed the highest decolorization percentages for a large number of azo dyes, as well as the highest enzymes production among the tested bacteria.Twelve azo dyes–decolorizing bacterial isolates were isolated from soil, water and wastewater samples.Capacity of these bacteria to decolorize twenty azo dyes was investigated.