An anaerobic-aerobic sequencing batch reactor with a sludge age of 8 days and anaerobic + aerobic + settling times of 18 + 5 + 1 h, was used to decolorize an azo-reactive dye wastewater. The nutrient broth (NB) and sodium acetate (SA) solution at 500 + 0, 350 + 150, 250 + 250 and 0 + 500 mg/1 as COD was fed to the system to promote the polyphosphate-accumulating organisms (PAOs), while only glucose (500 mg/1 COD) was used as a glycogen-accumulating organisms (GAOs) promoting substrate. The decolorization capability of the process was about 73-77 and 59-64% in terms of ADMI for the systems which the PAOs and GAOs proliferated, respectively. The color reduction was mainly achieved within the first 2 h of the anaerobic stage.