



Research article

## Microbial and physicochemical evaluations of paracetamol in different brands of analgesic syrups sold in Bangladesh

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### Abstract

Different brand of paracetamol syrups are widely used in Bangladesh, especially for pediatric and aged patients. The therapeutic efficacy of pharmaceutical products depends on both microbial and physicochemical qualities of the products. However, liquid dosage forms especially syrups contain high percentage of sucrose that are more susceptible for microbial growth. This investigation was done to evaluate the microbial and physicochemical qualities of two hundred fifty samples of different brands of paracetamol syrups sold in Bangladesh. These brands were investigated according to the in-vitro compendial requirements, which include organoleptic properties such as color and taste, total viable aerobic count, type of isolated microorganisms, physical properties and content of active ingredients. These tests were performed by standard methods and techniques. The investigated five brands of paracetamol syrups were passed the standards of the USP regarding microbial specifications. The physicochemical qualities such as organoleptic test results had red and pink clear liquid with sweet taste in some analgesic syrups but remaining samples are bitter taste that not suitable for pediatric patients. The pH values were ranged from 4.44-5.88. However, the density fluctuated from 1.149-1.184 g/mL. The paracetamol concentration as an active ingredient in the paracetamol syrup was recorded from 94.1% – 103.5%. These findings explained that the five different brands of paracetamol syrups sold in Bangladesh are comply with Pharmacopoeia specifications regarding microbial and physicochemical characteristics but for better patient acceptability especially for pediatric patients the taste of some paracetamol syrups should be improved.

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