

## **Effectiveness of additives in spray drying performance: a review**

### **ABSTRACT**

The systemic review covers the efficiency of additives on spray dried product; process parameter and its physicochemical properties. Due to the demand of diversification of food products, conventional spray drying process has gained momentum in drying process and extensively used to preserve food materials in powder form. Regarded as a complex operation, the balance between optimization of spray drying process parameters and physiochemical of its product has proven to be a challenge, especially in low product yield due to low transition temperature of feed material. This paper envelope the usage of additives as carriers in spray drying processes, and its effects on physicochemical properties such as hygroscopicity, flavour retention, and colour indexing. The literature signified the vital role of additives in enhancing the physiochemical of feed material and highlighted the effect of additives on spray drying efficiency in respect to its process parameters. Studies advances have shown that additives have improved significantly on products feed characteristic; lower moisture content, higher process yield, and powder flowability. Further research has shown a combination of additives enhances certain properties of feed material. The study signified the effect of additives as a vital role in improving the physicochemical properties of spray-dried powder. The difficulties of achieving powder specification demands can be resolved, by understanding and utilize the knowledge of additives on processing parameter of spray drying.

**Keyword:** Spray drying; Additives; Powder quality; Process parameter