

Modifikasi Berbagai Jenis Pati dengan Level Kadar Air Berbeda
Menggunakan Teknologi *Dielectric Barrier Discharge* (DBD) – Cold Plasma
Modification of Various Types of Starch with Different Moisture Levels Using
Dielectric Barrier Discharge – Cold Plasma Technology
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ABSTRACT

Starch as a natural polysaccharide, is widely utilized in both food and non-food industries. However, certain suboptimal properties of starch can limit its industrial applications. The physicochemical and functional properties of starch can be improved through physical, chemical, or enzymatic modifications. Physical modification of starch has garnered more attention due to its several advantages over other modification methods. DBD (Dielectric Barrier Discharge) – cold plasma is one of the non-thermal physical methods capable of producing modified starch with superior characteristics compared to native starch. This study modifies starch from various sources (cassava starch, corn starch, and sago starch) at different moisture levels (15%, 20%, and 25%). The objective of this research is to investigate the effect of DBD – cold plasma on the chemical and functional properties of various types of starch conditioned at different moisture levels. The study employs a Randomized Block Design with two factors: starch type and moisture level. The results indicate that the type of starch and moisture conditioning during modification using DBD – cold plasma technology lead to variations in chemical properties, hydration properties, gelatinization properties, and FTIR spectral intensities of the starch. The differences in characteristics of the DBD – cold plasma-modified starch can be attributed to internal factors of the starch as well as variations in the cold plasma mechanisms involved in producing the modified starch. The best treatment based on starch type shows that cassava starch produces the most favorable characteristics, while for the moisture content factor, starch conditioned with an initial moisture level of 25% yields the most optimal results.

Keywords : *Cold Plasma, Dielectric Barrier Discharge, Moisture Content, Starch Type*