

## **Plant polyphenols as natural compounds to modulate muscle food quality attributes**

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Polyphenol-rich herbs and spices are common food ingredients added in fish and meat processing to modify product flavor and appearance. When extracted plant phenolic compounds are mixed into minced muscle or proteins, their roles are beyond flavor and scavenging free radicals; they are found to modify product texture through the interaction with myosin or actomyosin. The ability of polyphenols to modulate gelation and emulsification of muscle protein, especially under oxidative conditions, explains their dose-dependent role in affecting the textural attributes of processed fish, poultry, and red meat products. In-depth studies have shown that phenolic compounds modify muscle proteins in a structure-dependent manner. For example, the variation in hydroxyl group distribution in flavonoid B-ring between mono-, di-, and tri-phenol compounds is an important factor affecting phenolic efficacy. The texture-modifying activity of plant phenolic compounds in muscle foods underscores their multi-functionality nature in fish and meat products.