

# The reutilization technology of chicken by-products <sup>(1)</sup>

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## Abstract

The purpose of this study was to investigate the reutilization technology of chicken by-product in two parts: feathers and other by-products. Commonly used feather reutilization technologies include hydrolysis technology, composites technology, pyrolysis technology and chemical modification technology. The hydrolysis technology can decompose feather protein into biological nutrients or as raw materials for other products. The composite material technology combines feathers with other materials to change the property of the material, including the physical, thermal insulator and fiber properties. The pyrolysis technology is the thermochemical conversion of feathers into synthesis gas, bio-oil and bio-carbon (feather carbon). Feather carbon can be applied to the adsorption of pollution and electrochemical materials. The chemical modification technology uses chemical substances to change the structure or functional groups of feather proteins, thereby changing the absorptive, electrochemical, or solubility properties. With regard to the research and application of other by-products, high-temperature and high-pressure processing technology can process a large amount of by-products and then can be applied to feed materials. Enzyme hydrolysis technology can retain more nutrients or functional substances, and hence adding value and more applicability in these products. In terms of extraction and purification research, there are abundant sources of literature on collagen extraction, , which can be adopted by researchers and industry practitioners. Moreover, chondroitin sulfate and hyaluronic acid extraction, bio-oil production and meat processing technologies add more diversity to the potential value of by-products. In the future, we should properly adopt the various reutilization technologies to improve the reutilization rate of chicken by-products and increase the added-value of products, thereby to prolong the sustainable development in the ecological environment and industrial operations.

Key words: Chicken, Feather, By-product, Reutilization.

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