

A Review of the Uses of Poultry Eggshells and Shell Membranes

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Abstract :

This study was conducted to find out the multiple uses of eggshells in nutrition and medicine. Eggshells can be utilized for various purposes that minimize their effect on environmental pollution. Eggshells present healthy, balanced calcium due to its trace amounts of other minerals and is probably the best natural source of calcium. One whole medium sized eggshell makes about one teaspoon of powder, which yields about 750-800 mgs of elemental calcium plus other micro elements. Eggshell powder has been reported to increase bone mineral density in people and animals with osteoporosis. In laying hens in the late production phase, eggshell powder has been found to increase egg production and improve the quality of shells. Discarded eggshells are often used as a plant fertilizer and are effective liming sources. This is because eggshells contain calcium that raises, or neutralizes, the pH level of overly acidic soil. Chicken eggshells can be used as an alternative soil stabilizer like lime since they have the same chemical composition. Such stabilized soil can be used as subgrade materials in road construction works. Eggshell membrane consists of collagen as a component. Collagen is a type of protein, fibrous in nature that connects and supports other bodily tissues, such as skin, bone, tendons, muscles and cartilage. Collagen has been isolated mainly from bovine and swine skins and bones. Collagen used in medicine, biochemical, pharmaceutical, food and cosmetics industries. After the outbreaks of bovine spongiform encephalopathy, foot and mouth disease, autoimmune and allergic reactions, restrictions on collagen uses from these sources were enforced. Eggshell membrane collagen is very low in autoimmune and allergic reactions as well as high in bio-safety and is of similar characteristics to other mammalian collagen. Eggshells/shell membranes have multiple uses in nutrition, medicine, construction and art works.

Key Word :

Poultry eggshells, shell membranes, collagen, gelatin, calcium carbonate, soil stabilization

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