

十一、研究計畫中英文摘要：請就本研究計畫要點作一概述，並依本研究計畫性質自訂關鍵詞。

(二) 計畫英文摘要。(5 百字以內)

Silver ear (*Tremella fuciformis*) has been used for food and food supplements historically in the Chinese and Taiwanese populations. People recognized that consuming silver ear can improve their health. In 2008, the consumption of *Tremella fuciformis* was 300 tons in Taiwan, however, the insecticides and sulphur dioxide were detected from silver ear which was imported from China in 2009. The other problems were also arisen from the imported mushrooms including the cultivated substrate (cotton seed shell) of silver ear contained toxic gossypol and transgenic gene. Therefore, it is an urgent matter to produce safe products of silver ear in Taiwan.

The fruiting body of silver ear contains many nutrients including abundant protein, polysaccharides, unsaturated fatty acid and vitamins. The polysaccharides have anti-tumor characteristics which can promote the function of the human immunity. However, the extraction techniques of polysaccharides from silver ear are immature, it is unable to extract large amount of polysaccharides for commercialization. The functional ingredient of silver ear has great potential to apply in health food and cosmetic industries, but it still needs the researchers to put lots of efforts for further investigation.

The purposes of this plan in three years are : (1) to set up the cultural system of spawn which were mixed by *Tremella fuciformis* and *Hypoxylon archeri* (2) to study the favorable environment and best formula of substrate for growth of the mushroom (3) to development the year- round and automatic cultivation system of *Tremella fuciformis*. (4) to study the extraction techniques of silver ear for commercial yield;(5) to study the effects of silver ear to the growth of probiotics.(6) to evaluate the functional effect of silver ear in anti-aging and to develop the new cosmetic products.(7) to research the effects of silver ear in decreasing cholesterol and blood sugar levels for further development of health food products.

Keyword: *Tremella fuciformis*, silver ear, mass production, polysaccharide, insecticide, Health food, Cosmetics