Simple Extraction of Polyphenols from Unfermented Cocoa Beans

HEALTH FOOD PRODUCTS

Polyphenols are chemical compounds that are very important for human health. Generally known as antioxidants or anti-aging substances, polyphenols are also recognized for enhancing health and protecting body systems from chronic diseases. Many researches have shown that polyphenols reduce the risk factors for cardiovascular diseases. Studies have also shown that polyphenols are useful in preventing colon cancer. Due to its health benefits, polyphenols are acknowledged as “lifespan essentials”.

The common sources of polyphenols are plants and fruits. Plants produce these substances to protect themselves against diseases and when man consume these plants, they get the benefits of the polyphenols. Cocoa has been known as one of the rich sources of dietary polyphenols. In vitro and culture data indicated that cocoa polyphenols may exhibit antioxidant and anti-inflammatory, as well as anti-atherogenic activity. Consequently, there has been an increasing demand to obtain polyphenols from cocoa beans for new functional cocoa-derived polyphenol-rich food products or for incorporation as healthy supplement in food products to enable a person to increase the intake of this beneficial compound into the body.

Nevertheless, the amount of polyphenols extracted from cocoa beans tends to vary from one method to another. This is because there are several steps involved in the processes that affect the recovery of polyphenols content. The steps of fermenting, alkalisng, roasting, blanching or drying cocoa seeds tend to alter the chemical and structural composition of the phenolic compounds in the beans, which then lead to a decrease in the polyphenols content at the end of the process.

The present invention has come up with a simple and economical method that allows the collection of high polyphenols content from unfermented cocoa beans, which has significantly reduced the loss of polyphenols in conventional methods.

THE INNOVATION

Cocoa has long been a rich source of dietary polyphenols and known for its anti-oxidant or anti-aging, anti-inflammatory and anti-atherogenic properties. A new economical, simple and effective method to extract the polyphenols without decreasing its content from unfermented cocoa beans has been discovered. Besides protecting the body from chronic diseases, research has shown that polyphenols reduce the risk of cardiovascular diseases, even preventing colon cancer. These properties have supplementary health and cosmetic potential.

COMPETITIVE ADVANTAGES

Benefits of antioxidant chocolate are:

- Polyphenols as antioxidants scavenge free radicals that cause cellular damage. Free radicals can damage DNA, RNA and protein, which contributes to the physiology of ageing
- Polyphenols are considered to contribute to the prevention of various degenerative diseases, including cardiovascular diseases, stroke and heart disease
- Polyphenols reduce low-density lipoprotein (LDL) cholesterol
- Dietary polyphenols seem to exert positive effects on anxiety and depression, possibly in part via regulation of serotonin levels

COMMERCIAL POTENTIAL

Polyphenols are used as an additive in the food industry as well as food supplements and cosmetics. Major players such as Barry Callebaut, Chr. Hansen, Bioserae, etc. are using advanced technology to devise innovative methods for polyphenols to be incorporated into the diet and increase its bioavailability. Most of the supply is currently from Europe. As such, the current processes in obtaining high yield polyphenols from unfermented cocoa bean has a very promising market potential.