

## Saponin content in safed musli (*Chlorophytum borivilianum*) as influenced by peeling of roots

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Accepted : October, 2008

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### ABSTRACT

Safed musli (*Chlorophytum borivilianum*) roots after harvesting are usually peeled and washed with water for whiteness followed by sun drying. The peeling of roots is not only expensive but also laborious and time consuming. White product fetches more price than dull white or pale yellow musli and therefore the present laboratory study was undertaken to evaluate the saponin content in peeled and unpeeled roots successively for three years (2005-06 to 2007-08). The observations on moisture and saponin content were recorded throughout year at an interval of two months period. Significant reduction of saponin content in safed musli roots was noticed due to peeling and subsequent washing of roots and under storage study the significant reduction was noticed after 12 months storage period.

**Key words :** Safed musli (*Chlorophytum borivilianum*), Root peeling, Saponin, Saponin content.

The roots of *Chlorophytum borivilianum* have great medicinal value due to saponin content and are used extensively in Ayurvedic medicines. The roots of Safed musli contain the saponin (4-17%), steroid sapogenin (1 to 2 %), carbohydrates (40 %), proteins (10 to 12 %) and calcium to some extent with some water-soluble minerals. Sapogenins are C<sub>27</sub> steroids present in *Chlorophytum* species. Sapogenins are combined with sugars to form the saponins and being used in the commercial preparation of steroidal hormones. The roots are mainly used to treat general debility and male sterility. The dried fasciculated roots are reputed to have aphrodisiac properties and form an important ingredient of herbal tonics prescribed in Ayurvedic system of medicine in India

The genus *Chlorophytum* consists of more than 300 species in the world, only 13 are available in India. Out of which six are more important. The species *Chlorophytum borivilianum* contains more saponin and good yielding potential as compared to other species of safed musli and therefore is having commercial value. Safed musli roots after harvesting are usually peeled and washed with water for whiteness and dried in sun. The peeling of roots is not only expensive but also laborious and time consuming. White product fetches more price than dull white or pale yellow musli and therefore the present laboratory study was undertaken to evaluate the saponin content in peeled and unpeeled musli, as the saponins are water soluble.

### MATERIALS AND METHODS

A laboratory study during 2005-06 to 2007-08 was conducted to evaluate the loss of saponin content in Safed musli roots as influenced by peeling successively for three

years (2005-06 to 2007-08). Safed musli roots harvested in the month of February (of each year) were firstly cleaned with water. As per the treatments some roots were peeled (removal of skin) and after peeling, again water washing was given for white ness and some roots were kept as such (Unpeeled). These samples were stored in polythene bags and monitored for one year in respect saponin content at an interval of two months.

The moisture content was determined by A.O.A.C. (1985) method and saponin content in root was estimated by the procedure described by Birk *et al.* (1963). The data so obtained was statistically analysed by standard procedure to draw firm conclusion.

### RESULTS AND DISCUSSION

The saponin content was found significantly lowest in the peeled roots, indicating the loss of saponin due to peeling of roots and subsequent washing with water. As the saponins are water soluble substances, remarkable reduction in saponin content due to peeling followed by water washing might have been occurred. The highest magnitude of loss in Saponin content due to peeling was 20.95%. Non-significant effect of storage forms was observed on the moisture content.

The moisture content was significantly influenced by the storage period. The variation in the moisture content was due to prevailed weather conditions and it was significantly higher during August, however it was at par with the storage period of October. The saponin content found to decrease gradually with increase in storage period and significantly lowest content was noticed at 12 MAH.