Title Effect of storage time on the quality of dried herbs

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Abstract

The main storage is to reduce metabolic activity, rendering the medicinal plants less susceptible to deteroration. This can be achieve by either reducing the moisture content (by drying) to a save level or modifying the atmospheric conditions of the system where the medicinal plants are stored. A study was conducted to determine the quality of dried herb was packed with the different packaging methods and stored for 12 months storage period. The three herbs of pegaga *(Centella asiatica),* mengkudu *(Morinda citrifolia)* and halia *(Zingiber officinale*) were dried in fluidized batch dryer (FLBD) at 40°C and 60 °c, whereas by low-temperature and relative humidity generator (LTRH) was dried at 60°C. The initial of high moisture content ofpegaga, mengkudu and halia were 88-91 %, 82-88% and 83-90% respectively. The final moisture content of dried herbs vary from 5% to 12% depending the type of herbs and the recovery for pegaga, mengkudu and halia were about 9.5%,15.8% and 11 % respectively. The dried herbs of pegaga, mengkudu and halia were stored at ambient conditions for six months time by the different techniques of packaging. The samples were packed under C02 + LLDPEIEVOHILLDPE (0.06 mm), vacuum + PEiAUPE (0.08 mm) and control + HDPE (0.08 mm). The samples for six months storage period were analysed for moisture content, water activity (Aw), bacteria and mould & yeast. The sample of dried pegaga for one year storage period was analysed for green colour reduction, reproduction of *Lasioderma serricome* and phytochemical reduction.Generally, all the packaging techniques have shown the increased in moisture content and water activity to 12.2-12.5% (Initial: 8.513.9%) and 0.65-0.72 (Initial: 0.41-0.58) respectively. Bacteria and mould & yeast were decreased to an acceptable level of 1.51 x 10^6 cfu/g (Initial: 2.45 x 10^6 cfu/g) and 0.09 x 10^4 cfu/g (Initial: 0.51 x 10^4 cfu/g). This study suggested that the quality of dried herbs can be preserved under CO_2 + LLDPE/EVOHlLLDPE due to the less reduction of phytochemical contents and vacuum + PEl AL/PE for both the retention of greeness of pegaga and the minimum number of insect infestation.