Survey of Postharvest Quality Characteristics During Long-Term Farmers Stock Storage

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The length of time that peanuts remain in farmer’s stock storage is variable. With the record harvest of the 2012 peanut crop, some peanuts remained in farmer’s stock storage for up to 12 months before being shelled and placed in cold storage or shipped to the manufacturer. To investigate potential changes in peanut quality during storage in farmers stock warehouses, a survey was conducted at three farmers stock warehouses in the Southeastern U.S. All warehouses were located within 55 km of Dawson, Georgia. Two were 24-m wide conventional warehouses with 7.3-m eave heights and a 12:12 roof pitch. The third warehouse was approximately 61 m square with an eave height of approximately 4.3 m and a 2:12 roof pitch. Warehouses were filled to capacity by Nov 1, 2012 and had adequate headspace ventilation. Data collection began 11 April 2013 in two of the warehouses and 23 April 2013 in the third warehouse, and continued until unloading began in each warehouse. Temperature and relative humidity of the head space between the roof and the peanuts was recorded using battery operated dataloggers equally spaced along the catwalk and parallel to the ridge line of the warehouse. Three 5-kg samples were collected at similar locations in each warehouse on a monthly basis. Each sample was cleaned and shelled to determine the seed size distribution and a portion of the medium grade-sized seed were utilized for quality evaluations. The quality parameters determined were moisture content, peroxide value, raw skin color, roasted seed, and paste color, and descriptive sensory analysis. Moisture and oil content were similar throughout the sampling period. The percentage of jumbo- and medium-grade-sized seed decreased slightly over time and the percentage of splits also increased. Moisture content was relatively consistent because sampling began in April, approximately 5 months into the storage period, when the moisture content should have equilibrated with warehouse environmental conditions. Over time, Hunter L values of skins of the raw peanuts decreased over time indicating a darkening of the skins. Intensity scores for Roasted Peanutty and Sweet Aromatic decreased slightly and off-flavors increased over time especially in the latter sampling dates.