Title Conservation of Onion and Tomato in Niger, Assessment of Post-Harvest Losses and Drying Methods

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Abstract

Poor quality onion and tomato are offered frequently on markets in Niamey. A study was conducted in Niamey, Niger between September and December 2006 to assess current post-harvest losses and drying methods of onion and tomato. One major method of conserving perishables is traditional sun drying, which often results in produce of inferior quality. Data on the production, marketing, and quantitative losses of onion and tomato was collected. Moisture content, contamination with sand (acid non-soluble ash), and microbes (total mesophile bacterial count, faecal coliforms, moulds and yeasts, anaerobic living sul-phite reducing bacteria), for sun and solar dried onion and tomato, was determined. Finally consumers and retailers were interviewed about their view of produce quality, price considerations, satisfaction levels, stocking behaviour, and preferences.

Final moisture contents varied for dry onion and tomato between 14% and 16% with the natural convection solar dryer and 56% and 22% with sun drying respectively. Contamination with sand ranged between 0.1% of the dry matter (DM) for the solar dried produce and 5.4% DM for the sun dried samples. Samples from the markets contained as much as 20% DM sand. Only the onion dried with the forced convection dryer and one market sample of dry onion, as well as only one market sample of dry tomato, complied with applied general reference values for microbiological contamination. Quality losses of sold dry onion and tomato to some extent even lead to health risks.

Even though consumer surveys indicate low acceptance of dry onion and tomato, these are commonly used as cheap alternative to fresh produce. Comparative consumer surveys showed that solar dried tomato would be preferred, due to better hygienic quality. Thus need for implementing improved conservation methods is indicated but current socio-economic constraints need to be considered when striving for broad adaptation of new technologies.