Introduction

Iran is located in a semi-arid zone, and sometimes the livestock holders face to shortage of feed supply due to drought. One way to overcome this scarcity is to feed animals with locally available feed resources and agro-industrial by-products which cannot be consumed by humans. Raisin waste (RW) is a co-product of raisin production which is left after sorting and packing of raisins, and composed of rejected raisins, rachis, peduncles and pedicles.

The RW, like some other by-products, contains tannins (Besharati & Taghizadeh, 2011). Tannins are categorized as condensed and hydrolysable tannins which have positive and negative effects in ruminant nutrition (Makkar, 2003a). Within the latter, Priolo et al. (2000) found that feeding the lambs with carob pulp decreased the weight gain compared to those fed with conventional maize based diet. The negative effects of tannins are attributed to their capacity to bind to proteins followed by precipitation in the rumen (Jones & Mangan, 1977), reduced rumen protein degradation and fractional absorption of amino acids reaching to the small intestine (McNabb et al., 1996). These consequences result in low digestibility and low voluntary feed intake (Reed, 1995). Tannins also exert beneficial effects, such as protection of dietary proteins from being degraded in rumen, preventing bloat, defaunating activity and anti-parasitic effects (Min et al., 2003). In an experiment, Wang et al. (1996) observed that grazing sheep on Lotus corniculatus increased live weight gain and carcass weight compared to those supplemented