

Post-harvest Management of Cowpea: A potential Cash Crop for the Western Coastal Ecosystem of Goa

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ABSTRACT

Cowpea, popularly grown as Alsando (Red Bold Variety) or Chowli (the less bold cream colored cream-colored variety) is a major pulse crop of the state of Goa cultivated in the rice fallows during rabi season under residual soil moisture conditions. Harvest and post harvest post-harvest losses of Cowpea were estimated by primary and secondary data collected from 50 Cowpea farmers from five villages each in the two districts, North and South of Goa and 9 storage godowns in the year 2012-13. The results showed that in spite of the crop being highly remunerative, it was cultivated in only 40 % of the paddy area. The average losses on field were 10.84 % for harvest, followed by 6.96% for threshing and 4.34 % for storage as calculated from primary data collected on farm. Secondary data showed that the awareness of losses during harvest and post-harvest unit operations was very less as they reported zero losses. The pulse has a high storage insect pest, pulse borer (*Callosobruchus maculatus*, *Callosobruchus chinensis*) incidence and hence was stored only for seed purpose in some cases for a year and generally disposed of by the month of May in the godowns and by September at household level. In spite of having high returns, high local demand and nutraceutical value, the crop is not grown in large area due to labour intensive unit operations and high pest incidence. Sensitizing the farmers on good management practices and development of a drudgery free harvesting device can make this remunerative crop popular in the state.

KEYWORDS

Postharvest losses, harvest, threshing, drying, storage, pulses

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INTRODUCTION

Agriculture is the second important profession in Goa next to tourism with a share of Rs 1889.6 Millions in GSDP (AnonymousAnon, 2020). But with the Covid -19 Pandemic situation the tourism industry has had a severe setback thus driving agriculture to the top spot. The bold red variety of grain Cowpea, locally known as Alsando is a potential high value pulse crop grown in the residual moisture of rice fallows (around 6627 Ha) during Rabi season, December to March (Manjunath et al. 2013, Anonymous 2019). This is just 25.65 % of paddy area during Kharif season in the corresponding year, which was 25841 ha. Cowpea is a drought resistant crop requiring minimal management, of both determinate (Alsando -1) and indeterminate types (Goa (Nadora Badez-1), Dhulape Utorda -3 or Goa Cowpea-3) and every part of the crop is consumed as seed or fodder (for cattle). The average cost of the seed varies from ₹ Rs. kkharif, this is grown vegetable (Singh and Bhatt, 2013) temperature 29 to 35°C. It is a good source of protein (Table 1) and a delicacy in the state of Goa (Singh *et al*, 2012).

Table 1: Protein Content of Cowpea versus other sources

Source	Protein g/100 g
Cowpea (alsando)	25-28
Chicken egg	10.62-13.63
Chicken	23-29.8
Fish	6-23
Pork	27.55
lamb	20.91-50.9
Beef	16.9-49.2

Even though Cowpea has high value and demand in the state, the potential of this crop is not realized due to the marginal area under which it is cultivated (Singh *et al*, 2012). The harvesting and threshing of the crop are manual and involves a lot of drudgery which could be one of the reasons for this (Singh *et al*, 2015). The various unit operations involved in the crop from harvest to storage also lead to a lot of losses due to which the profit margins are further eroded. According to a study by AICRP-PHT, ICAR-CIPHET, total loss of pulses in farm operations was 3.4 to 5.0 % at national level and storage

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