

RESEARCH ARTICLE :

Economics of chilli processing in southern districts of Tamil Nadu

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SUMMARY : The study was conducted in Ramanathapuram, Thoothukudi and Virudhunagar districts of Tamil Nadu state. In total, 10 processing units were selected randomly and interviewed for the study. The recovery of large processing units (92.37%) was more than medium (90.49 %) and small units (87.86 %). Margin of processors increases with the increase in the size of processing unit. All the processing units were operating above the break even quantity in the study area.

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KEY WORDS :

Chilli processing,
Recovery, Capacity,
Fixed cost,
Variable cost

BACKGROUND AND OBJECTIVES

The demand for processed food has gone up due to an increase in urban population with relatively higher income levels. This has opened up opportunities for various participants in the value chain. Many agricultural commodities are to be processed to the consumable form before they reach to the final consumer. Therefore, processing in agriculture is an important marketing function. It is an important activity in case of spices. Spices processing industry has a significant place in India from many angles and is potent to contribute greatly to prosperity of the country.

India had been the largest producer and contributed 25 per cent to total world production of chillies. The area cultivated under chillies in Tamil Nadu was 4381

hectares with a total production of 21690 tonnes. The productivity was 4.95 tonnes per ha. The chillies are mainly grown in the districts of Ramanathapuram, Sivagangai, Thoothukudi and Virudhunagar and the major markets for chillies are located in Virudhunagar, Sattur, Thoothukudi and Ramnad in Tamil Nadu state.

Chilli is one of the most important spices, which is of little use as vegetable and mostly used as processed powder in daily diet. Therefore, economic aspects of chilli processing in Ramanathapuram, Thoothukudi and Virudhunagar districts of Tamil Nadu were studied to examine economic viability of different sizes of processing units. The processors were classified into three categories on the basis of per day capacity to process the chilli, viz., small units (capacity upto 5 quintals per day), medium units

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(capacity 5-10 quintals per day) and large units (above 10 quintals per day). In the study area, ten processing units were randomly selected to get the desired information. The data for the study were collected from each processing units through personal interview with the help of specifically developed schedule. The data were collected and tabular analysis was done.

RESOURCES AND METHODS

Ramanathapuram, Thoothukudi and Virudhunagar districts accounted for 65.74 per cent of area under cultivation of chillies in Tamil Nadu. Based on the area under cultivation of sannam variety of chillies, trading and processing activities Ramanathapuram, Thoothukudi and Virudhunagar districts were purposively selected for the study. Chillies processors are important intermediaries and ten processing units functioning in the study area drawn as sample for the study.

OBSERVATIONS AND ANALYSIS

According to Meena *et al.* (2006) processors were classified into three categories on the basis of per day capacity to process the chillies, *viz.*, small units (capacity upto 5 quintals per day), medium units (capacity 5-10 quintals per day) and large units (above 10 quintals per day).

Table 1 shows that, of the average quantity of chillies processed, 91.12 per cent was recovered as chilli powder and remaining quantity (8.86%) went as waste. The percentage recovery of chilli powder varied among all the three different size of units. The recovery of large processing units (92.37%) was more than medium (90.49%) and small units (87.86%). Thus, the difference in size of processing units had influence on recovery of chilli powder from dry chillies.

In small units, the total cost of processing was Rs. 1,17,674 out of which 9.14 and 90.86 per cent were incurred as fixed and working cost, respectively (Table

2). In fixed cost, major part was interest on fixed capital. While in the working cost, electric charges accounted the maximum, *i.e.*, 27.58 per cent of total cost followed by purchase taxes, labour charges, packing and labeling, agmarking of powder, interest on working capital, repair and maintenance, license fee and administrative charges. The cost of processing was estimated to Rs.201.15 per quintal. The total cost incurred for processing of 1187 quintals per month of chillies by medium units was Rs.2,33,371 of which 9.14 per cent was fixed cost and 90.86 per cent was working cost. So both small and medium firms had same percentage of fixed and working cost. In fixed cost, major part was interest on fixed capital, which was 5.68 per cent of total cost.

In the working cost, electric charges and purchase taxes accounted for maximum followed by packing and labeling charge, wages of labour and Agmarking of powder charges. Total processing cost per quintal was Rs.196.61, which was lower than small units due to smaller share of fixed cost in total cost, better utilization of resources and principle of economies of large-scale production.

In large units, the total cost of processing of 2045 quintals was Rs.3,97,396 of which 15.99 per cent was fixed cost and 84.01 per cent was working cost. The main item of fixed cost was the interest on fixed capital and wages to permanent labour, which were 4.16 and 3.84 per cent, respectively. In working cost, the main items were Agmark to product, purchase tax and electric charges. Total processing cost per quintal was Rs.234.42. If Agmarking cost was subtracted from the total cost, and then per quintal processing cost was Rs. 166.27. But branding and agmarking was one of the main functions of large size processors. Thus, cost of processing of large units was higher due to extra cost incurred in Agmarking of product.

Processors were asked to rank the reasons for damage to the produce and the results are presented in the Table 3. Damages caused by rainfall or humid

| Sr.No. | Size of processing units | (Quantity in quintal per month) | | | |
|--------|-----------------------------------|---------------------------------|------------------|------------------|------------------|
| | | Small | Medium | Large | Total |
| 1. | Chillies purchased for processing | 585.00 (100.00) | 1187.00 (100.00) | 2045.00 (100.00) | 1272.33 (100.00) |
| 2. | Loss during drying | 27.00 (4.61) | 54.00 (4.54) | 72.36 (3.53) | 51.12 (4.01) |
| 3. | Loss in grinding and handling | 43.20 (7.38) | 58.70 (4.94) | 83.46 (4.08) | 61.79 (4.85) |
| 4. | Chilli powder recovered | 514.80 (87.86) | 1074.23 (90.49) | 1889.17 (92.37) | 1159.40 (91.12) |
| | Material loss during processing | 70.20 (12.00) | 112.70 (9.49) | 155.82 (7.61) | 112.91 (8.86) |

| Sr.No. | Items of cost | Small | | Medium | | Large | |
|--------|---|-----------|--------|-----------|--------|-----------|--------|
| | | Rs. | % | Rs. | % | Rs. | % |
| 1 | Fixed cost | | | | | | |
| | Depreciation on land and buildings @5 % | 1832.00 | 1.56 | 3069.00 | 1.32 | 11786.00 | 2.97 |
| | Equipments @5 % | 1236.00 | 1.05 | 2286.00 | 0.98 | 9635.00 | 2.42 |
| | Insurance premium | | 0.00 | 1235.00 | 0.53 | 10365.00 | 2.61 |
| | Interest on fixed capital @10% | 7563.00 | 6.43 | 13255.00 | 5.68 | 16523.00 | 4.16 |
| | Wages to permanent labour | 125.00 | 0.11 | 1485.00 | 0.64 | 15250.00 | 3.84 |
| | Total fixed cost | 10756.00 | 9.14 | 21330.00 | 9.14 | 63559.00 | 15.99 |
| 2 | Working cost | | | | | | |
| | Electric charges | 32456.00 | 27.58 | 66258.00 | 28.39 | 78635.00 | 19.79 |
| | Wages to labour | 15000.00 | 12.75 | 24630.00 | 10.55 | 48246.00 | 12.14 |
| | Administrative charges | 3250.00 | 2.76 | 4523.00 | 1.94 | 8963.00 | 2.26 |
| | Repair and maintenance charges | 6524.00 | 5.54 | 8565.00 | 3.67 | 12587.00 | 3.17 |
| | License charges | 2265.00 | 1.92 | 3568.00 | 1.53 | 7896.00 | 1.99 |
| | Interest on working capital@10% | 9500.00 | 8.07 | 12455.00 | 5.34 | 14635.00 | 3.68 |
| | Purchase tax @ 1.6% | 18000.00 | 15.30 | 42565.00 | 18.24 | 76585.00 | 19.27 |
| | Agmarking of powder charges | 9660.00 | 8.21 | 18956.00 | 8.12 | 31696.00 | 7.98 |
| | Packing and labeling charges | 10263.00 | 8.72 | 28656.00 | 12.28 | 38968.00 | 9.81 |
| | Branding and advertising charges | | 0.00 | 1865.00 | 0.80 | 15626.00 | 3.93 |
| | Total working cost | 106918.00 | 90.86 | 212041.00 | 90.86 | 333837.00 | 84.01 |
| | Total cost (Fixed + working cost) | 117674.00 | 100.00 | 233371.00 | 100.00 | 397396.00 | 100.00 |
| | Total quantity processed | 585.00 | | 1187.00 | | 2045.00 | |
| | Total cost of processing per kg | 201.15 | | 196.61 | | 194.33 | |

| Sr. No. | Reasons for wastages | Mean score | Rank |
|---------|--------------------------------|------------|------|
| 1. | Higher moisture | 72.36 | I |
| 2. | Improper post harvest handling | 65.32 | II |

weather at the time of harvesting and pest or disease attack were the reasons for the wastage to produce. Most of the processors revealed that high moisture content of the dry chillies was the single most important factor followed by improper post harvest handling of dry chillies.

Conclusion:

The difference in size of processing units influenced the recovery of chilli powder. The findings indicated that the cost of processing per quintal of chilli was Rs. Rs. 201.15, Rs. 196.61, Rs. 166.27 for small, medium and large units, respectively. More moisture content of the dry chillies was the major reason for wastage. Larger processing units attained better economics of scale with

reduced wastages. Capacity expansion of existing units may be promoted by suitable government policies. The farmer-processor integrated value chain was found to be the most efficient in terms of reduced value addition cost and wastages. Suitable policy measures have to be devised to promote vertical integration in the chillies value chain.

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REFERENCES

Meena, G.L., Pant, D.C. and Kumar, Sarvesh (2006). Economics

of chilli processing in Rajasthan *Agric. Sci. Digest*, **26**(2) : 83-86.

Season and crops Report, 2011-12.

Srivastava, U.K. and Seetaraman, S.P. (1989). Agro-processing industries. *Indian J. Agric. Econ.*, **44**(4) : 407-412.

Statistical Hand Book (2012). *Assistant Directorate of Economics and Statistics*, Thoothukudi.

Statistical Hand Book (2012). *Assistant Directorate of Economics and Statistics*, Ramanathapuram.

Statistical Hand Book (2012). *Assistant Directorate of Economics and Statistics*, Viruthunagar.

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