



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

---

## **Abstracts of Ph.D Theses in Agricultural Economics**

1. *Identification and Research Prioritisation of Production Constraints in Major Crops of Saurashtra Region*, Thesis submitted by M.G. Dhandhalya and accepted by Department of Agricultural Economics, College of Agriculture, Junagadh Agricultural University, Junagadh in 2005.

Major Advisor: Dr. R. L. Shiyani, Professor and Head, Junagadh Agricultural University, Junagadh.

The present study was undertaken with a view to examine the constraints in production of major crops in Saurashtra region of Gujarat state, and to workout the strategy for proper allocation of limited research resources for the region/districts and commodities with reference to national goals. In all, 120 farm households were personally interviewed, spread over 12 villages of Bhavnagar, Junagadh and Rajkot districts, for the year 2003-04. The secondary data were also collected for the period 1999-00 to 2003-04. Identification of constraints and yield gap analysis was carried out adopting the procedure developed by International Rice Research Institute (IRRI) and for regional, district-wise and commodity priority setting, multi-criteria scoring model was used.

The investigation revealed a wide yield gap in major crops such as groundnut, sesame, bajra, wheat and cotton due to technical, socio-economic, abiotic and biotic, and drought constraints. Total production losses due to all production constraints at their moderate severity were estimated to be 12.74, 1.12, 2.02, 1.75 and 8.67 lakh tones respectively, indicating thereby the urgency for research investment to control the damage. It also discusses the suggestions emerged from the investigation such as more attention towards watershed developments, popularization of drip irrigation system, soil fertility management, biotechnological help to promote sustainable agricultural production, use of micro-nutrients, regular power supply, strengthening extension services etc.

2. *Farm Size and Productivity with reference to Sugarcane Crop in the Pondicherry Region*, Thesis submitted by U. Pitchai Mani, Head of the Department of Economics, Bharathidasan Government College for Women (Autonomous), Pondicherry to the Madurai Kamaraj University, Madurai which was approved in December 2002.

Name of Supervisor: Dr. (Mrs) N. Manonmoney, Head and Co-ordinator, School of Economics, Madurai Kamaraj University, Madurai (Tamil Nadu).

The study attempts to provide a reliable explanation about farm size and productivity with reference to sugarcane crop in the Pondicherry region. Specifically, it tries (i) to study the cost and returns structure of planted and ratoon sugarcane cultivation of different size groups; (ii) to analyse the inequalities in the distribution of per acre net income of different farm sizes; (iii) to identify the determinants of yield of small and large farms and to examine the structural differences between the two groups, (iv) to study the supply responsiveness of two groups of farms with regard to their own prices and the prices of variable inputs and units of fixed inputs and (v) to estimate the input demand elasticities and examine the nature of returns to scale of the different farm sizes. Using stratified multi-stage random sampling technique 250 sample farms were stratified into two categories, namely, planted and ratoon sugarcane. Out of this total, 152 were planted sugarcane farms and the remaining 98 were ratoon sugarcane farms. In each category, the sample farms were divided into small and large farms. In the planted sugarcane, out of 152 sample units, 108 were small farms and 44 were large farms. In ratoon sugarcane, out of 98 sample units, 66 were small farms and the remaining 32 were large farms.

The analysis of variance technique was used to test the homogeneity of the two groups, namely, small and large, in each category with respect to net income per acre. In order to estimate and compare the cost and returns of planted and ratoon sugarcane and of small and large farms producing planted and ratoon sugarcane, Cost A and Cost C concepts were used. Multiple log-linear regression model was used in order to identify the determinants of yield per acre of sugarcane of different groups of farms. Chow's test was applied to examine whether there existed structural differences between planted and ratoon sugarcane and size group of farms. Double-log regression model was fitted to the data to examine the relationship between farm size and productivity.

The results of the study indicated that the employment of female labour was less than that of male labour. The large farms incurred more expenses on hired labour compared to small farms. It may be due to the fact that family labour employment was higher in small farms than in large farms. The input-output analysis showed that the yield per acre produced by the small farms was higher than that produced by large farms cultivating planted and ratoon sugarcane. The analysis of cost and returns structure revealed that the amount spent on inputs to produce the planted and ratoon sugarcane by the small farms was less than that of large farms. The small farms realised more yield per acre in physical terms. The net returns earned by small farms was also higher than that earned by the large farms. The results of regression model estimated for small and large farms producing planted sugarcane indicated that among the significant variables for both farms, fertiliser emerged as an important input influencing the yield of planted sugarcane followed by human labour. The analysis of farm size and productivity indicated that increase in farm size resulted in significant decrease in land productivity with respect to planted and ratoon sugarcane cultivation in Pondicherry region. The relationship between acreage and labour

productivity emerged negative in ratoon sugarcane and positive in planted sugarcane farming. However, the relationship was statistically insignificant under both the planted and ratoon sugarcane. The cost variables declined significantly in relation to an increase in acreage in the case of the two planted and ratoon sugarcane. The double-log regression model was statistically significant at five per cent level. The computed results of indirect estimates of production elasticities for planted sugarcane farms showed that land in total output was found to be higher for large farms and the share of capital, human labour and fertiliser was higher among small farms. Regarding returns to scale, constant returns to scale prevailed for both small and large farms producing planted sugarcane in the study area. In the case of ratoon sugarcane, the analysis of indirect estimates of production elasticities, the share of land, human labour and fertiliser were found to be higher for small farms than the large farms. The share of capital was higher for large farms as compared to small farms. Constant returns to scale prevailed in the production of ratoon sugarcane for both small and large farms.