RESEARCH ARTICLE

Performance of mango in South Gujarat region

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ABSTRACT

The trends in area, production and productivity of mango crop in South Gujarat Region were estimated in the present study. The district wise time series data on area, production and productivity of mango crop were collected from General Statistical Information of Agricultural Department published by Govt. of Gujarat. The entire study was split into two sub periods, *i.e.* period I (1990-91 to 1997-98) and period II (1998-99 to 2007-08). Different districts of South Gujarat region were classified into two different periods. Period I included Bharuch, Surat and Valsad districts and period II included Bharuch, Surat, Valsad, Dang, Navsari and Narmada districts. The results revealed that Linear Growth Rate for mango was non-significant in both the periods, but Compound Growth Rate for mango was significant in both the periods. For Valsad district, the production and productivity of mango was highly significant in 2nd period as compared to 1st period of South Gujarat region. The results for the instability index for area, production and productivity were found higher in period II as compare to period I.

INTRODUCTION

The mango *(Mangifera indica* L.*)* is the most important among the tropical fruits of India. India is the largest producer of mango accounting for about 63 %of world production. Mango is grown in all the parts of Gujarat State. However, it is not considered on commercial proposition except in South Gujarat region. High growth and low instability in production are a pre-requisite for the overall sustainable agricultural performance .However, there is a growing concern that with the technological change in production, variability has also increased. Since the magnitude of growth and instability in production are serious implications for policy makers. Taking into consideration the importance, the present study was undertaken to work out the linear growth rate and compound growth rate of mango for different districts in South Gujarat region and to estimate the instability indices of mango for different districts of South Gujarat region.

METHODOLOGY

The District wise time series data on area, production and productivity of mango were collected from General Statistical Information of Agricultural Department published by Govt. of Gujarat. To study the performance of mango in respect of area, production and productivity, linear and compound growth rates were worked out for the period 1990-91 to 2007-08. The entire study was split into two sub periods *i.e.* period I- (1990-9 to 1997-98) and period II- (1998-99 to 2007-08). Different districts of South Gujarat Region were classified into two different periods. Period I included Bharuch, Surat and Valsad districts and period II included Bharuch, Surat, Valsad, Dang, Navsari and Narmada districts. The linear and compound growth rates were worked out by using the following formulae:

Linear equation

$$Y = a + bx \qquad \ldots \qquad (1)$$

where,
Y = Yield
a = Constant
bx = Regression coefficient
Linear growth rate (LGR) =b/y X100

The compound growth rates were calculated by fitting the exponential function given below:

$$Y = a\,b^{t} \qquad \ldots \qquad (2)$$

where,
Y = Area / production / productivity
a = Constant
b = Regression coefficient
t = Time variable
Compound growth rate (CGR) = (Antilog of b-1) X 100

The significance of L.G.R and C.G.R were tested at 5% level with the table value of