# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table No.</th>
<th>Description</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1-1</td>
<td>Yield increase from fertilizer application under unirrigated condition in experiments on cultivators field (1977-1984)</td>
<td>3</td>
</tr>
<tr>
<td>1-2</td>
<td>State-wise fertilizer consumption in India during 1990-91</td>
<td>9</td>
</tr>
<tr>
<td>1-3</td>
<td>Nutrients content of common fertilizer and prices</td>
<td>11</td>
</tr>
<tr>
<td>1-4</td>
<td>A summary of fertilizer response on HYVon cultivators field with irrigation in India</td>
<td>13</td>
</tr>
<tr>
<td>1-5</td>
<td>Production and consumption of fertilizer in India</td>
<td>16</td>
</tr>
<tr>
<td>1-6</td>
<td>All India Production target and stock of N and March (1995 &amp; 1994) and April-March (1994-95 &amp; 1993-94)</td>
<td>20</td>
</tr>
<tr>
<td>Research Methodology</td>
<td></td>
<td>73</td>
</tr>
<tr>
<td>iii-1</td>
<td>Variables and their empirical measurement</td>
<td>83</td>
</tr>
<tr>
<td>Description of tracts</td>
<td></td>
<td>93</td>
</tr>
<tr>
<td>iv-1</td>
<td>Sub-division tehsils, panchayat samitis and Nagar Mahapalika</td>
<td>95</td>
</tr>
<tr>
<td>iv-2</td>
<td>Annual rain fall in district Sawai Madhopur from 1980-1993 (cm)</td>
<td>96</td>
</tr>
<tr>
<td>iv-3</td>
<td>Total geographical area of district Sawai Madhopur and its breakup in various uses for the year 1992-93</td>
<td>97</td>
</tr>
<tr>
<td>iv-4</td>
<td>Net and gross irrigated area in the district for 1984-85 and 1988-89 and 1992-93</td>
<td>98</td>
</tr>
<tr>
<td>iv-6</td>
<td>Source wise irrigated area from 1979-80 to 1992-93</td>
<td>100</td>
</tr>
<tr>
<td>iv-7</td>
<td>Classification of area under different crops</td>
<td>101</td>
</tr>
<tr>
<td>iv-10</td>
<td>Production of main crops in district, Sawai Madhopur for</td>
<td>107</td>
</tr>
</tbody>
</table>
1984-85, 1989-90, 1990-91 & 1992-93 (000 MTs)


iv-12 Consumption of NPK from 1988-89 to 1992-93 in district Sawai Madhopur

iv-13 Fertilizer consumption per hectare of cropped area in Sawai Madhopur district

iv-14 Trend of fertilizer consumption in district Sawai Madhopur

iv-15 Compound growth rates of Nitrogenous, phosphatic and potassic and aggregate fertilizers in Sawai Madhopur district

iv-16 Urban and rural population

iv-17 Population of educated person for census from 1951-1991


iv-20 Scheme wise targets and achievement of subsidy during 1991-92 and 1992-93 in Sawai Madhopur district

iv-21 No. of banks, covered area, for 1987, 1989 & 1992 in Sawai Madhopur district

iv-22 Targets and achievement of crop loans of cooperative and commercial bank in Sawai Madhopur district

iv-23 Fertilizer consumption per hectare of cropped area in Rajasthan

iv-24 Compound growth rate of Nitrogenous, Phosphatic and potashic and aggregate fertilizer in Rajasthan

iv-25 Fertilizer consumption in Rajasthan State

Findings

A. Farm Structure

v-1 Distribution of farms and area under different size of farmers

v-2 Area under irrigation and unirrigated area and their percentage to total cultivated area under different size of farms.

v-3 Sourcewise distribution of irrigated area and its percentage to total irrigated area under different type of farms.
v-4 Investment on fixed capital per farm and per hectare and its percentage to total investment on the forms of different groups including value of land

v-5 Investment on fixed capital per farm and per hectare on different categories of farm excluding land and their percentage to total investment

v-6 Cropping intensity on the sample farmers of different categories of farmers

v-7 Area under major crops and their percentage to total cropped area on the sample farmers of different sizes

v-8 Family members, family workers and working days in man equivalent days.

v-9 Utilization of family labour and its percentage to availability on the farmers of different types

v-10 Hired human labour utilization per farm and per hectare

v-11 Family and hired human labour utilization and their percentage to total human labour utilization on the sample forms of different types.

v-12 Utilization of bullock labour and tractor power on different size of farms.

B. Infrastructure

vi-1 Total no. of farm families, sample size and average size of holdings (ha)

vi-2 Socio economic status of selected farm families of district, Sawai Madhopur

vi-3 Education level of selected farmers under different size of groups in Sawai Madhopur district

vi-4 Age groups distribution of selected farmers in Sawai Madhopur district.

vi-5 Caste distribution of the sample farmers

vi-6 Type of family of selected farmers under various categories

vi-7 High, medium and low mechanized farms of sample farmers

vi-8 Scientific orientation of selected farmers

vi-9 Risk bearing capacity of sample farmers under different categories

vi-10 Participation in social organization

vi-11 Agencies of fertilizer distribution, no. of buffer stocks, no.
of sale points and staff engaged in distribution in during
1992-93 in district Sawai Madhopur

vi-12 Preference of distribution agencies for fertilizers under
various categories of farmers 158

vi-13 Distribution of total fertilizer by different agencies to the
selected farmers of different categories. 159

vi-14 Reasons of preference of selected farmers for fertilizer
distribution agencies 161

vi-15 System of sale of distribution of fertilizer by different
agencies 163

vi-16 Policy implication of fertilizers distribution agencies in
district Sawai Madhopur 165

vi-17 Consumption of fertilizer in the form of NPK for the period
from 1990-91 to 1992-93 in district Sawai Madhopur 171

vi-18 Consumption of different type of fertilizer on different
crops on selected marginal farmers 173

vi-19 Consumption of fertilizer on various crops per farm and per
hectare of cropped area on small forms 175

vi-20 Consumption of fertilizers on the farmers of medium
farmers in respect with cropping pattern 176

vi-21 Consumption of fertilizer on various crops per farm and per
hectare of cropped area on large farmers 179

vi-22 Average consumption of different fertilizers per form and
per hectare on different crops of selected forms 180

vi-23 Consumption of fertilizer by marginal formers under
different crops in the form of NPK. 182

vi-24 Consumption of fertilizer by small farmers under different
crops 183

vi-25 Consumption of fertilizer by medium farmers under
different crops per form and per hectare 184

vi-26 Consumption of fertilizer by large farmers under different
crops 185

vi-27 Average consumption of fertilizer under different crops as
a whole for all selected formers 186

vi-28 Fertilizer consumption per hectare of cropped area for
different cropping pattern under different categories of
formers 187a

vi-29 Percentage of irrigation and consumption of fertilizer per
hectare of cropped area under different categories of farms 191

vi-30 Suggestion of farmers to remove the present situation of

ix
fertilizer use

vi-31 Suggestion of officials for enhancing the fertilizer distribution and consumption 194

vi-32 Reasons of non application of recommended doses of fertilizers 196

vi-33 Independent variables, their (b) values, standard errors and 6+9 values of b 197

C. CROP ENTERPRISE ANALYSIS (COST AND RETURN) 199

vii-1 Distribution of cost per hectare of input factors on wheat under different categories of farm 202

vii-2 Distribution of cost per farm on wheat on input factors and their contribution to total cost 204

vii-3 Physical level of output and its value per farm and per hectare of wheat under different categories of farms 207

vii-4 Return to operating cost, fixed cost, per hectare and input output ratio and cost price ratio of wheat 209

vii-5 Net income, family labour income and farm business income per hectare and per farm of wheat and their respective share to value of output. 210

vii-6 Return to capital investment and return per rupee investment of fertilizer consumption on wheat per hectare and per farm under different categories of farmers 212

vii-7 Gross, operating and fixed ratios of wheat under different categories of farms 214

vii-8 Percentage return on investment of fertilizers consumption and benefit cost ratio under various categories of farmers 215

vii-9 Distribution of cost per hectare on input factors on bajra under various categories of farmers 217

vii-10 Distribution of cost per farm of bajra on input factors and their contribution to total cost 219

vii-11 Physical output and its value per farm and per hectare under different categories of farmers 222

vii-12 Return of output over operating and fixed per hectare and cost- price ratio of Bajra 224

vii-13 Net income, family labour income and farm business income and their respective share to total value of output 225

vii-14 Return to capital investment and return per rupee investment on fertilizer of bajra under various categories of farmers 226
vii-15 The gross operating and fixed cost of bajra under various group of farms 227
vii-16 Benefit-cost ratio of bajra crop under different categories of farms 228

Regression Analysis 229

viii-1 Matrix of simple correlation coefficient between different variables 230
viii-2 The value of constant (a), the value of regression coefficient / elasticity of each independent variable along with value of $R^2$ 231
viii-3 Elasticity of production, value of $t$, standard error and coefficient of multiple determination of wheat for the farms under study 234
viii-4 Marginal physical and value product of various input of wheat for all farms under study 234
viii-5 Optimum and existing levels of various inputs for the sample farms as whole 236
viii-6 Production of wheat per hectare under existing and optimum form resources and additional physical and monetary gain under various categories of farms 239
viii-7 Elasticity of production, value of 't' and standard error of bajra for the farms under study 242
viii-8 Marginal physical and value product of various variables inputs used in bajra 242
viii-9 Optimum and existing levels of various variable inputs of bajra on the sample farms 243

Production of bajra per hectare under existing and optimum variable inputs and additional physical and monetary gain under various category farmers 245