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November-December 2017

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CONTENTS

Previous issue :

Vol. 8, No. 5, pp. 1012-1232

Review Paper

Plant disease management in organic agriculture

— **Y.S. PAUL** 1233

Research Papers

Variability and heritability studies for yield & yield component traits in foxtail millet [*Setaria italica* (L.) Beauv.]

— **THIPPESWAMY V. and GOWRI M. SAJJANAR** 1239

Evaluation of bidi tobacco genotypes for seed yield and associated traits

— **G.M. SAJJANAR, P.S. MATIWADE, GEETADANDIN, KUMARI BASAMMA and I.K. KALAPPANAVAR**..... 1245

Variability, heritability and genetic advance for quantitative and qualitative traits in potato genotypes under hill zone of Karnataka

— **RAMACHANDRAM.K. and SRINIVASA V.** 1250

Effect of salinity stress on mungbean genotypes (*Vigna radiata* L. Wilczek) at early seedling growth stage

— **S.K. YADAV, A. PAL, A.K. PAL and R. NATH** 1254

Growth and yield parameters of rice grown in coal fly ash and organic manures amended soil

— **K. THERESA, S. SHEEBA and K. ARULMOZHISELVAN** 1259

Effect of integrated nutrient and weed management on growth, yield & economics of transplanted rice in rice-rice cropping system

— **M. KANDESHWARI and C. JAYANTHI** 1265

Effect of micronutrient and vermicompost on quality and yield of fenugreek leaf and seed

— **N. KARMAKAR, A. CHAKRAVARTY, P.K. BANDOPADHYAY, R. CHATTERJEE and P.K. SAHU** 1270

Nutrient management options for organic cotton production

— **RUDRAGOUDA F. CHANNAGOUDA, S.B. SALIMATH, SHARANAPPA JANGANDI and T.H. GOWDA** 1275

Effect of different land configurations and nutrient levels on growth, yield, nutrient uptake and economics of *Bt* cotton

— **AMBIKA V., G.S. YADAHALLI, B.M. CHITTAPUR, SHAMRAO KULKARNI, VIDYAVATHI G. YADAHALLI and SIDDU M. MALAKANAVAR** 1280

Influence of planting dates and INM practices on growth and yield of potato (*Solanum tuberosum* L.)

— **PRASANJEET BAIDYA, ANWESH RAI, DEBASIS MAHATA and SUBHENDU BANDYOPADHYAY** 1284

Nitrogen management and economics of potato (*Solanum tuberosum* L.)

— **DEBASIS MAHATA, MAYUKH GHOSH and ASOK SAHA** 1290

Status of organic carbon stock and available Zn in rice grown soils of Navsari District, Gujarat

— **MITUL SAXENA, A. DAS, B.K. GADHAVI, K.C. PATEL and R.M. PANKHANIYA** 1294

Gypsum requirement of salt affected soils of Vani Vilas command area of Hiriyur taluk, Chitradurga, district

— **SHIVAKUMARS., SARVAJNA B. SALIMATH, R.F. CHANNAGOUDA and GURUMURTHY, K.T.** 1299

Contd.

Forms and status of potassium in soils of Vanivilas command area of Hiriyur taluk, Chitradurga district — K. RAMYAKRISHNA, K.T. GURUMURTHY, SARVAJNA B. SALIMATH and G.N. THIPPESHAPPA	1304
Fractionation and distribution of zinc under INM system on LTFE's maize-wheat cropping system in TypicHaplustept soils of Udaipur — PRIYANKA, S.K. SHARMA, R.H. MEENA and H.S. PUROHIT	1308
Effect of sulphur and selenium on bulb yield, selenium content and antioxidant properties in onion (<i>Allium cepa</i> L.) — A. JESSIE REBECCA, P. SURENDRA BABU and M. CHANDINI PATNAIK	1313
Correlation studies on the growth and yield attributing characters of onion in Vindhyan Plateau of Madhya Pradesh — M.P. DAS, K.N. TAMBI, S.A. ALI and H. SETHY	1317
Enhancing the fertility of acid soil using fly ash — E. NIVETHA and S. SHEEBA	1320
Optimizing the spacing and nitrogen level for pre-release rice cultures under sodic soil condition — S. AVUDAITHAI and S. SOMASUNDARAM	1324
Effect of pulse irrigation (drip) under different irrigation levels on yield and economics of white onion production — D.A. MADANE, M.S. MANE, U.S. KADAM, R.T. THOKAL, S.B. NANDGUDE, J.S. DHEKALE and S.T. PATIL	1327
Influence of varieties and nutrient levels on growth, yield, quality and nutrient uptake in cauliflower — YOGENDRA MEENA, R.K. SHARMA, S.S. KUSHWAH and ROSHAN GALLANI	1331
Evaluation of chlormequat chloride on growth, yield and economics of soybean — H.H. DIKEY, R.S. WANKHADE, S.P. PATIL, J.B. DURGE and SHUBHANGI SHELKE	1335
Effect of colour plastic mulching on water use efficiency and yield of okra (<i>Abelmoschus esculentus</i> L.) under drip irrigation — SHIVARAJ S., P. BALAKRISHNAN, G.V. SRINIVASA REDDY and KAVITA KANDPAL	1339
Effect of INM on vegetative growth and yield of sweet orange (<i>Citrus sinensis</i> Osbeck) cv. Mosambi under central dry zone of Karnataka — N.U. POOJA, S.B. SALIMATH, B.S. SHIVAKUMAR, S.M. SUTAGATTI and RUDREGOUDA F.C.	1343
Growth, flowering and yield characters of rose (<i>Rosa</i> spp.) varieties for loose flower production — GANISSETTI ANITHA, BALAJI S. KULKARNI and MUKUND SHIRAGUR	1347
Development of stochastic time series model for prediction of rainfall in upper Bhima catchment of Western Maharashtra — PRADIP DALAVI, S.R. BHAKAR, P.K. SINGH, MAHESH KOTHARI and H.K. JAIN	1351
Response of varieties to grafting in black pepper (<i>Piper nigrum</i> L.) in hill zone of Karnataka — SOURABHA V. HEGDE, LAXMINARAYAN HEGDE, N.K. HEGDE, MANJU M.J. and SHIVAKUMAR K.M.	1356
Influence of plant growth regulators and sucrose on rooting of stem cuttings in karonda (<i>Carissa carandas</i> L.) — SHWETA MARUTI SUTAGATTI, SHIVAKUMAR B.S., SARVAJNA B. SALIMATH, POOJA N.U. and NIRUPADI	1360

Contd.

Study of drying behaviour in red chillies	
— SHUCHI GUPTA, S.R. SHARMA, T.C. MITTAL, S.K. JINDAL and S.K. GUPTA	..... 1364
Design of multipurpose slicer-cum shredder for production of potato (<i>Solanum tuberosum</i>) chips	
— SEEMA SHEKHAWAT, S.K. JAIN and N.S. RATHORE	..... 1370
Vector transmission of <i>Urdbean leaf crinkle virus</i>	
— G. BHAVANI, V. MANOJ KUMAR and P. ANIL KUMAR	..... 1376
Management of rice weevil, <i>Sitophilus oryzae</i> L. in maize by modified atmosphere with elevated levels of carbon dioxide	
— A. PADMASRI, C. SRINIVAS, K. VIJAYA LAKSHMI, T. PRADEEP, K. RAMEASH, CH. ANURADHA and B. ANIL	..... 1381
Modification of Richmond formula for calculation of solids not fat/total solids in buffalo milk of various dairy plants of Gujarat State	
— KINJAL J. PATEL, VITTHAL R. BOGHRA and VIJAY B. DARJI	..... 1387
Mathematical modeling of microwave drying characteristics of banana	
— P.D. JAWAKE, V.D. MUDGAL and S.K. JAIN	..... 1393
Effect of pre-harvest application of NAA, GA ₃ and TIBA on storage of peach cv. Shan-i-punjab under cold storage	
— SOMANDEEP KAUR and SUKHDEV SINGH	..... 1398
Standardization of different planting techniques on growth, yield, quality, fresh weight and dry matter content in ginger (<i>Zingiber officinale</i> Rosc.)	
— PUSHPA D.S., K.N. KATTIMANI, A.B. MASTIHOLI and BHUVANESHWARI G.	..... 1402
Design model of coconut harvesting machine	
— R.K. AGRAWAL, S.K. JAIN and SADASHIV SHIRSAT	..... 1406
Development of watermelon (<i>Citrullus lanatus</i>) nectar blended with seedless lemon (<i>Citrus limon</i>) juice	
— SAVITA A. KARCHE, PRADIP P. RELEKAR and KESHAV H. PUJARI	..... 1410
Substratum and temperature requirement of porso millet seed	
— BHIM JYOTI, RAMA KANDPAL and PANKAJ KUMAR	..... 1414
Power operated multi seed decorticator-M6 for small and marginal farmers	
— SHARANAPPA JANGANDI, RUDRAGOUDA F. CHANNAGOUDA, RAJASHEKHAR D. BARKER and T.H. GOWDA	..... 1418
Variability studies in Heliconia genotypes	
— SANTHOSH N., CHANDRASHEKAR S.Y., VIDYAC. and GIRISH R.	..... 1421
Socio-economic assessment of major livelihood adaptations in Coral ecosystem	
— ANSHIDA BEEVIC.N., MONIKA WASON, R.N. PADARIA, N.V. KUMBHARE and ELDHO VARGHESE	..... 1424
— AUTHORS INDEXING	..... 1427
— KEYWORDS INDEXING	..... 1433

Strategic Vision Message : 42

The Concept and Scope of Organic Agriculture in India

— Dr. Y.S. PAUL

Back Inner Page



Socio-economic assessment of major livelihood adaptations in Coral ecosystem

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ABSTRACT

Livelihood is sustainable when it can cope with and recover from shocks and stresses and also maintain or enhances its capabilities and assets now and in the future while not undermining the natural resource base. The risk of livelihood failure determines the level of vulnerability of a household to income, food, health and nutritional insecurity. The rural livelihood diversification is an integral dimension of development agenda for strengthening rural livelihood and sustaining livelihood security. The present study was conducted among 120 households in two islands of U.T. of Lakshadweep for the socio-economic assessment of major livelihood adaptations. Randomly selected 120 respondents were categorized into three categories based on their livelihood strategies in terms of share of agriculture in household's income. Farming group represented the first group, the respondents having non-farm based livelihood options represented the second group and both farming and non-farming households represented the third group. Study examined the average annual income change over the period using paired t-test of two sample data. It was observed that it was significantly changed over the period for three groups. Seven components of livelihood security were also analyzed using Wilcoxon Signed Rank test and found that food security, habitat security, educational security and health security of the three groups were significantly changed and social security was not significantly changed. For second group, environmental security was also changed significantly. For only farming group occupational and financial security was not significantly different.

Key words : Coral ecosystem, Livelihood security, Socio-economic assessment.

INTRODUCTION

In India, the majority of rural families are dependent on agriculture and allied activities for their livelihood. Though, rural areas contain a wide range of economic activities, farming is certainly one of the major activities in rural economies. However, due to fast depletion of natural resources, subdivisions of landholdings and fluctuations in climatic conditions, the income from agriculture has been dwindling. Hence, in recent years, land-based livelihoods of small and marginal farmers are increasingly becoming unsustainable. Also, the introductions of new technologies have given tremendous benefits only to the resourceful and educated farmers, while depriving the small landholders of such benefits. As a result, rural households are forced to look at the alternative means for securing their livelihoods. All these led to a new paradigm of

rural development that takes a broader view on the rural economy, incorporating economic activities other than farming, while highlighting the broad diversity of rural development processes. Generally this is referred to as the livelihood diversification of the rural economy. Livelihood comprises people, their capabilities and their means of living including food, income and assets (Chambers et al., 1992). According to Tropenbos International (2005), alternative livelihood programmes are initiatives that utilize indigenous local customs and knowledge to take advantage of available natural resources for the benefit of individual and societal needs.

Traditionally development has been meant as economic growth and the per capita GNP has been used to measure the overall economic well-being of a population. The World Development Report (1991) asserted : the challenge of development is to improve the quality of life. The theories of well-being have also undergone changes drawing their

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foundations from the 'capability approach' of Amartya Sen, which says that poverty or deprivation has to be seen not merely as lack of income but as a lack of opportunities to attain a certain valuable functioning. As Sen put it, "poverty cannot be properly measured by mere income alone, what matters is not the things a person has, but what a person is or can be and what he does or can do". The risk of livelihood failure determined the level of vulnerability of a household to income, food, health and nutritional insecurity. Livelihoods were secure when households had secure ownership of or access to resources and income earning activities, including reserves and assets, to offset risks, ease shocks and meet contingencies (Chambers, 1988). The idea of household livelihood security embodies three fundamental attributes: (1) the possession of human capabilities (2) access to other tangible and intangible assets and (3) the existence of economic activities. In its simplest form, livelihood security is the ability of a household to meet its basic needs like food, health, shelter and minimal levels of income, basic education and community participation. Frankenberger (1996) reported that household livelihood security has been defined as adequate and sustainable access to income and resources to meet the basic needs (including adequate access to food, water, health facilities, educational opportunities, housing and time for community participation and social integration. Socio-economic assessments of livelihoods can facilitate to identify and understand the significant social and economical issues and risks facing a household as well as its socio-economic development opportunities. In this context, present study made an attempt to assess the socio-economic status of different livelihood adaptations in India's coral paradise, ie) Lakshadweep and also focused on seven components of livelihood security such as food security, financial and occupational security, habitat security, educational security, health security, social security and environmental security.

METHODOLOGY

Study was conducted in the two selected islands of Lakshadweep namely Kalpeni and Andrott. For this 120 respondents were selected randomly and were grouped into three livelihood classes based on their share of agriculture on households' income. First group involved only in farm sector, it comprises both farming and fishing. Second group engaged only in non-farm activities such as service and business. Third group involved in both farm and non-farm activities as their livelihood options. In this study, the livelihood security was operationalised as adequate access to income and other resources to meet basic needs including food and nutrition, health facilities, clean environment, habitat facilities, educational opportunities and community participation and social integration. With the help of interview schedule, data collected on seven components of livelihood security for last year and also for ten years ago through recall method and

livelihood security index was measured. Then the data analyzed using non-parametric test, Wilcoxon Signed Rank test to analyze the progress over ten year period as perceived by the respondents.

RESULTS AND DISCUSSIONS

Average annual income : Average annual income of the family in the last year and ten years before were compared using paired t-test. It is clear from the following **Tables (1, 2 and 3)** that calculated t-value for sample means of annual income of all the three categories were significantly different at 5 per cent level of significance. Nandini and Kiresur (2013) in their study conducted in Karnataka found that the annual income of family and present asset value have showed a positive association with work participation.

Table 1. Paired t-test for means of annual income of group 1 (n=13)

Category	Mean	SD	DF	t-stat	p value (two-tailed)	t-value
2002	52076.92	2722.18	12	-43.83	<0.0001	2.18*
2012	79538.46	2258.89				

*Significant at 5% level of significance.

Table 2. Paired t-test for means of annual income of group 2 (n=54)

Category	Mean	SD	DF	t-stat	p value (two-tailed)	t-value
2002	236370.37	42367.79	53	-4.28	<0.0001	2.01*
2012	256444.44	30509.30				

*Significant at 5% level of significance.

Table 3. Paired t-test for means of annual income of group 3 (n=53)

Category	Mean	SD	DF	t-stat	p value (two-tailed)	t-value
2002	24320.75	32241.74	52	-13.45	<0.0001	2.01*
2012	254339.62	33867.92				

*Significant at 5% level of significance.

Livelihood security : The idea of measuring well being of people at the household level is not new. It has been explored in the last two decades with development of the frameworks for household livelihood security by various organizations like the International Food Policy Research Institute (IFPRI) and in many departments of applied anthropology (Drinkwater, 1994; Frankenberger, 1992, 1996; Maxwell, 1994).

Livelihood security of only farming group (Group 1) :

Test statistics for group 1 shows that (**Table 4**) habitat security, educational security and health security were significantly different even at 1 per cent level of significance. Food security is significantly different at 5 per cent level of significance but occupational and financial security, social security and environmental security were not at all significant.

Table 4. Wilcoxon signed rank test statistics for group 1 (n=13)

Components	Z value	Asymp.Sig.(two-tailed)
Food security	-2.081*	0.037
Occupational & financial security	0.000	1.000
Habitat security	-3.196**	<0.0001
Educational security	-2.848**	0.004
Health security	-3.606**	<0.0001
Social security	0.000	1.000
Environmental security	0.000	1.000

*Significantly different at 5%level of significance

**Significantly different at 1%level of significance

Livelihood security of only non-farming group (Group 2):

It is clear from the data in **Table 5** that food security, occupational and financial security, habitat security, educational security and health security were significantly different at 1 per cent level of significance. Environmental security was significantly different at 5 per cent level of significance. But social security was found not significantly different.

Table 5. Wilcoxon signed rank test statistics for group 2 (n=54)

Components	Z value	Asymp.Sig.(two-tailed)
Food security	-6.615**	<0.0001
Occupational & financial security	-5.351**	<0.0001
Habitat security	-6.521**	<0.0001
Educational security	-6.571**	<0.0001
Health security	-7.348**	<0.0001
Social security	0.000	1.000
Environmental security	-2.236*	0.025

*Significantly different at 5%level of significance

**Significantly different at 1%level of significance

Livelihood security of both farming and non-farming group (Group 3):

The results showed that (**Table 6**) food security, occupational and financial security, habitat security, educational security, health security and environmental security were significantly changed over the years. Social security and environmental security were not significantly changed over the period.

Table 6. Wilcoxon signed rank test statistics for group 3 (n=53)

Components	Z value	Asymp.Sig.(two-tailed)
Food security	-6.548**	<0.0001
Occupational & financial security	-5.272**	<0.0001
Habitat security	-6.352**	<0.0001
Educational security	-6.507**	<0.0001
Health security	-7.280**	<0.0001
Social security	0.000	1.000
Environmental security	0.000	1.000

**Significantly different at 1%level of significance

CONCLUSION

The results of the study shows that average annual income of three groups were significantly changed during the last ten year period. Analysis of components of livelihood security using Wilcoxon Signed Rank test showed that farming group was different from other two groups for five components. In case of social security and environmental security all the three groups were on par. Study also found that there were significant changes in the habitat security, educational security and health security of the three groups. Social security of all the three groups was not significantly changed within the period. Environmental security of the second group was significantly different but not for other two. Hence, the study concluded that group that involved only in non-farm activities and the group that involved in both farm and non-farm activities were not significantly different in terms of livelihood security of selected respondents.

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(Contents list available at www.greenfarming.in)

AUTHORS INDEX

A

ADIVAPPAR NAGARAJAPPA	868
ADSUL P.B.	627
AGARWAL MAHESH CHAND	362
AGILA R.	1044
AGRAWAL R.K.	1406
AGRAWAL R.S.	490
AHAMED M. LAL	254, 338, 535, 541, 688
AHIR K.C.	210
AHIRWAR R.P.	656
AHMAD ISRAR	1076
AHMED N	1018
AKKAMAHADEVI D.A.	317
ALAWA S.L.	147
ALI NAFISA	1211, 1215
ALI S.A.	1317
AMBIKA V.	1280
AMETA K.D.	556
ANAND SHIPRA	1076
ANANDA N.	350
ANANTACHAR M.	242, 732
ANGADI AKSHAY	684
ANGADI CHANDRASHEKHAR	523
ANGAMI THEJANGULIE	183
ANIL B.	1381
ANITHA D.	160
ANITHA GANISSETTI	1347
ANJANAPPA M.	6
ANJU M.S.	912
ANKUSH	104
ANSHIDABEEVI C.N.	1424
ANURADHA CH.	1381
ANUSHA H.G.	715
ANUSHA M.	1174
ANUSHAT.	426
ANUSHREE	790
ARULMANI T.	1034
ARULMOZHISELVAN K.	1259
ARUNA K.T.	1161
ARUNAKUMARI H.	1138
ARUNKUMAR B.R.	576
ARYA ASHA	749, 981
ASHRAF A. MOHAMMED	330
ATAL M.K.	1089
AVUDAITHAI S.	1324

B

BABU P. RAMESH	688
BABU P. SURENDRA	1313
BABU T. RAMESH	1142
BAGUL SAMADHAN YUVRAJ	672
BAIDYA PRASANJEET	1284

BAJPAI ANJU	1076
BAJPAI YASHI	1076
BALA SUMAN	282, 1227
BALACHENNAIAH Y.	374, 668
BALAGURAVIAIAH D.	602
BALAKRISHNAN P.	1339
BALANAGOUDAR S.R.	404
BAMBHANEYYA S.M.	80
BANDOPADHYAY P.K.	1270
BANDYOPADHYAY SUBHENDU	1284
BANGA KM. SHEETAL	494
BANJARE ANJULA	858
BANSAL S.K.	622
BANU HARSHIYA	1024, 1189
BANUMATHY S.	1044
BARAHE K.K.	322
BARKER RAJASHEKHARD.	1418
BASAMMA KUMARI	1245
BASAVARAJAPPA M.P.	266
BASWAL A.K.	342
BATTH MANVEEN KAUR	1099
BEER KARMA	647
BEHERA T.K.	849
BELAVADI V.	966
BELLAD S.B.	164
BHAKAR S.R.	1351
BHALERAO JAISHREE G.	981
BHALERAO P.P.	483
BHAMBRI M.C.	109
BHANDARI H.R.	56
BHANDIGARE R.E.	814
BHANU REKHAK.	132
BHARAD S.G.	69
BHARATH T.	409
BHARDWAJ RAMESH KUMAR	296
BHARDWAJ RASHMI	172
BHARPODA T.M.	188
BHARTI NIKKI	907
BHASKAR R.N.	715
BHATT J.P.	1081
BHATT V.R.	362
BHAVANI G.	1376
BHAVE M.H.V.	1039
BHOI PRIYABRATA	60
BHUSHAN ANIL	823
BHUTIA P.H.	417
BHUVANESHWARI G.	1085, 1402
BIDARI B.I.	389, 617
BIRADAR MAHANTESH	399
BIRADAR SUMA	552
BISEN B.P.	301
BISEN RAJANI	301
BOGHRA VITTHALR.	1387
BURAGOHAJ JURI	183

C

CHABBI VITTHAL	664
CHAHAL V.P.	356, 566
CHAITANYA T.	872
CHAITHRA J.	1201
CHAKARBORTY M.	784
CHAKRAVARTY A.	1270
CHANDEL K.K.	547
CHANDRASHEKAR C.P.	473
CHANDRASHEKAR S.Y.	1421
CHANDRIKA V.	160
CHANNAGOUDA RUDRAGOUDA F.	1275, 1299
CHANNAKESHAVA B.C.	1418
CHATTERJEE R.	966
CHATTERJEE R.	1270
CHAUDHARI SUNIL	287
CHAUHAN AVINASH	237
CHAVDA N.K.	1126
CHAWLA NEENA	895
CHIKKALINGAIAH	715
CHILKAWAR P.M.	976
CHIRANJEEVI M.	1039
CHITHRAMEENAL K.	802
CHITTAPUR B.M.	1280
CHOPRA RAHUL	384, 454, 652
CHOUDHARY A.K.	784
CHOUDHARY J.	652
CHOUDHARY R.N.	1081
CHOUHAN D.	529
CHOUHAN SHELENDRA	930

D

DAHAT D.V.	322
DAHIYA K.K.	194
DALAVI PRADIP	1351
DALELA MANU	1193
DANDIN GEETA	1245
DANGI N.L.	210
DAR GOWHARA.	696
DARJI VIJAYB.	1387
DAS A.	1294
DAS ANTARA	1076
DAS ARINDAM	296
DAS M.P.	1317
DASARI SWETHA	1157
DASOG G.S.	676
DEB SUSHMA	188
DEKA BIDYUT C.	183
DEO CHANDRA	1096
DEOTALE R.O.	205
DESAI B.K.	121
DESAI K.D.	907
DESAI P.B.	266
DESAI PRACHI	156

DESAI S.A.	552	GOPINATH K.A.	852	JAIN SUDHIR	1215
DESHMUKH A.J.	214	GORE A.M.	1219	JAIPRAKASH NARAYANAR.P.	218
DESHMUKH A.M.	814	GOUDAPPANAVAR BALESH	142, 949	JAKHAR M.L.	795
DESHMUKH G.	147	GOVARDHAN G.	260, 276	JAKHAR NAVEEN	334
DESHMUKH M.M.	1219	GOWDA JAYARAME	1024, 1189	JANGANDI SHARANAPPA	1275, 1418
DESHMUKH Y.R.	178	GOWDA M.V. CHANNABYRE	1024	JASMINE K. NANCY	643
DESHPANDE S.K.	759	GOWDA T.H.	1275, 1418	JAVIYA P.P.	882
DESWAL SUMIT	692, 753	GOWDAR M.S. AYYANA	1161	JAWAKE P.D.	1393
DEVAKUMAR N.	664	GREWAL I.S.	895	JAYANTHI C.	1265
DEVI M.S.	417	GUPTA N.C.	379	JAYARAM ASHWINI	701
DEVIKA Y. SIVA	477	GUPTA PRASHANT KUMAR	930	JAYASREE G.	602
DHALIWAL H.S.	1099	GUPTA R.A.	728	JERISH JOYNER J.C.	232
DHANOJI M.M.	121	GUPTA S.K.	250, 1364	JHA A.K.	183
DHAR DOLLY WATTAL	672	GUPTA SHUCHI	1364	JHA SANTOSH	858
DHEKALE J.S.	1327	GURUMURTHY K.T.	1299, 1304	JINDAL S.K.	1364
DHIMAN K.C.	1197	GURUPRASAD G.S.	350	JOHN DEEPA	1012
DHOOT MEENAKSHI	556			JOSHI A.	306
DIKEY H.H.	69, 1335	H		JOSHI ARUNABH	33, 808, 1062
DODAMANI B.M.	164	HABIB K.	1018	JOSHI VEENA	115, 438
DODIYA N.S.	306	HADASSHA G.	25	JYOTHI T.V.	622
DUBEY R.B.	556	HADIMANI H.P.	1085	JYOTHULA D.P.B.	1029
DUDDAGI SHEELA	778	HAIDER Z.A.	784	JYOTI BHIM	1414
DUHAN SAVITA	282	HALDAVANekar P.C.	430		
DURGA D.	917	HALEPYATI A.S.	891	K	
DURGA K. KANAKA	1039	HARDAHA M.K.	147	KACHHADIYA S.P.	882
DURGE J.B.	1335	HARIKRISHNA	41	KAD P.M.	1117
DWIVEDI A.K.	1105	HARITHA T.	535, 541	KADAM U.S.	1327
DWIVEDI B.S.	1105	HEBBARA MANJUNATHA	676	KAILAPPAN R.	743
DWIVEDI NEETA	41	HEBSUR N.S.	622	KALAPPAVAR I.K.	1245
		HEENA M.S.	839	KALASARE R.S.	1122
F		HEGDE LAXMINARAYAN	1356	KALBHOR J.N.	901
FALDU P.R.	1185	HEGDE N.K.	1356	KALE V.S.	69
FATMA RABEENA	766	HEGDE SOURABHAV.	1356	KAMBLE D.R.	368, 413
		HIPPARAGI KULAPATI	142	KANDESHWARI M.	1265
G		HIRPARA B.V.	1126	KANDPAL G.	844
GADADE G.D.	413	HIRPARA D.S.	882	KANDPAL KAVITA	1339
GADHAVI B.K.	1294	HOSAMANI AKSHATA	47	KANDPAL RAMA	1414
GAIKWAD V.P.	559	HOUSALMAL S.S.	972	KANNAN M.	917
GAJBHIYE R.C.	430	HUGAR ASHOK	404	KARADI SHIVAPPAM.	1085
GALI SURESH	547	HUSAIN RAJA	20	KARCHE SAVITAA.	1410
GALLANI ROSHAN	1331	HUSSAIN SYEDAHMAD	1157	KARMAKAR N.	1270
GANAPATHI M.	399			KATKE S.D.	502
GANDHI K.D.	1185	I		KATOCH MITTU	877
GANGADHARAPPA P.M.	945	ILHE S.S.	1165	KATTIMANI K.N.	1402
GANGWAR L.K.	766	IMRAN MOHAMMAD	766	KAUR GUNNJEET	33
GANIGER V.M.	949, 1085	ISMAIL SYED	93	KAUR NIRMALJIT	895
GANJEWALA DEEPAK	1056			KAUR SOMANDEEP	756, 1398
GARG SOURABH	312	J		KAVITA K.	912
GAYITHRI M.	126	JABEEN FARZANA	1052	KENNEDY J.S.	940
GERA R.	394, 633	JADHAV P.B.	368, 413	KERKHI S.A.	766
GHANBAHADUR MANGALAR.	957	JADHAV P.D.	724	KERURE PRAKASH	47
GHOSH MAYUKH	1290	JAGADISH	498	KEWAT RAJNARAYAN	20
GHOSH S.N.	926	JAIN AKSHI	250	KHAN A.H.	819
GILL K.S.	342	JAIN D.	529	KHAN F.D.	502
GIRIJESH G.K.	886	JAIN DEVENDRA	33, 808, 1062	KHAN N.A.	20
GIRISHR.	1421			KHAN S.H.	1018
GOEL RITA	462	JAIN H.K.	1351	KHANDKAR U.R.	863
GOKHALE D.N.	413	JAIN N.K.	1180	KHATIK C.L.	306
GONDI SHRUTI	949	JAIN NEELU	1056	KHODKE S.U.	972
GOPAL K.	458	JAIN R.K.	306	KIREETI K.	1169
GOPI V.	458	JAIN S.K. (Dapoli)	724, 1406		
		JAIN S.K. (Udaipur)	486, 1370, 1393		

KIRUBHADHARSINI B. LINCY	940	KURUBAR A.R.	404	MEHTA KULDEEP	1134
KOLHE S.S.	109	KUSHWAH S.S.	1331	MHALASKAR S.R.	178
KOTA SUNEETHA	322			MISGER F.A.	696
KOTHARI MAHESH	1351	L		MISHRA DIWAKAR	172
KOTHARI SURENDRA	1211, 1215	LAKKANGOUDAR SNEHAG.	552	MISHRA GOPA	312
KOTI R.V.	833	LAKSHMI K. VIJAYA	1381	MISHRA S.P.	151
KOUJALAGI ARCHANA	945	LAKSHMI L. MUKUNDA	458	MISHRA U.S.	656
KOWSER TASMIYA	891	LAKSHMI N. JYOTHI	115, 438	MISHRA V.K.	917
KRISHNAKUMAR P.	743	LAKSHMI S.	222	MISTRY P.S.	480
KRISHNAMURTHY D.	891	LAKSHMIPATHY R.	643	MITRA N.G.	656
KRISHNAMURTHY R.	137	LAL GABRIAL M.	334	MITTAL T.C.	250, 1364
KRISHNAPPA M.	523	LAL ROSHAN	194	MOGRA RENU	1180
KUKANOOR LAXMAN	498	LAL SHIV	75	MOHANA R.	1034
KULKARNI BALAJIS.	1347	LAMBE YOGITAT.	1130	MOITRA P.K.	1067
KULKARNI S.S.	921	LATA SUMAN	312	MONDAL H.K.	394, 633
KULKARNI SHAMRAO	1280	LATHA P.C.	1048	MORDIA A.	210
KUMAR A.	844	LAVANYA G. ROOPA	37	MUDGAL V.D.	1393
KUMAR AMIT	696	LEKHI RAJESH	930	MUKUND SHIRAGUR	1347
KUMAR ARJUN	37	LEKSHMI V. ARYA	434	MUNGARE T.S.	901
KUMAR B. ASHWIN	719	LEPCHA R.	417	MURALIM.	242
KUMAR JITENDER	1227	LINGARAJA L.	772	MURTHY R. KRISHNA	612
KUMAR MANISH	849	LINGARAJU S.	218	MUTHUKUMAR M.	506, 1076
KUMAR MANOJ	684, 839	LIPANE R.R.	921		
KUMAR NEERAJ	16	LOHEKAR AMRUTA	981	N	
KUMAR NIMIT	326	LOKANADAN SUBBALAKSHMI	330	NADAF S.A.	426
KUMAR NIRAJ	784			NAGALAKSHMI S.	25, 518
KUMAR P. ANIL	1376	M		NAGALIKAR V.P.	891
KUMAR P. VIJAYA	115, 438	MADALAGERI M.B.	1085	NAGARATHNA T.K.	126
KUMAR P.R. ARVIND	966	MADANE D.A.	1327	NAGAVANI A.V.	160
KUMAR P.V. RAMA	338	MADHAVI A.	132, 409, 1152	NAGPAL AKANKSHA	1206
KUMAR PANKAJ	1414	MAHAPATRA P.	379	NAIDU A.K.	151, 346
KUMAR R.	394, 633	MAHATA DEBASIS	597, 1284, 1290	NAIK B. HEMLA	399
KUMAR R. MAHENDER	1048	MAKWANA A.D.	728	NAIK HARISCHANDRAR.	200
KUMAR R.L. RAVI	271	MALAKANNAVAR SIDDU M.	1280	NAIK K. RAMACHANDRA	498
KUMAR RAHUL	356, 468, 566, 858	MALIK JOGINDER SINGH	168	NAIK RUDRA	552
KUMAR RAJESHWAR	296	MALIK T.P.	753	NAIK S.N.	1193
KUMAR RAJESH	16	MALLESH S.B.	218	NAIK V.R.	480
KUMAR RAMESH (Palampur)	1197	MALLIK S.	592	NAKKEERAN S.	222, 940
KUMAR RAMESH (Udaipur)	556	MALOO S.R.	306, 529	NALAWADE S.M.	952
KUMAR S.	819	MANDLOI KAPIL	1223	NANDAN R.	56
KUMAR S. SHIVA	1299	MANE A.G.	724	NANDANWAR V.N.	205
KUMAR SANJEEV	907	MANE M.S.	1327	NANDEESH M.S.	399
KUMAR SUNIL	494	MANI B.R.	759	NANDGUDE S.B.	1327
KUMAR TEJ PRATAP JITENDRA	1056	MANJU M.J.	1356	NANDHISH M.S.	426
KUMAR U. SATISH	1161	MANJUNATHA M.V.	389, 676	NANDINI C.	523
KUMAR V. DHINESH	232	MANOHARAN T.	940	NANDRE B.M.	1117
KUMAR V. MANOJ	1376	MARAPPA N.	271, 701	NANJAPPANAVAR ANAND	949
KUMAR VIJAY	706	MASTIHOLI A.B.	1402	NANJAREDDY Y.A.	1189
KUMAR VIKAS	11	MATHUR S.M.	952	NARALE PRADIP	1211, 1215
KUMAR Y. PRAVEEN	87	MATIWADE P.S.	1245	NARAPPA G.	350
KUMAR YOGESH	194	MATTI M.V.	205	NAROLIA S.L.	1089
KUMARAN G. SENTHIL	736	MAVARKAR NARAYAN S.	886	NATARAJ A.	701
KUMARI A. LALITHA	477	MEENA M.K.	121	NATARJU S.P.	886
KUMARI ALKA	237	MEENA M.L.	1089	NATH DEBABRATA	863
KUMARI ANITA	282	MEENA R.H.	1308	NATH R.	1254
KUMARI CHETNA	362	MEENA S.C.	104	NATHAWAT B.D.S.	711
KUMARI MEENAKSHI	684	MEENA S.S.	1174	NAUTIYAL M.K.	844
KUMBHAR N.M.	1122	MEENA YOGENDRA	1331	NAUTIYAL NIKI	29
KUMBHARE N.V.	1424	MEHDI M.	1018	NAUTIYAL P.C.	41
KURBAH IBAJANAI	607	MEHTA A.K.	952, 1174	NAVATHA N.	571
				NAVEENKUMAR C.	242, 732
				NEGALUR R.B.	350

NEGI S.C.	877	PATIL B.S.	266	RAHEEM MI ABDUL	502
NIMBAL SOMVEER	772	PATIL CHAYAP.	498	RAI ANJALI	1056
NIRMALAB.J.	426	PATIL D.H.	164	RAI ANWESH	1284
NIRUPADI	1360	PATIL D.R.	142	RAJA DARAVATH	627
NIVETHA E.	1320	PATIL M.G.	912	RAJAMANI K.	917
O		PATIL P.L.	389,617	RAJASEKHAR M.	829
OMPASAD J.	829	PATIL P.S.	502	RAJESWARI S.	330
P		PATIL S.B.	287	RAJSHEKHAR ALAVALAUMA	639
PADARIA R.N.	1424	PATIL S.J.	483	RAM GANGA	795
PADMA M.	444, 585	PATIL S.P.	1335	RAMACHANDRAM.K.	1250
PADMAJA G.	87, 872	PATIL S.S.	404, 912	RAMALINGAM J.	802
PADMASRI A.	1381	PATIL S.T.	1327	RAMANA K.T.V.	458
PAL A.	1254	PATIL SHIVANAND	886	RAMASAMY B.D.	232
PAL A.K.	1254	PATIL V.S.	317	RAMCHANDANI DINESH	1223
PAL RANJIT	926	PATIL VAIBHAV	552	RAMEASH K.	1381
PAL SAHEB	296	PATNAIK M. CHANDINI	1313	RAMESH K.	852
PANDEY ANIL	790	PATRA S.K.	417	RAMESH T.	1071
PANDEY D.P.	326	PATTEPUR SATEESH	142	RAMGIRY MEENAKSHI	346
PANDEY PRAGYA	109	PAUL Y.S.	1233	RAMULU V.	87
PANDEY S.K.	1105	PAVAN SABBITHI	194	RAMYA KRISHNAK.	1304
PANDISELVAM R.	743	PAVANI T.	1142	RAMYA V.	1180
PANDYA M.M.	1	PAWAR ANURADHA	93	RANA B.S.	210
PANKHANIYA R.M.	1294	PAWAR R.M.	935	RANA S.S.	877
PANWAR R.K.	29	PAWAR S.N.	430	RANGASWAMY K.T.	271
PARAMESH R.	664	PAWAR V.S.	976	RANI C. INDU	743
PARMAR P.S.	1126	PILLAI M.ARUMUGAM	1034	RANI C. RADHIKA	1039
PARUL M.	1174	PITCHAIMUTHU M.	6, 47	RANI CH V. DURGA	518
PARVEEN S. ISHA	1093	POOJA N.U.	1343, 1360	RANI P. LEELA	581
PATEL A.M.	962	POTDAR M.P.	473	RANI P. PRASUNA	374, 643, 668
PATEL AFROZA	868	PRABHAKAR	523	RANI RITU	858
PATEL AVANTIKA	156	PRADEEP L.S.	886	RANI Y. ASHOKA	254, 535, 541
PATEL B.D.	559	PRADEEP T.	1381	RANIM. GIRIJA	254
PATEL D.V.	449	PRAJAPATI OM PRAKASH	930	RAO B. SRIHARI	660
PATEL DEVIDAS	1067	PRAKASH K.V.	242, 732	RAO K. JAYARJ	172
PATEL G.G.	80	PRAKASH NILMANI	16	RAO L.V. SUBBA	1039, 1052
PATEL H.T.	1117	PRAKASH R. JAYA	719	RAO M. SUBBA	688
PATEL J.J.	559	PRAKASH S.S.	576	RAO P. CHANDRASEKHAR	639
PATEL J.R.	1126	PRANEETH S.	1048	RAO P. JOGA	477
PATEL K.B.	80	PRANESH	404	RAO P.C.	872
PATEL K.C.	1294	PRASAD B. NAGENDRA	660	RAO S.S.N. MALLESWARA	660
PATEL K.G.	1185	PRASAD K.	784	RAO V. PRAVEEN	409, 602
PATEL K.K.	480	PRASAD P.V.N.	1138	RATHER J.A.	696
PATEL K.M.	962	PRASANNA RADHA	672	RATHINAKUMARI A. CAROLIN	736
PATEL KAMLESH G.	156	PRASANNAKUMARA B.H.	676	RATHOD PANDIT S.	164
PATEL KINJAL J.	1387	PRATAP D.	444, 585	RATHORE N.S.	486, 1370
PATEL M.A.	1126	PRATHIBA G.	602	RATHVA P.A.	1
PATEL M.B.	1	PRAYAGA LAKSHMI	680	RATHVA V.D.	1117
PATEL N.B.	547	PRIYANKA	454, 1308	RATTANPAL H.S.	342, 895
PATEL P.K.	962	PRIYANKA U.	736	RAVEENDRAN M.	506, 802
PATEL S.	1185	PRIYANKAR.	701	RAVI M.V.	732
PATEL SAYEED ABDULHAMID	60	PUJARI KESHAV H.	1410	RAVI P.	602
PATEL SHWETA	156	PURANE B.B.	935	RAVINDRABABU M.	829
PATEL T.T.	1081	PUROHIT H.S.	384, 454, 652, 1308	RAWAT SUBHASH	1067
PATHAN OJEFKHAN	80	PUSHPA K.	137, 612	RAY R.	417
PATIDAR D.R.	1081	PUSHPA D.S.	1402	RAYAR S.G.	1201
PATIDAR NARENDRAK.	863	PUSHPALATHA N.	6	REBECCA A. JESSIE	1313
PATIDAR ROHIT K.	863	R		REDDY B. RAJASEKHAR	56
PATIL A.D.	935	RACHAPPA V.	164, 200	REDDY B.V.B.	260, 276
PATIL B.C.	498	RADHIKA B.	701	REDDY C. KIRAN KUMAR	1093
		RADHIKA K.	1142	REDDY D. RAJI	581

REDDY D. VISHNU VARDHAN	1048	SARKAR T.	592	SHEOKAND R.N.	753
REDDY D.M.	260, 276	SARSAVADIYA P.N.	449	SHEOKAND SUNITA	282
REDDY G. ARAVIND	719	SASIKALA R.	506	SHERE D.M.	976
REDDY G. ESWARA	56	SASTRY E.V.D.	795	SHIKHAMANY S.D.	901
REDDY G.V. SRINIVASA	1161, 1339	SATASIYAA R.M.	449	SHINDE MANISHAS.	214
REDDY G.V. SUBBA	660	SATHYA S.	222	SHINDE RUPALI	749, 981
REDDY J.S. VENKATASHIVA	612	SATYA SANTOSH	1193	SHINDE V.S.	368
REDDY K. RAVINDER	1071	SATYANARAYANA P.V.	254	SHIRSAT SADASHIV	1406
REDDY K.H.P.	260, 276	SATYANARAYANARAO V.	535, 541	SHIVAKUMAR B.S.	1343, 1360
REDDY M.L.N.	115, 438, 1111, 1147	SATYAREDDI SUNIL	676	SHIVAKUMAR K.M.	1356
REDDY M.P.	56	SAVANI N.G.	480	SHIVARAJ S.	1339
REDDY N.N.	115, 438, 1111, 1147	SAVITA F.H.	833	SHIVPRAKASH M.K.	966
REDDY P. PEDDANAGI	115, 438	SAVITHRAMMA D.L.	271, 778	SHIVRAN B.C.	1089
REDDY P. RAGHU RAMI	719	SAWANT D.M.	935	SHUKLA P.S.	819
REDDY R. SUBHASH	639	SAWARKAR S.D.	147	SHYLARAJ K.S.	512, 1012
REDDY R.V.S.K.	829	SAWATE A.R.	490	SIDDRAJU R.	966
REDDY S. NARENDER	680	SAXENA MITUL	1294	SIDHU BHAWANDEEP	895
REDDY THULASIRAMIT.	389, 617	SAXENA RITUR.	11	SIDHU G.S.	1099
RELEKAR PRADIPP.	1410	SAXENA K.B.	287	SINDHU NITU	168
ROBIN S.	506	SELVARAJU P.	227	SINGH AJEET	384, 454, 652
ROHINI P.C.	1012	SETHY H.	1317	SINGH AMANINDER DEEP	326
ROY A.K. SINGHA	597	SHADAKSHARI Y.G.	126	SINGH ANILK.	647
RUDREGOUDA F.C.	1343	SHAH NARENDRA G.	1206	SINGH ANJUM.	1056
		SHAMEEM S.A.	819	SINGH ANUP KUMAR	858
		SHANTALA J.	271	SINGH BHAGWAN	356, 566
S		SHANWAD U.K.	1161	SINGH D.	529
SABALPARA A.N.	214	SHARANABASAPPA	886	SINGH DEVRAJ	1096
SABLE P.A.	921, 1130	SHARANGI A.B.	592	SINGH DHARMENDRA	607
SABOOR SHAIKH	502	SHARMA A.K.	952, 1174	SINGH DIGVIJAY	237
SAGAR G. KARUNA	1093	SHARMA AKHILESH	291	SINGH G.P.	41
SAHA ASOK	1290	SHARMA D.K.	384	SINGH G.R.	494
SAHI D.K.	379	SHARMA DHWANI	808, 1062	SINGH JAGSIR	756
SAHU B.K.	422	SHARMA GIRISH	312	SINGH KALPANA	41
SAHU HEMANT	11	SHARMA HEMRAJ	296	SINGH P.B.	808, 1062
SAHU P.K.	1270	SHARMA JYOTI	1197	SINGH P.K.	1351
SAHU SARITA	706	SHARMA L.K.	547	SINGH PRACHI	1193
SAI KUMART.	132	SHARMA L.R.	1169	SINGH PRATIBHA	20
SAIDAIAH P.	1071	SHARMA MAHENDRA	384, 652	SINGH R.N.	379, 858
SAILAJA V.	1157	SHARMA MANISH	52, 823	SINGH S.K.	468
SAIN KIRAN	462	SHARMA MUNISH	291	SINGH SANJAY KUMAR	75
SAINI A.K.	962	SHARMA NIDHI	282	SINGH SUKHDEV	756, 1398
SAINI ARTI	210	SHARMA NILESH	301	SINGH SUMIT K.	1056
SAINI K.K.	711	SHARMA O.P.	711	SINGH SWATI	379
SAJJANAR GOWRI M.	1239, 1245	SHARMA POORNIMA	1056	SINGH U.K.	16
SALIMATH SARVAJNA B.	1275, 1299, 1304, 1343, 1360	SHARMA R. RAVINDER	1169	SINGH V.B. (Faizabad)	65
SALUNKHE R.C.	1223	SHARMA R.K.	1331	SINGH V.B. (Nagaland)	183
SALVI S.P.	430	SHARMA R.P.	607	SINGH VIKRAM	104
SAMADHIYA VINAY	858	SHARMA S.K. (Palampur)	877	SINGH VIRENDRA	104
SAMNOTRA R.K.	823	SHARMA S.K. (Satna)	151	SINGH YAMUNAPRASAD	65
SANGWAN OMENDER	772	SHARMA S.K. (Udaipur)	104, 454, 1308	SINHA A.C.	597
SANGWAN R.S.	772	SHARMA S.P.	306	SIRISHA A.B.M.	338
SANKAR S. JAYASREE	434	SHARMA S.R.	250, 1364	SIROTHIA P.	656
SANKAR T. GOURI	458	SHEEBA A.	1044	SIVARAMAKRISHNAN S.	518
SANKHYAN N.K.	607	SHEEBA S.	1259, 1320	SIVASANKAR A.	444, 585
SANTHOSH B.	680	SHEHRAWAT P.S.	168	SOLANKI J.N.	882
SANTHOSH N.	1421	SHEKHARA CHANDRA	200	SOMASUNDARAM S.	1324
SANTOSH	1174	SHEKHAWAT SEEMA	486, 1370	SONANI V.V.	1122
SARADA G.	458	SHELKE T.S.	901	SONBOIR H.L.	422
SARAVANAN S.	1034	SHELKE SHUBHANGI	1335	SONI KUMAR	147
		SHENDE S.S.	814	SONI RAJJUPRIYA	877

SONPURE SUSHMAB.	1165	TANK R.V.	907	VERMA B.K.	346
SOWJANYA B.A.	37	TEHLAN S.K.	692, 753	VERMA BHUPESH	301
SPALDON SONAM	823	TEJASWINI N.	1071	VERMA NIHARIKA	1089
SPANDANA B.	25	THAKARE DIPALI	287	VERULKAR S.B.	11
SPANDANA GITTA	271	THAKARE S.H.	1219	VIDYAC.	1421
SRAN RANJEET SINGH	326	THAKARE S.K.	1219	VIDYASAGAR G.E. CH	409
SRAVANTHI P	518	THAKRE S.M.	972	VIJAYAKUMAR A.G.	266
SREEDHAR M.	1039	THAKUR RAHUL	863	VIKRAM NITIN	20
SREENIVAS G.	581	THAKUR SEEMA	1134	VINODKUMAR S.B.	41
SRIDEVI G.	1142	THERESA K.	1259	VIRADIYA M.B.	362
SRIDEVI O.	52	THIPPESHAPPA G.N.	1304	VYAS DIVYA	33
SRIDEVI S.	87	THIPPESWAMY V.	1239	VYAS TRUPTI K.	156
SRIDHAR K.	317	THIRUPATHI V.	743		
SRIMATHI P.	227	THOKAL R.T.	1327		
SRINIVAS A.	571	THORAT S.S.	178	W	
SRINIVAS C.	1381	TIKLE A.N.	287	WADILE S.C.	1165
SRINIVASA N.	576	TIWARI D.K.	147	WAGHMARE D.H.	814
SRINIVASA RAO CH.	602	TIWARI G.S.	952	WAGHMARE J.M.	1130
SRINIVASA RAOM.	688	TIWARI V.K.	728	WANI B.A.	819
SRINIVASA V.	684, 839, 1250	TRIPATHI V.K.	422	WANKHADE RAJENDRAS.	1335, 69
		TRIPATHI VISHAL	1096	WASON MONIKA	1424
SRINIVASAN J.	227	TUMBARE A.D.	98		
SRINIVASARAO S.	1152	TYAGI NIDHI	1096	Y	
SRINIVASARAO V.	254, 338, 1029			YADACHI MANJULA	473
		U		YADAGIRI JAGATI	930
SRIVASTAV MANISH	75	UGHADE S.R.	98	YADAHALLI G.S.	1280
SUBBAIAH K. VENKATA	1111, 1147	UMADEVI M.	852	YADAHALLI PRAVEEN	684, 839
SUDEEPTHI K.	1029	UMADEVI NGANGOM	194	YADAHALLI VIDYAVATHI G.	1280
SUDHAKAR P.	260, 276	UPPAL GURTEG SINGH	342	YADAV ARTI	356, 566
SUDHAKARA BABU S.N.	132	USADADIA V.P.	480	YADAV BEENA	462
SUJATA B.	523			YADAV K. ARAVINDA	242
SUMALATHA G.M.	664	V		YADAV PREETI	692, 753
SUMAN JARUPULA	1105	VADODARIA J.R.	1117	YADAV R.K.	849
SUNDARAM R.M.	518	VADODARIYA K.V.	1	YADAV RAJEEV K.	849
SUNEETHA DEVIK.B.	1152	VAIDYA MANOJ KUMAR	1169	YADAV RAJVIR	246
SUNEETHA Y.	1029	VANI K.P.	571	YADAV S.K.	1254
SUNEETHADEVI K.B.	852	VANI P. MADHU	374, 668	YADAV SATENDRALAL	356, 566
SUNITHA RANIM.	87	VANISREE S.	518	YADAV SHIKHA	468
SURENDER M.	25	VARGHESE ELDHO	1424	YASHAWANTH K.J.	552
SURENDRA BABU P.	571	VARU JAYAD.	449	YELSHETTY SUHAS	200
SURVE U.S.	98	VASHISHT VINOD KUMAR	60	YOGANANDI YAGNIK C.	246
SURYAWANSHI P.K.	1122	VASUNDHARA M.	701	YONZONE R.	417
SUTAGATTI SHWETAMARUTI	1343, 1360	VEERANGOUDA M.	732	YUGANDHAR P. RAVI	322
SUTARIA G.S.	882	VEERANNA H.K.	868		
SWAPNA K.	1052	VEERESH H.	912	Z	
SYED H.M.	490	VEGAD GAUTAM M.	246	ZINZALA M.R.	483
		VENI K.	1044		
T		VENKATESH M.N.	477		
TAKANKHAR V.G.	627	VENKATESWARLU B.	374, 668, 1138		
TALUKDAR AKSHAY	849				
TAMBI K.N.	1317				

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