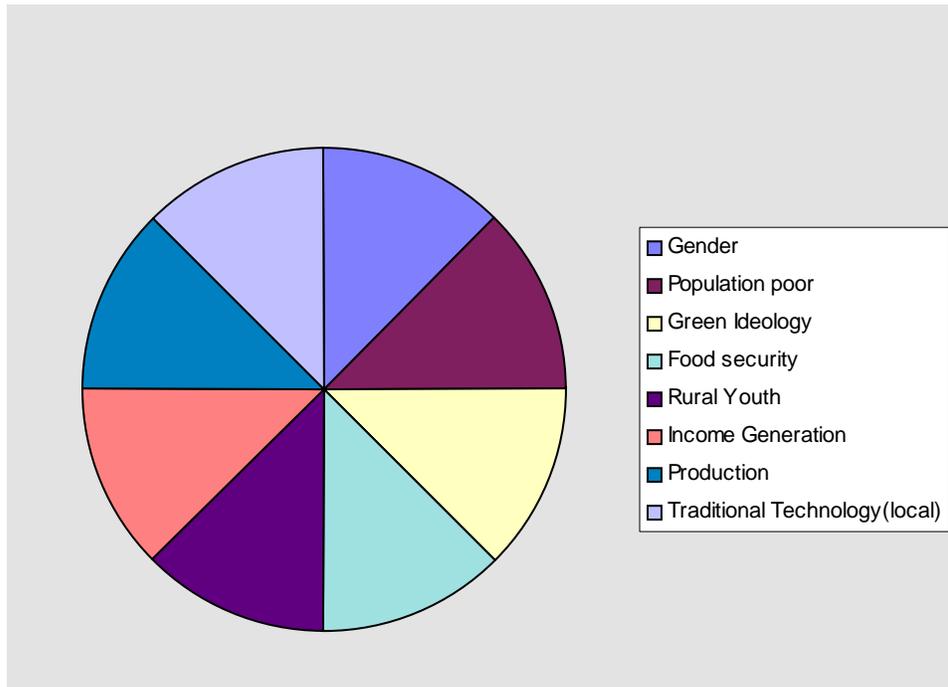


Deccan Development Society – Krishi Vigyana Kendra (DDS-KVK)

The vision of Krishi Vigyana Kendra (KVK), Medak, has been developed in consonance with the organizational ethos and philosophy of the host institution, the Deccan Development Society. This vision blends both the mandate of the Indian Council of Agriculture Research (ICAR), and the ideals of DDS. (The wheel- diagram featured below represents the different elements of this vision.

DDS-KVK Vision



GREEN IDEOLOGY

Sustainability is the key element in this vision. The DDS-KVK believes that the methods and technologies used to ensure sustainability in agriculture must be organic and environment friendly. Therefore, in all its programs and training programs, the DDS-KVK tries to develop a dialogue with the farming community about the hazards ingrained in the practice of chemical agriculture and improper exogenous market-driven farming systems, which have been usurping the socially, culturally and economically well-adapted local systems. The DDS-KVK constantly strives to explore the alternatives to the follies of the green revolution by collaborating with the institutions, which think along similar lines, and by conducting independent participatory farming research with the local farmers, to discover and unravel the treasures of indigenous technical knowledge of this region.

GENDER

It is a well-established truth today that more than 90% of farm and housework is the responsibility of women. In dry land agriculture, women carry out more than 70% of farm operations, conserve bio-diversity through various interventions, preserve seeds, take care of the livestock and are responsible for various innovations in simple farm implements and farm operations. Therefore, the main target group for the DDS-KVK's training programs is farm-women. These programs go through participatory planning to enable transfer of necessary skills to reduce the drudgery of women both at the farm and at home.

INDIGENOUS TECHNOLOGY (LOCAL)

Many development models of the green revolution school having crashed, there is a growing interest among the development practitioners and farm scientists to take a closer look at the local traditions and build new models based on the strengths of these institutions and technologies. Today, this global phenomenon has uncovered huge treasures of traditional knowledge systems. The DDS-KVK feels privileged to be a part of this new exploration of traditions and has given top priority for collection, documentation, adaptation, demonstration and propagation of vibrant traditional technologies in its research, demonstration and training.

POORER POPULATION

The target group of the DDS-KVK constitutes the socially and economically poorer sections of the rural community. This section of population has been constantly bypassed by the traditional modes of extension and information, which have in-built biases towards the rich and the influential.

Therefore, the DDS-KVK strongly believes that to make a dent in rural development, it should address all its programmes to this section of resource-poor, under-informed, socially disadvantaged groups.

FOOD SECURITY

This area is of predominantly sorghum-based cropping systems which demand less inputs, adapt to erratic rainfall and marginal and sub-marginal soils, and are also nutritionally rich.. With the introduction of market- driven cropping patterns and intensive agriculture with high inputs, local crops and food habits are changing fast. Consequently, more and more lands are going fallow, and are being left at the mercy of the vagaries of the nature. As a result, the dependence on external supply of food grains is increasing. Therefore, it is imperative to revive the situation, improve the productivity of the fallow lands and encourage the major and minor millets, along with pulses, to ensure local food security. The DDS-KVK has a major role to play in transferring the reliable and adaptable technology to increase the productivity of the soils as well as that of the crops.

INCOME GENERATION

Various farm- based and non-farm-based avocations would be a supplementary and /or the main source of income. The skills and information about these would be transferred to the farm- women and rural youth, to enable them take up such activities and to improve their income level.

RURAL YOUTH

Rural Youth are the potential, energetic and powerful force of a village, but unfortunately, in a majority of the cases, they are the most under- utilized, misguided and disillusioned group. Appropriate counseling, motivation, training and encouragement would certainly prove to be successful in moulding them as useful citizens, which would benefit the village enormously. The KVK, therefore, aims to target the youth, besides the farmwomen.

PRODUCTION

The DDS-KVK sets its sights on formulating methods, which would restore and protect the native virtues of the land through the traditional system of agriculture, while cherishing the richness and creativity of local knowledge.

PROFILE STRUCTURE OF KVK

The organisational structure of Krishi Vigyan Kendra, as sanctioned by the council consists of a Training Organiser who is assisted by a multi-disciplinary team of young scientists designated as Training Associates, who represent the disciplines of Agronomy, Horticulture, Home Science, Plant Protection and Agricultural Extension. There are three Training Assistants to help the Training Associates in different disciplines of agricultural production. They are graduates in Agriculture Engineering, Home science and Computer programming. The team of scientific and technical staff is supported by a bare minimum number of secretarial and auxiliary staff. Thus, KVK has a team of 16 personnel in all.

KVK-FARM

The institute owns a 35- acre farm at Raikode village, in addition to a 15-acre campus near Didgi village where the KVK office is located. The farm is at a distance of 30 km from the institute. The topographical features of the farm represent typical watershed lands found commonly in the region with slopes of 3 to 5%. An area of 20 acres is earmarked for crop production and the remaining 15 acres for dryland horticulture. The soil types range from gravelly and rocky soils to medium black soils with rocky sub- soil. Planting of forest and horticultural species has been taken up on the slopes.

FRONT LINE DEMONSTRATIONS IN PULSES AND OILSEEDS

KVK has taken up front line demonstrations from the year 1995-96 and has different varieties so far under oilseeds and pulses. However, these are both good and bad agricultural years in terms of monsoon and pest attack; hence the results have to be integrated in that context. In case of pulses, demonstrations were taken up in redgram, greengram, blackgram and bengalgram, whereas in case of oilseeds demonstration were taken up in sesame and safflower.

The Institute took up the demonstration activity not only to evaluate the yield, but also to examine the multiple uses of the introduced variety by way of its contribution towards soil fertility, capacity to produce varied by-products, composting ability, use as animal feed, and finally its viability in terms of the amount of management skill and inputs required for its maintenance. The additional parameters of study were: duration of the crop, and its flexibility to fit into the local cropping patterns, without disturbing the traditional methods of crop production. Considering the nature of the study, it was felt that the more appropriate name for it would be **Front line evaluation**, because of the prominent role it gave farmers in judging the suitability of a variety.

WATERSHED DEVELOPMENT PROGRAMME

Due to erratic rainfall and mismanagement of resources by the people, more and more land is becoming degraded, and its productivity is dwindling faster. To conserve the natural resources such as water; prevent soil and vegetation from getting further degraded, and to improve productivity on a sustainable scale, the watershed approach has been hailed by the local community as the most proven and effective strategy.

KVK has been acting as a Project Implementing Agency (PIA) and is involved in the implementation of twelve micro-watersheds in three mandals viz., Zaheerabad, Jharasangam and Nyalkal. A multidisciplinary watershed development team, consisting of four members has been appointed to oversee the programme.

The program concluded in the year 2002, and the number of awards it got at the district level can judge its success. In appreciation of the best work done by KVK team, The Chief Minister of Andhra Pradesh State visited watersheds on May 2, 2000.

To share its expertise with a large section of developmental planners, In 2004 KVK Team brought out a publication entitled ***Empowering people through watersheds- a case study of Edulapally***, in collaboration with District Water Management Authority, Medak

Sustainable Agriculture Program

The KVK has implemented Sustainable Agriculture Programme (SAP) with financial support from the Centre for World Solidarity (CWS) on pigeon pea crop in 2 villages, covering 71 acres and benefiting 51 farmers. The KVK has facilitated a group-training program of 2 days duration during the flowering period of pigeonpea on the KVK campus. The farmers were taught about the different Non Pesticidal Management (NPM) methods for *Heliothis* management. In addition to this practical demonstration on NSKE preparation, Tobacco decoction preparation, Cow dung plus urine solution preparation and application, Pheromone traps installation and change of lures etc. were organised, and the concepts of pest buildup as well as resistance to pesticides were pictorially explained to the farmers. A Slide-show presentation and a small video film of 10 minutes duration on previous SAP program were shown to the farmers. Two exposure visits were organised to Project Directorate on Poultry, Rajendranagar, Hyderabad, and to CRIDA – farm Hyderabad. After these visits, the farmers started local backyard poultry and vermiculture units in their villages.

INDIGENOUS TECHNICAL KNOWLEDGE

Many development models of the green revolution school having crashed, there is a growing interest among the development practitioners and farm scientists to take a closer look at the local traditions and build new models based on the strengths of these institutions and technologies. Today this global phenomenon has uncovered huge treasures of traditional knowledge systems. The KVK feels privileged to be a part of this new exploration of traditions and has given top priority for collection, documentation, adaptation, demonstration and propagation of vibrant traditional technologies in its research, demonstration and training.

The following are some of the indigenous technologies practiced by the farmers of this area and are highly valid scientifically. For the better understanding of these traditional technologies they are presented discipline wise.

AGRONOMY:

As we have seen from the earlier chapters, it could be easily understood that dry land farmers have a varied knowledge and skill in adjusting their cropping patterns, crop planning and crop practices to the changes in climate and other factors. In short, these are practices, which is Eco-friendly (ecologically safe) environmentally sounded, technologically feasible and economically viable.

We would be highlighting a few of these knowledge systems developed by them to get a brief insight into them.

The major cropping systems in wetlands are sugarcane based, while the dry land areas are dominated by jowar based cropping systems. A major chunk of the farming community

owns dry land, so the preferred system is jowar-based. The typical example of the indigenous knowledge of these farmers is critically analysed below.

Farmers take up redgram both in red and black soils. But, the farmers who do not have more land necessary for redgram crop which is a long duration crop with the idea to use the land resources to the maximum extent while ensuring protein diet for the family along with cereal food of jowar. In case of big farmers, they may not go for redgram but can go for oilseed crops like Niger and Sesamum while during rabi it will be kept fallow or keeping the land fallow during the kharif and going for chickpea/safflower slurry rabi as he very well knows that red soils with shallow depths cannot support two successive crops.

1. When we look critically at both the situations, we do realise that while the rich farmers worry only over the money they can make from the land, the small and marginal farmers think not only of their own well-being, but of the land too! In fact, they are smart, because they not only get food for themselves, fodder for their livestock, composting and roofing material, and 'bhusa' that can go as fuel, but they also help the land fix nitrogen to nourish itself through the pulse plus cereal combination. They achieve all this through their sensible cropping system and judicious use of land resources and moisture, the case when oilseeds were taken up.
2. The second clear example of the superiority of the indigenous knowledge systems of these farmers can be seen from the cropping pattern they adopt for chickpea. Chickpea is also a pulse crop, taken up both in red and black soils or in mixed black and red soils. The farmers in this region have an original way of storing and preserving the food grains against grain pests and microorganisms. The grains are usually stored in locally made seed bins, made out of fiber of vitex, and then thickly plastered with cowdung, so that they do not leak. Then they are [put out in the shade to dry.
3. In case of pulses, the seed is mixed with ash, which they perceive as a material which would absorb excess moisture and neem powder to act as antifeedent. Fresh neem leaves are also be inserted here and there to consolidate the effect. Later a big leaf or cloth or straw is placed on them to fully cover the openings. In some cases, the grains of korra (foxtail millet) are spread as a fine thin layer over the seeds, to prevent rodent and pest damage. Korra is relatively a hard material to crack. The bin is then plastered with mud, and allowed to dry. After Just before sowing, the seeds are treated with one litre of cow urine, 25g of 'Hing' and 25g of baji to protect them against pests and diseases. Wheat is treated with Jaju (a local material obtained from the earth) in the ratio of 1:25 to combat insects, and the same ratio is maintained in the case of chickpea, to fight wilt.

The farmers normally resort to multiple cropping in which chickpea is the main or base crop. The intercrop is mostly safflower (a minor oil seed crop). The sowing of these crops is done from mid October to the end of October, which is a conjunctive period of receding of south west monsoon and initiation of north east monsoon, thereby ensuring

the maximum use of receding soil moisture and the moisture from the occasional showers due to north east monsoon. The crop combination consists of chickpea, a major pulse, and safflower, a minor oil seed crop capable of growing on residual soil moisture and which comes up very well in marginal soils. Besides these two crops, linseed is grown as a border crop, which helps in stopping the physical movement of (larvae from one field to another. Jowar is sown in mixture and can be seen here and there, which besides contributing marginally to the yield, would also harbour chrysopa, the egg parasite of Heliothis. Coriander, a spice crop is grown in sparse lines in chickpea fields as a trap crop for Heliothis. Thus, this judicious combination, besides, ensuring food security, would also mitigate the threat of crop losses mostly seen in the case of mono-crop cultivation. The multi-crop system provides a variety of nutrients, apart from helping combat the menace of the dreaded pest, Heliothis. This will definitely improve the economy of the farmers.

ANIMAL HUSBANDRY:

India is predominantly an agriculture-based country with 70% of its population directly or indirectly depending on agriculture. Livestock plays a crucial role in rural economy, as agriculture and livestock are interdependent on each other for inputs. Like human beings, animals not only need protection from certain diseases but also proper health care and management.

Prohibitive cost, inaccessibility and other problems associated with present day animal health care systems necessitate rediscovery of the traditional wisdom of animal health care systems.

It is already established that ethno-veterinary knowledge system, based on local resources and strength can most effectively become a low-cost, safe alternative animal health care system. But unfortunately these practices are seldom documented and since ages they have been passed on from generation to generation through oral communication.

To prepare a package of simplified and effective traditional veterinary treatments for this region, an attempt is being made to collect, validate and document the same.

Details of 183 treatments for 25 disorders of animals have been collected through personal interviews, discussions and meetings with local healers and livestock owners.

COLLECTION OF ETHNOVETERINARY MEDICINES

S. No.	Name of the disorder	No. of Ethnoveterinary Treatments collected
1.	Anorexia	13
2.	Aglactia	06
3.	Anoestrus	06
4.	Constipation	07
5.	Cold & cough	14
6.	Diarrhoea	23
7.	Difficulty in urinating	06
8.	Eye diseases	08
9.	Ectoparasitic infestation	11
10.	Endo parasitic infestation	07
11.	Epistaxis	02
12.	Foot and mouth diseases	09
13.	Fever	10
14.	Gangrene	01
15.	Haemorrhagic septecimia	01
16.	Mastitis	10
17.	Prolapse of uterus	01
18.	Pox lesions	02
19.	Retained placenta	07
20.	Swelling	04
21.	Scabies(Mange)	05
22.	Tympany	20
23.	Burn wound	01
24.	Dog bite wound	02
25.	Maggoted wound	07
	Total	183

Different treatments for various diseases are in the process of validation. The following are some examples of treatments collected from the villagers for various diseases, and are in the process of scientific validation.

DIARRHOEA:

TREATMENT -1

a). Ingredients :

<u>Local name</u>	<u>Botanical name</u>	<u>Part of plant</u>	<u>Quantity</u>
Tellapulicheri	<i>Securinnaga robovates</i>	Leaf	Handful
Perugu	Curd	--	250ml.

c). Medicine preparation: Extracted juice from *Securinnaga robovates* leaves mixed with curds

d). Dosage: Two times a day for two days.

TREATMENT -2

a). Ingredients:

<u>Local name</u>	<u>Botanical name</u>	<u>Part of plant</u>	<u>Quantity</u>
Danimma	<i>Punica granatum</i>	leaf	200grms.

b). Medicine preparation: *Punica granatum* leaf powder should be prepared..

c). Dosage: Two times a day for two days.

TREATMENT -3

a). Ingredients:

<u>Local name</u>	<u>Botanical name</u>	<u>Part of plant</u>	<u>Quantity</u>
Jama	<i>psidium guajava</i>	leaf	100grms.
Tellapulicheri	<i>Securinnaga robovates</i>	leaf	100grms.

b). Medicine preparation: Juice extracted from *Securinnaga robovates* and *Psidium guajava* leaves can be mixed with jaggery, water or curds.

c). Dosage: Once a day.

TREATMENT -4

a). Ingredients:

<u>Local name</u>	<u>Botanical name</u>	<u>Part of plant</u>	<u>Quantity</u>
Egitaku	<i>Bombusa spinosa</i>	leaf	handful

b). Medicine preparation: *Bombusa spinosa* leaf fed to the animal.

c). Dosage: Once a day for two to three days.

AREAS OF RESEARCH

◆ Farmers' knowledge movement for traditional veterinary practices in rural Medak of Andhra Pradesh State of India.

It has been observed that the ethno-veterinary system is the most suitable animal health-care system, because it is based on local resources and strengths. However, these time-tested local practices have suffered neglect for lack of attention. No study has been made to establish their scientific efficacy, because most knowledge in this subject is passed on orally from generation to generation. Hence, an attempt is being made to collect, validate and document the traditional folk medicine to prepare a package of simplified and effective veterinary treatments for this region.

◆ Economics of ecological agriculture

In its most developed form, ecological farming is both a philosophy and a system of agriculture. The objectives of environmental, social, economic sustainability and dry land agro-biodiversity conservation lies at the heart of Eco farming. Eco farming is a form of mixed cropping system still prevalent in dry land soils of Zaheerabad taluk of Deccan plateau. Although the rainfall of the region ranges from 850 to 1100mm, crop failures are quite common due to aberrant weather conditions such as prolonged dry spells, rains at harvest time etc. To overcome these problems, small farmers practice a system of agriculture with 12 or more traditional crops and follow organic farming methods on their small land holdings, which are a blend of ethics, traditional experience, scientific knowledge and pragmatism. Their production systems are more ecologically sound and economically remunerative than conventional mono cropping and chemical agriculture with hybrid varieties. This study was undertaken by Deccan Development Society to investigate how some farmers on their land maintain the bio-diversity of the region, and to assess the economic viability of their practices before promoting them among other farmers.

◆ Peoples' perceptions on food and nutrition

Peoples' perceptions on food and nutrition study provided an opportunity to understand and document their knowledge on food and nutrition. Many local foods, crops, cultural factors, the role of festivals in providing food and nutrition security were analyzed and documented.

◆ Documentation of traditional food systems of dalit in Zaheerabad region

The information on traditional Dalit food is very rich. The documentation is complete with 317 foods, and some greens need nutrient analysis, which was carried out at the National Institute of Nutrition, Hyderabad. The dietary data to show the impact of traditional food was recorded and the analysis is in progress.

♦ **Documentation and preservation(*insitu* and *exsitu*) of local Mango germplasm of Zaheerabad region**

Diversity with respect to agro-morphological and quality mango is enormous in Zaheerabad region. Many villages of Zaheerabad are dedicated to Mango legends. Presently, however, most of mango varieties are becoming extinct. Bearing this in mind, this study was taken up to document and preserve these highly valuable mango varieties.

S.NO.	VILLAGE	MANGO VARIETY		
1	RANJOLE	1. GOVA		
		2. MAGAN MASTU		
		3. KALA PAHAD		
		4. SENDURA		
2	SHEKAPUR	5. ELACHI		
		6. DUDIYA		
		7. NAGPURIKOMMU		
		8. SURMADANI		
		9. KOTHIGUDDA		
		10. DOSAKAYA		
		11. TARAMANDAL		
		12. NALLAMAMIDI		
		13. GOLA		
6	KHANAPUR	14. NARIYALTHUKADA		
		15. KOPRAMITTAI		
		16. MADUGULAMAMIDI		
		17. KALAJAMUN		
		18. BATHASA		
		19. SUFEDA		
		20. SHAMRUGUAH		
		21. THELLAMAMIDI		
		22. BANDENAWAZ CHAKLA		
		23. KAMMRIRISAL		
		8	RAIPALLY -D	24. NARANGI
				25. BUNDI
		9	CHINNA CHELMEDA	26. NALLAMAMIDI
				27. KUMKUMMAMIDI
10	PEDDA CHELMEDA	28. BARFI		
		29. LALGOLA		
11	KAMPLALLY	30. SHAIDUDIYA		
		31. DULHA		
12	RUKMAPUR	32. DULHAN		
		33. LALKHATRI		
13	MIRJAPUR-B	34. IRSAL		
		35. RAJAPASAND		
14	RUKMAAPUR JAGIRDAR	36. KISANPASND		
		37. JELEBI		
15	DIGWAL	38. PARI		
		39. THAMPALLY CHETTU		
16	THUMKUNTA	40. GOVABANDER		
		41. NALLAMAMIDI		
17	ZAHEERABAD N.H.-9	42. LALPARI		
		43. KALIAMI		
18	MUKHIMBAGH	44. GAJAR		
19	POTPALLY			
20	ELGOI			
21	GUNJOTI			

22	PATLUR	45. RAJYABCHITA
		46. KATSAMBAL
23	RAMTIRD	47. MODINAMMA CHETUU
24	Bapanpalla	48. HUSENI
		49. ABBASI
25	SHADIPUR	50. ARZUMSAMAR
		51. QUASHQUSHI MALGOBA
		52. KHURPI
		53. KALINEELAM
		Total varieties -53

◆ **Impact analysis of dry land natural resources management.**

The dry land natural resources management project was conceived by DDS during 2001 with support from FYF, in collaboration with DFID, UK. The identified areas of natural resources management are increasing the production of manure; organic fertilisers at household level in the form of vermicompost, biomass, the genetic resource base of rainfed crops, and the improvement of medicinal commons and wasteland plantations. Apart from all these, a knowledge base has been built up to help farmers meet adverse conditions with timely interventions.

The impact analysis was carried out to learn and to communicate the lessons learnt to policy makers and funders in the areas of natural resources management.

◆ **Farmers' Practices / Indigenous Knowledge on Food production and Storage**

The study aims at learning and documenting of various storage methodologies, storage structures and protectants used in storage. The storage is done for both seed and food.

The crops selected for study:

Cereals: Finger millet, Foxtail millet, and Little millet, Kodo Millet, Pearl millet, Proso millet and Sorghum.

Pulses: Bengal gram, Black gram, Cowpea, Field bean, Green gram, Horse gram, Lathyrus, Lentil, Peas and Redgram

Other Foods: Shelf life less than 3 months.

Objectives:

In seed:

1. To document storage methodology including Protectant materials used.
2. To document indigenous storage structures with the following information-
 - a. Materials used
 - b. Life span
 - c. Cost involved
 - d. Skills available
 - e. Capacity

f. Protectants (with respect to structure and material stored)

In food preservation:

1. Raw and Processed (confined to the cereals and pulses selected for the study)
2. Cooked and/or Preserved
 - a. Ready to eat (eg. Pickles)
 - b. Ready to Cook (ex. Papads etc)
3. Methodology followed
 - i. Ingredients
 - ii. Process (Plant to Pot)
 - iii. Utensils used
 - iv. Shelf life.

KRISHI – a magazine for sustainable agriculture (quarterly news letter)

KVK is publishing a quarterly news - letter called **KRISHI**, which provides an opportunity to reach out to large sections of farmers and scientific and extension communities in propagating sustainable agricultural practices.

Each issue is devoted to a specific theme to get a deeper under- standing of the concept. The magazine has a special serial on traditional practices in Agriculture and Animal Husbandry.

PAPERS AND PUBLICATIONS

S. No	Title	Year	Mode of publication	Authors
1	Deoni Cow	1996	Folder	Dr.Khan Shaheen Hamed
2	Osmanabadi Doe	1996	Folder	Dr. Khan Shaheen Hamed
3	Iodine In Diet	1996	Leaflet	B. .Salome Yesudas
4	Farmers Knowledge Movement For Traditional Veterinary Practices In Rural Medak of A .P.	1997	Manual	Dr. Khan Shaheen Hamed
5	Field Manual On Horticulture Crops	1998	Manual	Dr. Vijay Kumar
6	Vermicompost	1999	Book let	B. Suresh Reddy
7	Organic Compost	1999	Book let	B. Suresh Reddy
8	Nursery Growing & Plantation Techniques	1999	Book let	V. Vinod Goud
9	Field Realities of Watershed Guide Lines.	1999	Book let	V. Vinod Goud
10	Empowerment Of Women Through SHGs	1998	Article	B. .Salome Yesudas

11	NPM on Heliothis in pigeon pea	1998	Article	L .S .Kashyapa
12	NPM-Way Of Achieving Food Security	1999	Article	B. Suresh Reddy
13	Uncultivated food and the poor	2000	Article	PV Satheesh & B. Suresh Reddy
14	Uncultivated Greens	2001	Article	B. Suresh Reddy B. salome yesudas
15	Mana aaharam oka aalochana	2002	Leaf let	B. Salome Yesudas
16	Uncultivated foods potential realised	2003	Poster	P V Satheesh & B. Salome yesudas
17	Our food culture	2003	teaching notes	B. Salomeyesudas Dr. K Gurava Reddy
18	Empowering people through watersheds-a case study of Edulapally	2003	Book	B. Salomeyesudas Dr. K Gurava Reddy G. Chandra sekhar