



Research Paper

**IMPACT OF RECENT AGRICULTURAL PRACTICES ON FOOD SAFETY
AND HUMAN HEALTH – A CASE STUDY IN ARMOOR MANDAL OF
NIZAMABAD DISTRICT**

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INTRODUCTION

Good Agricultural Practices (GAP) are practices “that address Environmental, Economic, and Social Sustainability for on farm processes and result in safe and quality food and non-food agri products” (FAO CAOG 2003 GAP Paper). These four pillars of GAP (economic viability, environmental sustainability, social acceptability and food safety and quality) are included in most private and public sector standards, but the scope which they actually cover varies widely. Indian farming needs to be commercialized in order to maximize farm income and for which we need to meet quality standards and demands in national and international market.

Along with the globalization, dramatically changing economy, new inventions in food science and technology and changing pattern of food consumption, some new contaminants, toxins and additives, physical, chemical and biological hazards have also emerged resulting in huge health risk of the consumer. FAO and WHO came up with certain quality standards, which are a decade old now. Indian farmers and as well as the stake holders are yet to be familiar with these measures and standards that can help them gain consumer trust and reputation in international market and also to avoid the non-tariff barriers set by WTO. Major challenge with Indian context at present is creating awareness about GAP among the farmers, stakeholders and also retailers. The compliance with food safety practices applicable at the farm level is not very encouraging.

In India, Bureau of Indian Standards (BIS) has taken initiatives to develop its own standards to be followed by institutions and companies, etc. The draft Indian Standard Good Agricultural Practices – India GAP (Part 1- Crop Base) takes into account not only the quality and quantity of the crop obtained from a unit area but also the care and attention gone into integrating pre-harvest practices like soil & water management,

nutrient management and pest management, harvesting, post-harvest handling and other logistics (Anon, 2008). The objective is to ensure food safety, occupational health/safety/welfare, and wherever possible, animal welfare. The entire operation is intended to make farming practices environment friendly. For the purpose of verification, a graded pattern shall be followed for grant of India GAP licence:

Survey on Good Agricultural Practices Carried out at Armour Mandal of Nizamabad District

Armour or Armur is a town and a Mandal in Nizamabad district in the (state of Telangana). Armour is situated on NH-7 (Hyderabad-Nagpur) and NH-16 Nizamabad-Jagdapur). It is also known as Navanathapuram and it is one of the major town in Nizamabad district. Armur is Mandal HQ in Nizamabad Dist. Popular place like Srirama Sagar Project is located at 30 kilo meters away from Armour and the model village of India Ankapur is 5 kilo meters away from Armour town. Armour Mandal is known for its progressive agricultural mainly horticultural practices. **Ankapur** village is considered as one of the model villages in the country due to an overall development in general and agricultural development in particular. It is recognized as a **MODEL VILLAGE** by the ICAR, ICRISAT and the International Rice Research Institute.

Similarly, villages like Issapalle, Govindpet are also famous for the agricultural practices. Hence, a survey was conducted with the help of students of B.Sc. (BZC & MBC) in the Month of January and February 2015 to assess the awareness level on the GAP in the Armour Mandal. The Questionnaire of the survey was based on the India GAP (Part 1- Crop Base) of Bureau of Indian Standards (BSI).

		Armour					Manthani					PIPRI					KOMMAN PALLY					Govindpet					Issapally									
I	Site Selection	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5
1	Is site free from toxic elements such as industrial wastes and effluents?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	Water availability : Is site having access to reliable source of irrigation water?	1	0	0	0	0	BW	1	1	1	1	1	0	1	1	1	1	0	1	0	1	1	1	0	1	1	1	1	0	1	1	0	1	1	0	1
II	Soil Conditions /Management																																			
3	Has the soil	1	0		1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0

8	Whether irrigation water is required to conform to standards of heavy metals and residual pesticides?	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
III	Seeds and Propagation Materials																																	
9	Do seed/planting material accompanied with the following information:-																																	
	a) Name, nomenclature and trade name)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	b) Botanical name	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	c) Variety?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	Are the seeds chosen for cultivation purposes physically free from pest, diseases, weeds and foreign and inter matter?	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IV	Sowing and Transplan																																	

17	Parameters used to accept or qualify the manure in case source is from outside?	1 1	
18	If organic manures are used and whether nutritional requirements of the targeted crops is known or not?	0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0	
19	Are manures tested for nutrient present?	0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0	
20	Whether manures are tested for presence of Heavy metals?	0 0	
21	Are manures stored in a clean and safe place?	1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 0 1 1 1 1 1 1 1 1	
22	Are manures, pesticides, insecticides stored at one place?	0 0 0 0 0 1 1 1 1 1 1 1 1 0 1 0 0 0 0 0 0 0 0 0 0	
23	According to targeted crop which manure - vermi-compost,	V B V V B B B B V V V B B V V B B V V B V V B V V C F C C F C C C F C C C C C	

35	If chemical pesticides are used, then whether label direction in terms of dosage, crop, canopy, time of application, waiting period are followed?	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
36	whether integrated pest management protocols are followed as recommended by Govt. Agencies?	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37	Is crop protection plans limited to the use of bio-control agents and bio-pesticides?	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
38	When chemical pesticides are used, whether care is taken to use smallest effective dosage of pesticides?	1	0	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0

growth. No farmer has tested or analysed the water for its quality like salt concentration, sodium absorbing rate, presence of bicarbonates, boron etc. Water was also not analysed to check the presence of heavy metals and pesticides in the water supplied to the crops.

Weeding and Intercultural Operations

For weeding purpose most of the farmers were using chemical insecticides during the initial period of crop as well as in the later stages. No farmer used bio-control methods to control the weeds.

Crop Protection

Most of the farmers were using the chemical pesticides for the crop protection. Only about 10% if farmers are using the bio-pesticides or Bio-control methods for the eradication of the pests. No farmer knew the use of smallest effective dosage on the basis of crop protection protocol. No farmer had ever gone for residue analysis when chemical pesticides were used for crop protection.

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