

**AWARENESS OF CHILLI (*CAPSICUM ANNUAM* L.) FARMERS ON SAFE  
USE OF PESTICIDES: A CASE OF CROP LIFE INDIA (CLI) PROJECT  
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**ABSTRACT:** A survey was conducted in six villages in three mandals viz., Tadikonda, Medikonduru and Pedanandipadu in Guntur district of Andhra Pradesh. All the 150 chilli farmers participating in Crop Life India (CLI) sponsored safe use of pesticides and Integrated Pest Management project were taken as sample for the study. It was expressed all the respondent farmers purchasing pesticides from authorised dealers. It was observed from the responses that all the respondents used face/nose mask and about 80 per cent used head dress. No one used hand gloves and shoes. It is interesting to note that no one used recommended personal protection equipment. Recommended personal protection equipments (PPEs) were not used by the farmers but expressed strong desire to use them if available at affordable cost and fit to local environment. Regarding the disposal empty pesticide containers 50 per cent of them bury these in the field and rest are either buried or crushed and thrown in the field. Re-use of empty pesticide bottles was not in practice. About 80 per cent of the respondents used Taiwan sprayers. About 82 per cent of the respondents took bath and 74 per cent changed clothes after spraying pesticide and 82.67 per cent were aware of the colour triangle indication on the pesticide bottles. About 53.33 per cent expressed that they have knowledge on upkeep of the sprayers.

**Key words:** Safe use, Pesticides, Crop Life India

**INTRODUCTION**

Kumaraswamy (2008) expressed that around Rs.1,40,000 crores worth agriculture produce was lost every year to pests, due to non and inadequate use of pesticides. This is enough to feed one-fifth of the population of the country for one full year. Concerned about the food crisis, Mr. Salil Singhal, MD, PI Industries reasons, expressed that our food production is not keeping pace with population growth, causing serious concerns about National food security. If pesticide usage can be increased from the current 20 per cent of the cropped area, it would be possible to save this huge economic loss (Rs 1, 40,000 crore), and increase farmers' income through higher yields, as the cost benefit ratio of pesticides is about 1:5. Dr. R.B. Singh, renowned Agrl. Scientist opined that India, with 16% of global population and the cultivated area, accounts only for 3% of the global consumption of pesticides. If pesticides usage is increased, it not only save these losses, but additional income could be generated through higher yields. But on the other side, study conducted by Kheti Virasat has brought to light that excessive uses of chemical pesticides by the vegetable growers in Malerkotla area in Sangrur district in Punjab have lead to reported cases death due to cancer, genetic defects and various types of serious ailments. Not surprisingly, the issue of indiscriminate use of chemical pesticides in Punjab and Andhra Pradesh was discussed in the British Parliament during that time (Financial Express, 2004). During the last two decades chemical control of chilli pests in general and irrigated crop in particular has posed problems of residues in the fruits (Nandihalli 1979 and Joia et al., 2001). Excessive usages of pesticides lead to pest resurgence, insecticide resistance and destruction of natural enemies (Mallikarjuna Rao and Ahmed, 1986). Both domestic consumption and export of chilli necessitates production of quality chillies devoid of contamination of pesticides, industrial chemicals and aflatoxins. Keeping this in mind, safe use of pesticide programme was organised for creating awareness on pesticide among farmers.

## Why Guntur district?

Andhra Pradesh consumes about 22.5 per cent of the total pesticides produced and marketed in India. Guntur district tops in the state with consumption of pesticides worth Rs 450 and 500 crores, during cropping seasons 2001-02 and 2002-03 respectively. Of this, major consumption is in two major commercial crops i.e., cotton and chillies (Crop Life India, 2005). The pesticide consumption is going down in cotton with the introduction of Bt cotton but not in case of chilli. Many a times, the dry chilli exports from Guntur market were rejected because of pesticide residue problem. Hence, the need for such a project in Guntur district was felt.

The safe use of pesticides project was implemented in Guntur district during the cropping season 2006-07 in six villages of Guntur district viz., Mandapadu, Visadala, Bandarupalli, GG Palem, Ravipadu, Gogulamudi. The project was supported by Crop Life Asia. The project was implemented with specific objective of Educating chilli farmers of selected villages on safe and judicious use of chemical pesticides by bringing awareness on use of safety gadgets while handling and spraying pesticides

The present study was conducted to know the extent of adoption of safe measures in use of pesticides following the above project.

## MATERIALS AND METHODS

### A. Area of study and sampling

All the six villages in Guntur district viz., Mandapadu, Visadala, Bandarupalli, GG Palem, Ravipadu, Gogulamudi where the project activities carried out were selected. Twenty five participants of Crop Life India (CLI) project were selected from each village adding totally to one hundred and fifty farmers from six villages.

### B. Data collection and statistical analysis

A questionnaire was developed for the purpose was used for the survey. The questionnaire was translated into Telugu and was used for collecting responses from the project farmers. The data were collected from the respondents through personal interview with the help of interview schedule. Necessary precautions were taken to ensure that the questions in the schedule were unambiguous, clear, concise, complete, and comprehensive. The respondents were contacted in person mostly at the common place in the village. The assistance of the local CLI project was availed to establish rapport with the respondents. The data collected for the study was tabulated, processed and analysed using simple statistical tools like frequency and percentage.

### C. Confirmation of results with the respondents:

In order to have more realistic opinion, a selected group of 20 respondents representing six villages along with the coordinators of the project were called to Regional Agricultural Research Station (RARS), Lam and were presented with the results analysed and concurrence was obtained from the respondents

## RESULTS AND DISCUSSION

### A. Scheduling of pesticide sprays

The project participant farmers were spraying about 17.06 times during crop period. On an average once in 10.65 days spraying has been done on the chilli crop.

### B. Status of purchase and store of pesticides

A good sign was observed that all the respondent farmers are purchasing pesticides from authorised dealer only (Table 1). Another interesting development was 92.67 per cent of the respondents reading the packing slip attached on the pesticide bottle and about 89 per cent of them keeping the pesticide in store room and others also storing in the living room. But during discussions it was expressed that who are storing in the living room also keeping the bottles on sunside (near to roof) which beyond the reach of children and pet animals.

Table 1: Status of purchase and store of pesticides

S No	Item	Activity	Responses in percentage
1	Purchase Pesticides	Authorised Dealer	100.00
2	Store Pesticide in	Living House	12.00
		Store Room	88.67
3	Pesticides-Packing	Reading	92.67

### C. Status of recommended personal protection equipment (PPE) use

It was observed from the responses that all the respondents were using face/nose mask and about 80 per cent are using head dress (Table 2). No one used hand gloves and shoes. It is interesting to note that no one used recommended personal protection equipment. The turban/towels were used as face/nose mask and head dress. But everybody expressed desire to use the recommended PPE but the availability was a big problem even on payment of cost and the PPEs' made available to few farmers by pesticide firms were said to be not fit to this climate as results in heavy sweating. Hence, earlier attempts to adopt the protective dresses were failed. If the pesticide industry provides suitable PPEs at affordable price farmers expressed their desire to use them.

Table 2: Status of recommended personal protection equipment (PPE) use

S No	Item	% of respondents used
1	Face/Nose mask	100
2	Head dress	83.33
3	Hand gloves	0
4	Shoes	0

### D. Status of safe handling of pesticides

All the respondents were mixing the chemicals using stirrer that is nothing but a stick of locally available and rinsing the empty containers and 96 per cent of them used the measuring cylinder for making an accurate dosage of spray fluid (Table 3). About 10 per cent of the respondents still resort to drink water/eat/smoke during spraying in spite of repeated advices.

Table 3: Status of safe handling of pesticides

S No	Item	Responses in percentage
1	Measuring cylinder	96.00
2	Mixing with stirrer	100.00
3	Drink/eat/smoke	10.67
4	Rinse empty container	100.00

### E. Status disposal of empty pesticide containers

Regarding the disposal empty pesticide containers 50 per cent of them were burying in the field it self and rest either bury or crush and throw in the field (Table 4). No one is reused the empty containers. The reasons expressed during discussions were quiet interesting to note that present day chemicals are available in small bottles in highly concentrated forms (50ml, 100ml etc), hence they are of no use in daily routines and other factor was the repeated advice from the CLI staff and other extension functionaries.

Table 4: Status disposal of empty pesticide containers

S No	Item	% of the respondents
1	Re-use	0
2	Field	16
3	Burn	50
4	Bury	34

### F. Type of Sprayers used by the respondents

About 80 per cent of the respondents used Taiwan sprayers and the rest used akela sprayers (Table 5). This is mainly because in recent year's government supplied Taiwan sprayers on subsidized rates to all the interested farmers which was facilitated by the CLI staff very effectively.

Table 5: Type of Sprayers used by the respondents

S No	Item	% of respondents
1	Taiwan sprayer	78.67
2	Akela sprayer	18.67
3	Power sprayer	1.33

### G. Status of respondents on cleaning of sprayer for reduced environmental pollution:

A good social responsibility observed from the results that more than 80 per cent of the respondents not used common canals for cleaning sprayers which otherwise a great source of water pollution (Table 6).

Table 6: Status of respondents on cleaning of sprayer for reduced environmental pollution

S No	Item	% of respondents
1	Canal	19
2	Fond	81

### H. Knowledge on maintenance sprayers

About 53.33 per cent expressed that they have knowledge on upkeep of the sprayers (Table 7). 100 per cent expressed that generally wire used to remove obstacles from nozzles and in case of Taiwan sprayers' normal water used sprayed after chemical spray in the field to remove obstacles. About 82 per cent of the respondents took bath and 74 per cent are changed clothes after spraying operation performed and 82.67 per cent aware of the colour triangle indication on the bottles. Many expressed that even while contract spraying persons hired also they insisted on changing clothes some of them will offer old clothes and insist not to smoke/drink/eat during spray. Regarding first aid only 36.33 per cent respondents had the knowledge. Health problems expressed by very negligible per cent and many expressed that new generation chemicals do not cause health problems.

Table 7: Knowledge on safe use of pesticides

S No	Item	% of the respondents
1	Upkeep of sprayers	53.33
2	Removal of obstacles from sprayer nozzles	100.00
3	Wash hands after sprayers	100.00
4	Take bath after sprayers	82.00
5	Change cloths after sprayers	74.00
6	Health problems if any	16.00
7	First aid knowledge	36.33
8	Colour triangle knowledge	82.67

## SUMMARY AND CONCLUSIONS

- All the respondent farmers purchased pesticides from authorised dealers only
- Recommended personal protection equipments (PPEs) not used by the farmers but they had strong desire to use them if available at affordable cost and fit to local environment.
- Re-use of empty cylinders was not in practice
- About 80 per cent of the respondents were using Taiwan sprayers
- About 82 per cent of the respondents took bath and 74 per cent changed clothes and 82.67 per cent were aware of the colour triangle indication on the bottles.

There was a unanimous agreement among the respondents regarding the benefits from CLI project, good suggestions from CLI staff and continuation of the CLI project in their villages. This was observed even from the non-participant farmers also while discussions during data collection time.

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