Profile, Environmental and Health Perceptions of Farmers in Cattubo, Atok, Benguet

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- Decades of chemical farming and increasing demand for highland vegetables
- Increasing amount of pesticide residue (PR) found in temperate vegetable crops and soil
- Alarming presence of contaminants/pollutants in what is believed to be pristine and clean water sources (Gomez et al., 2008)

Significance of the Study

- Highlights the impacts of chemical farming by providing awareness to the stakeholders on the increasing levels of pollutants in soils, water resources, crops and flora
- Increase the farmers' awareness on the adverse effects of inorganic farming to the environment and human health
- Looks into the potential of herbaceous weeds and woody plants in the area for phytoremediation

Significance of the Study

- A realization to contemplate and hopefully try more environmental friendly practices to safeguard human and environmental resources
- Seeks to give importance to and elevate the role of basic researches in the natural sciences to a more lofty position
- Contribution to the realization of the goals of sustainable development



The research project seeks to conduct the following:

- Establish a profile of farmers and pesticide application practices in crop production
- Document the farmers perception on the damage to the environment and human health

Framework of the Study



Figure 1. Dynamics of the soil, biota and pesticide residue fate and pathways (mobility) and perceptual views of farmers of the resultant processes



- Development of the survey questionnaire
- Pre testing the questionnaire
- Sought permission from LGU to conduct study in the area (municipal and barangay)
- Statistical analysis of data using descriptive and inferential statistics



Socio-demographic profile

Table 1. Mean and standard deviation of farmers' age, farming experience, and number of years using pesticides

Characteristics	Mean	Standard deviation
Age (yrs)	43.08	13.65
Farming experience (yrs)	23.92	14.90
Number of years using pesticide (yrs)	22.76	14.31
Farm area (ha)	0.57	0.51

Table 2. Household characteristics, education, pesticide use and

practices

Characteristics	Frequency (n=25) Percentage	
Sex		
Male	21	84
Female	4	16
Total	25	100
Education		
No formal Education	0	0
Primary Education	10	40
Secondary Education	10	40
Vocational	1	4
College	4	16
Total	25	100
Land Ownership		
Owned	19	76
Rented	6	24
Total	25	100

Disposal method	Frequency (n=25)	Percentage (%)	
Return to Chemical	3	12	
companies			
Burying in the field	12	48	
Litter in field	16	64	
Burning	ng 9 36		
Mix with garbage	1	4	
Applicator	Frequency (n=25)	Percentage (%)	
Knapsack sprayer	25	100	
Power sprayer	5	20	
Number of cropping	Frequency (n=25)	Percentage (%)	
per Year			
1	0	0	
2	9	36	
3	16	64	

Table 3. List of pesticides used (multiple answers)

Trade name	Class of Compounds	Active ingredient	Туре	Frequency (n=25)	Percentage (%)
Siga	Organophosphate	Chlorpyrifos	Insecticide	10	40
Lorsban	Organophosphate	Chlorpyrifos	Insecticide	7	28
Sumicidin	Pyrethroid	Fenvalerate	Insecticide	7	28
Success	Spinosyn	Spinosad	Insecticide	6	24
Pennant	Organophosphate	Phenthoate	Insecticide	2	8
Magnum	Pyrethroid	Cypermethrin	Insecticide	2	8
Kriss	Pyrethroid	Lambdacyhaloth rin	Insecticide	2	8
Boxer	Pyrethroid	Cypermethrin	Insecticide	1	4
Palmetrin	Pyrethroid	Cypermethrin	Insecticide	1	4
Bida	Pyrethroid	Lambdacyhaloth rin	Insecticide	1	4
Wildkid	Carbamates	Methomyl	Insecticide	1	4

Curzate	Cyanoacetamide	Cymoxanil and	Fungicide	16	64
	oxime	Mancozeb			
Rainfast	Dithiocarbamates	Mancozeb	Fungicide	9	36
Previcur	Carbamates	Propamocarb	Fungicide	6	24
Trunil	Organochlorine	Daconil	Fungicide	2	8
Torogi			Fungicide	2	8
Vondozeb	Dithiocarbamate	Mancozeb	Fungicide	1	4
Fungufree	Dithiocarbamates	Ever Mancozeb	Fungicide	1	4
Zebra	Dithiocarbamates	Mancozeb	Fungicide	1	4
Manzate	Dithiocarbamates	Mancozeb	Fungicide	1	4
Afalon	Substituted Urea	Linuron	Herbicide	3	12
Gramoxone	Bipyridyl	Paraquat	Herbicide	1	4
Zinc		Zinc phosphide	Rodenticide	1	4
Phosphate					

Statement 1. The clay content and organic fertilizer strongly influences degradation of chemicals.

- **2.** Microbial activity strongly influences in the degradation of pesticides in the soil.
- **3.** Climactic conditions such as light intensity, temperature, and humidity contribute greatly in the degradation process of pesticides.



Figure 3. Graph showing opinion of farmers regarding pesticide persistence

Statement 1. Farmer's exposure to pesticide causes dizziness, reduced coordination and ability to think.

- 2. Pesticides will not only reach the target organism but will also kill beneficial insects, birds, and animals in or around the crop fields.
- 3. Pesticides will cause loss of biodiversity.
- 4. Underground water can also be contaminated with these poisonous chemicals.
- 5. Surface water can also be contaminated with these poisonous chemicals.
- 6. Unsafe use or misuse of pesticide contributes to pesticide poisoning.



Figure 4. Farmers' perception on pesticide persistence

Summary

- Most farmers have considerable experience in chemical farming
- Owners have small landholdings
- Mostly males; finished primary or secondary education
- Most would burry and/or litter in the field
- 3 croppings a year
- Good idea on pesticide degradation
- Some degree of awareness on health and environmental impacts

Thank you...