

Review of registered pesticides in Ethiopia

INTRODUCTION

- There have been pesticides almost as long as there has been farming and cultivation.
- Different natural substances have been used as pesticides. Initially, salts of metal, sulphur, natural oils and tobacco products were utilized.
- During the last 50 years or so, chemical synthesis of pesticides has increased considerably.
- Now, there are more than 55 classes and 1,500 individual substances produced in more than 10,000 formulations of pesticides.

Pesticide use in Ethiopia

- The emergence of commercial farms during the early 1960's is assumed to be the start up for the use of chemical pesticides
- Agricultural inputs were introduced to the small holder farmers following the implementation of projects
 - Chilalo Agricultural Development Unit (1967),
 - Wolita Agricultural Development Unit (1970)
 - Minimum Package Project under EPID (1971)

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- Regulatory body was established within the MoA in 1972.
- Then after pesticide use and sales were introduced to the farmer and this time is considered as a startup for the use of pesticides by farmers.
- currently with the development of floriculture and horticulture commercial farms the annual importation of pesticides has reached to 4200MT

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- The growth of amount of imported pesticides, increase of types of pesticides in use and pesticide users has demanded to in place appropriate pesticide management system.
- Therefore, the government of Ethiopia has promulgated a new pesticide proclamation No 674/2010.

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- To help the implementation of the new proclamation, Pesticide Risk Reduction Programme – Ethiopia, joint collaborative project between the Netherlands and the government of Ethiopia on pesticide registration and post registration launched in 2010.
- The project comprises of different work packages of which work package – E is one.
- The overall aim of Work Package E is to execute a study on the overall impact of the new (post)registration system.

Aim of the study

- The aim of this study paper is to present compiled basic information on the registered pesticides that helps as an input for the base line study of the impact assessment.

Methodology

The study is made by:-

- Reviewing registered pesticides list of the country
- Referring Data bases (FAO) for registered pesticides and conducting literature review.
- Referring Pesticide Properties Database (PPDB) Data bases for the pesticide hazard classes of the active ingredients, formulations and chemical classes.

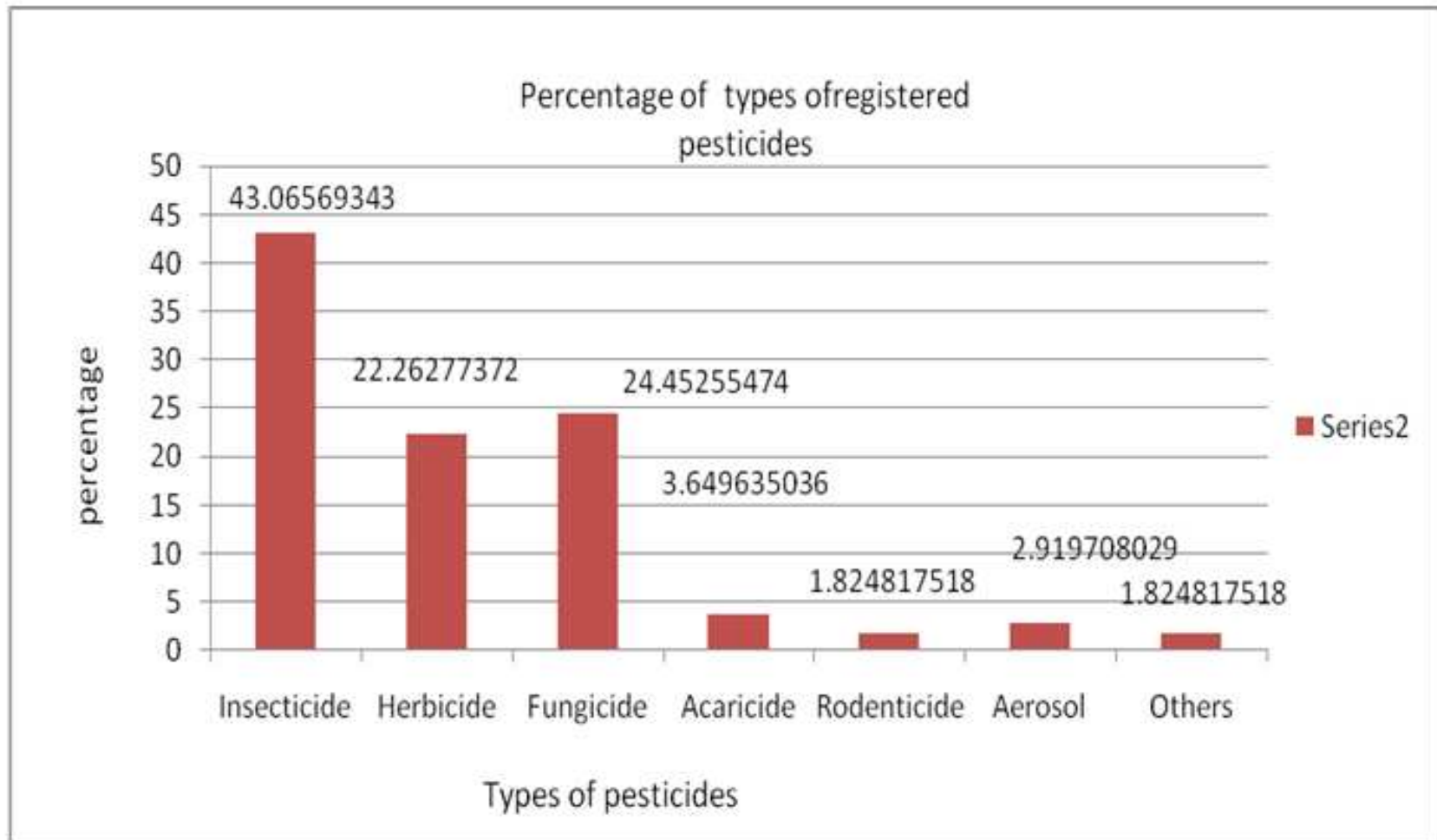
Pesticide Registration in Ethiopia

- Pesticides need to be used with care
 - proper knowledge their potential harms is very necessary
 - In order to minimize the consequences associated with their undesirable characteristics such as:-
 - poisoning,
 - residue problem,
 - environmental pollution
 - The first Pesticide Registration and Control Special Decree No. 20/1990 was enacted in the year 1990.
 - A new Pesticide Registration and control proclamation No. 674/2010 was passed in August 2010
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Registered Pesticides in Ethiopia

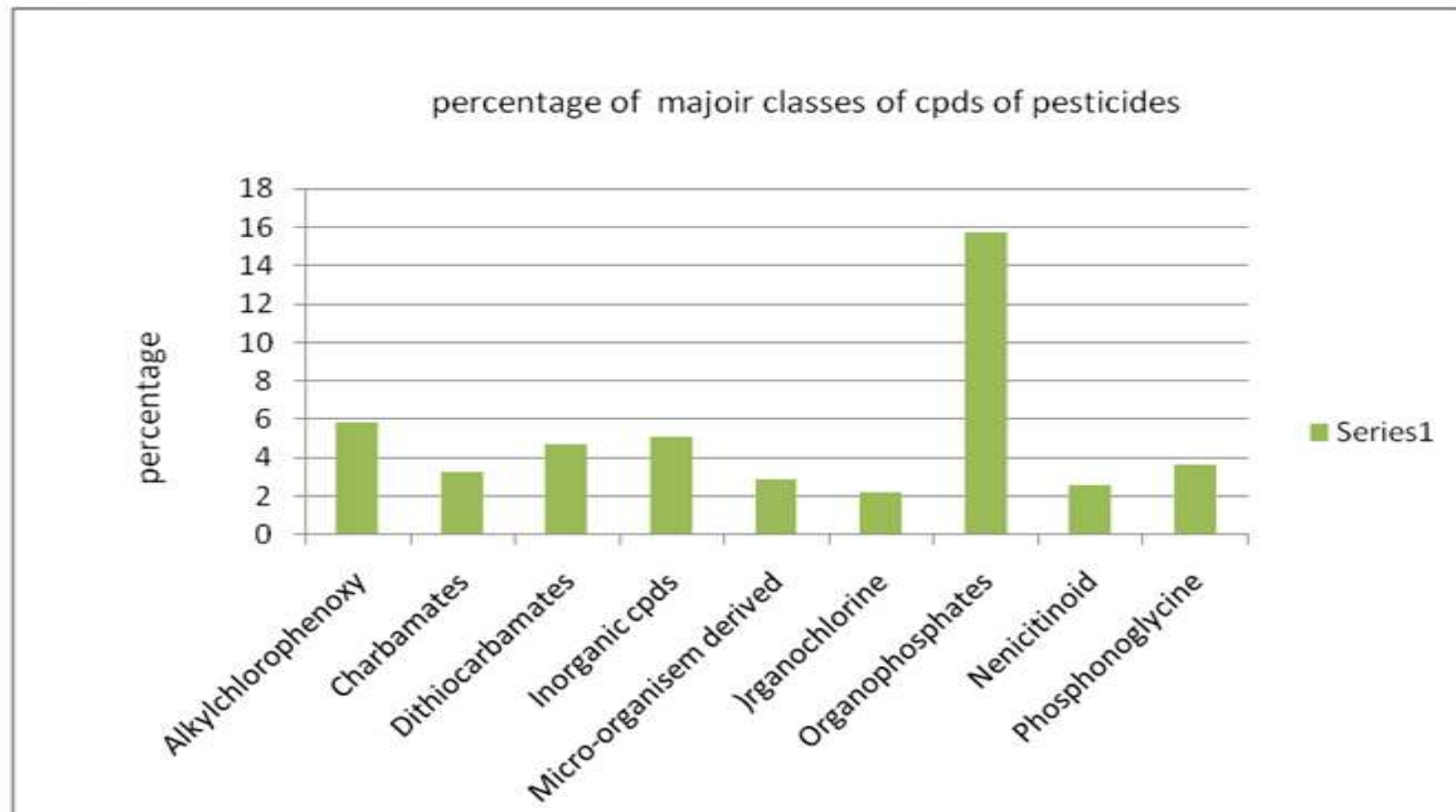
- Since pesticide registration has been started, 274 different types of pesticides are registered for agriculture and household uses.
- Out of the 274 registered pesticides as depicted in chart 1 , based on pesticide use classification :-
 - insecticides make 43 %,
 - herbicides 22.3%,
 - fungicides 24,45,
 - Acaricides 3.6%,
 - Rodenticide 1.8%
 - aerosol 2.9 And
 - Others 1.8%.

Chart 1



Grouping/Classifying on functional group

Chart 2



Classification based on Toxicity Classes

To classify the registered pesticides for their toxicity,

- WHO classification for the active ingredients and
- EPA classification for the formulations are implemented,
- Pesticide Properties Database(PPDB),
<http://sitem.herts.ac.uk/aeru/footprint/index2.htm>,
taken as reference.

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Classifying the 274 registered pesticides by the WHO risk classification system for the active ingredients

- 5.7% are extremely hazardous (WHO class Ia and b),
- 48.5% very hazardous (WHO class II),
- 15.3% moderately hazardous (WHO class III) and 14.5% are low risk (class U).
- The highest toxicity class of the constituents is considered for mixed pesticides.

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According to EPA toxicity classification of formulated products,

- excluding the unclassified pesticide formulations, the heights percentage proportion goes to class III followed by class II

Chart 3

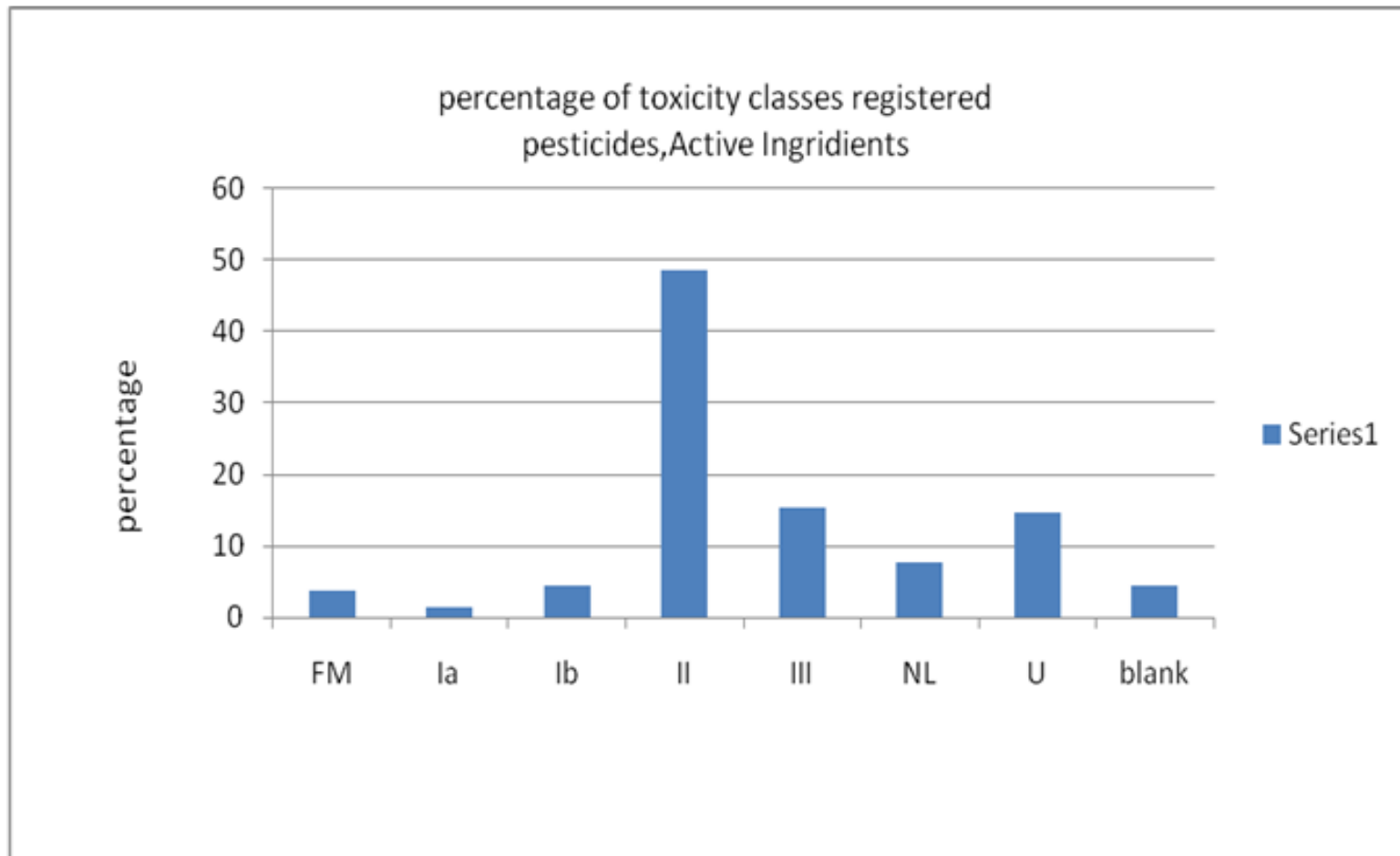
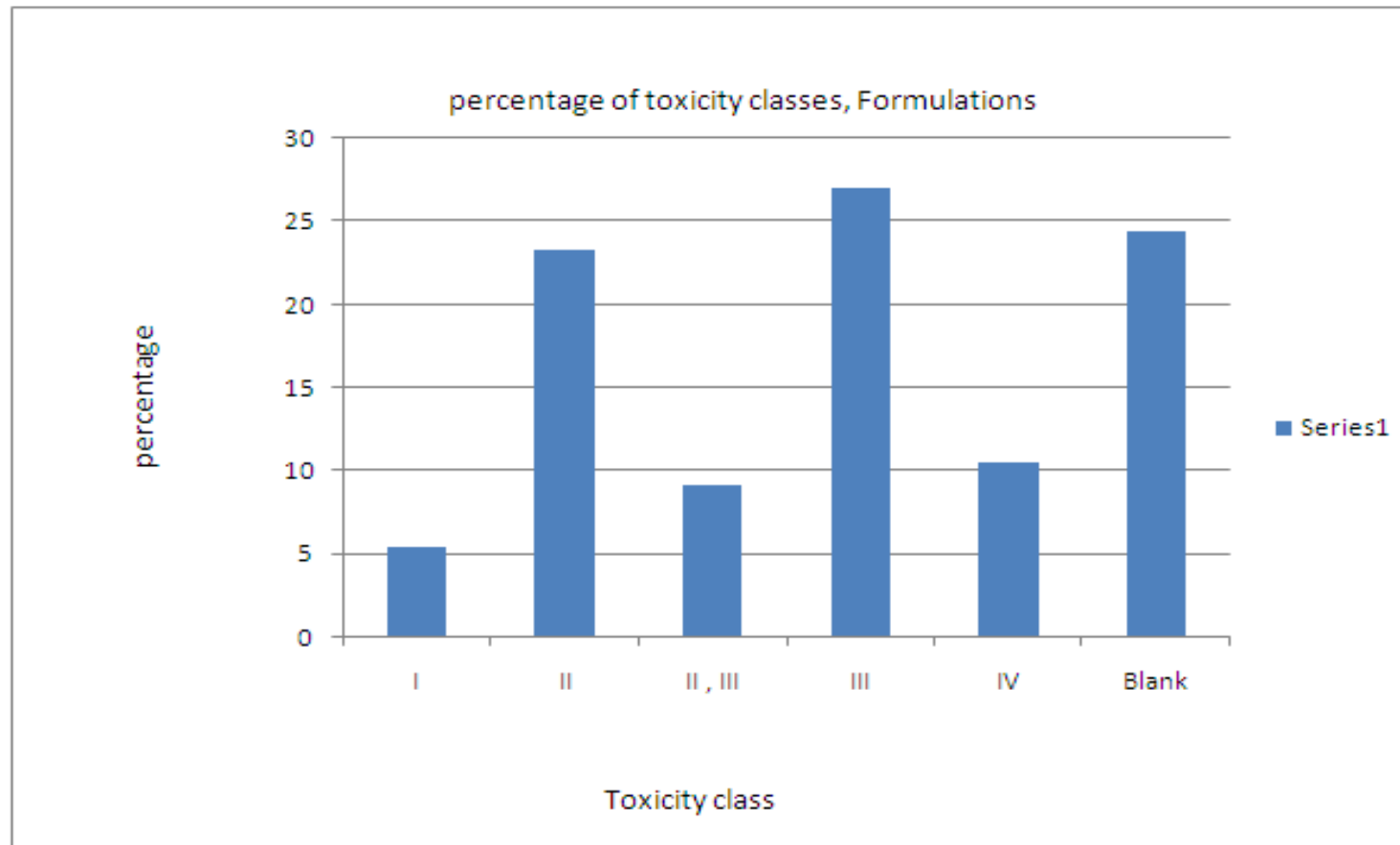


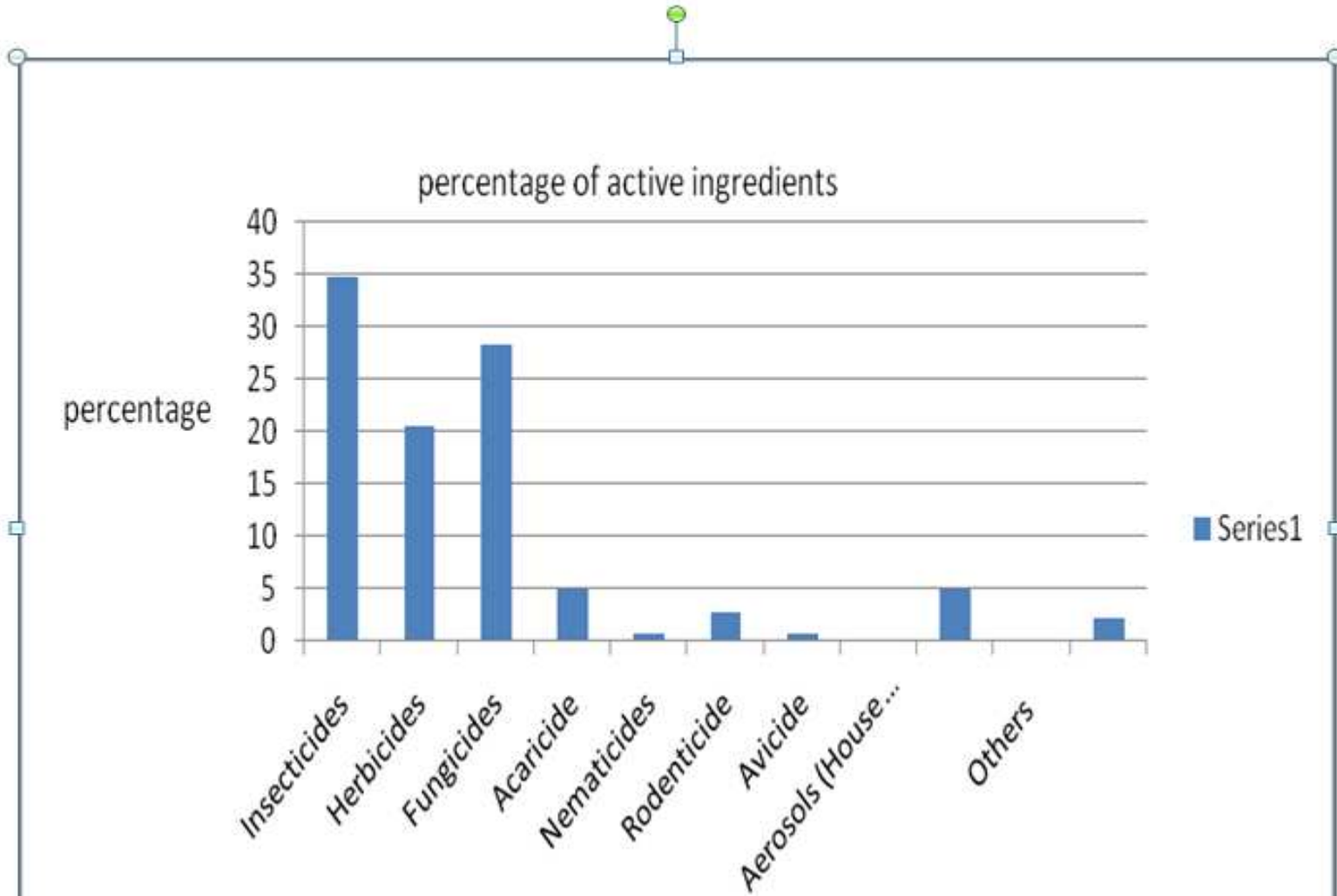
Chart 4



Registered Active Ingredients

- A total of 141 are registered till 2010.
- Of the total 274 registered pesticide formulations 44 of them constitute mixtures of two or more than two active ingredients while the rest are constitute single active ingredient.
- The highest being insecticides (34.74%)
- Fungicides (28.36 %) and herbicides (20.56 %)

Chart 5



Formulation Types of Registered pesticides

The major formulation types of the registered pesticides are:-

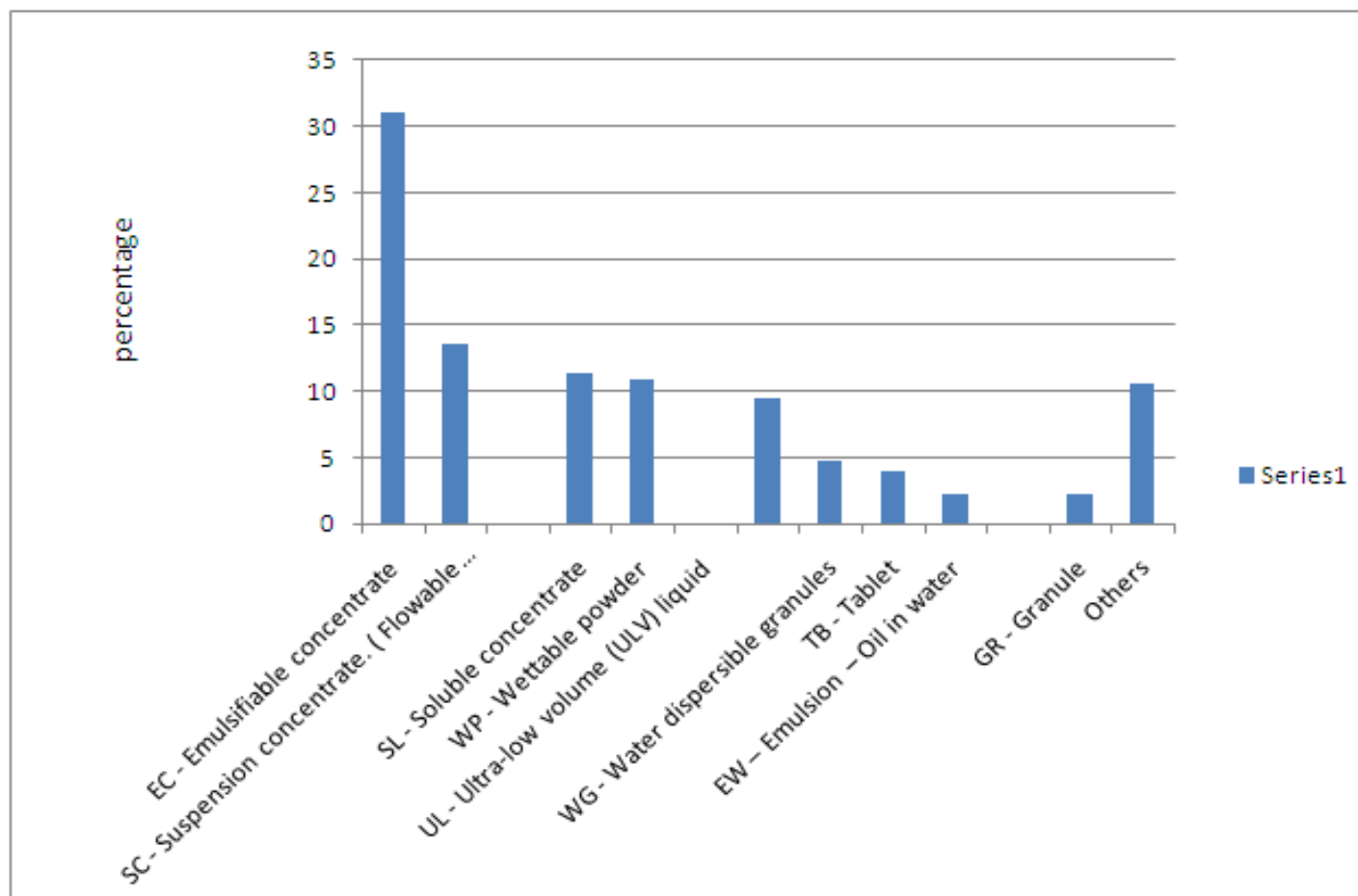
- Emulsifiable concentrate (EC),
- Suspension Concentrate (SC),
- Soluble Concentrate (SL), Wettable Powder (WP) and

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- Ultra Low Volume (ULV) formulations. Their percentage share is illustrated in the chart below.

Table 6

Formulation type percentage of registered pesticides



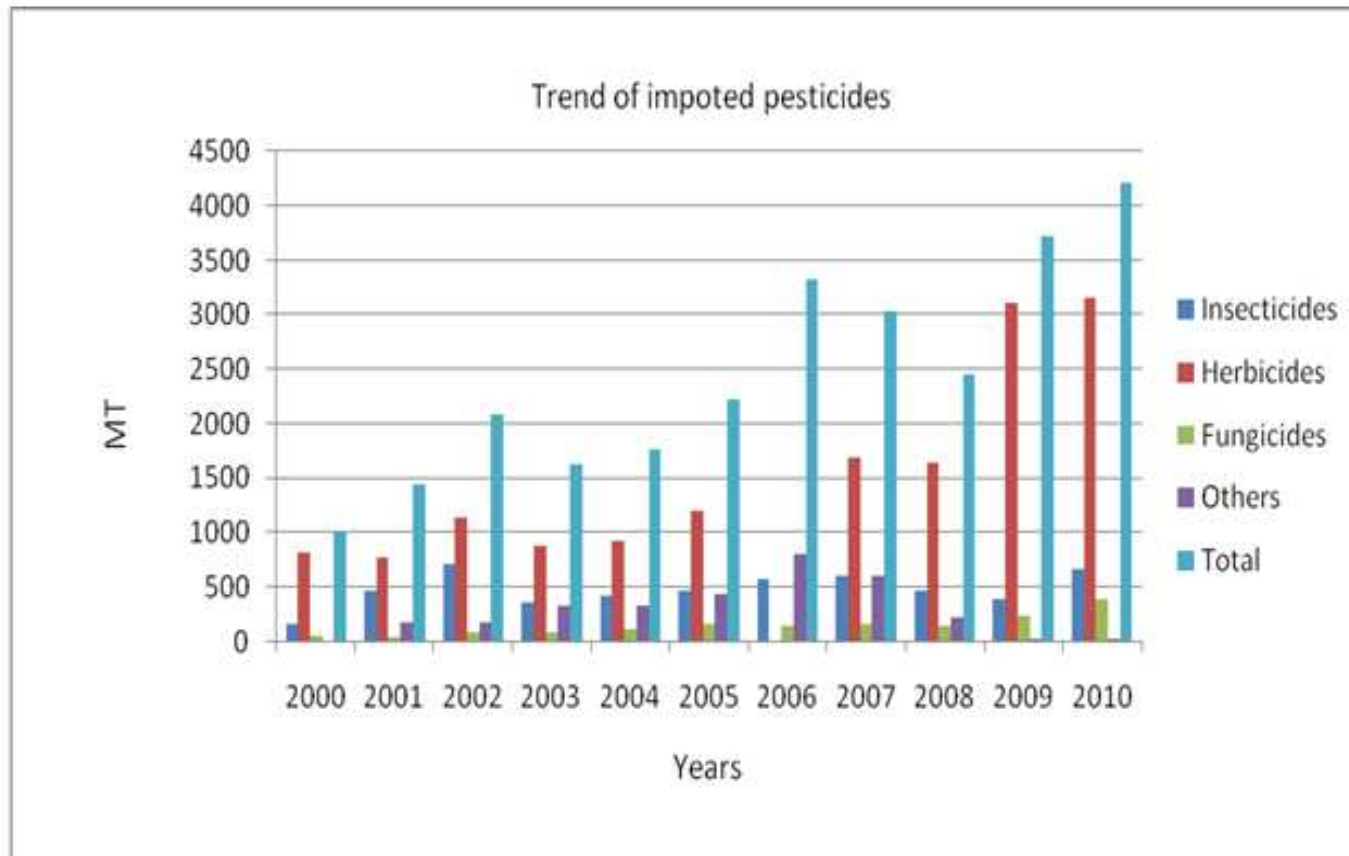
Pesticide Importation

- The volume of pesticides imported to the country is increasing from year to year.
- This can be attributed to the increase of agricultural investment and the awareness of farmers to use pesticides as a modern technology in increasing agricultural production.
- The trend shows the volume of pesticide import has reached 4211 MT in 2010 as compared to 1015 MT of 2000

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- The data for the volume of imported pesticides does not embrace the volume imported for the control of migratory pests

chart 7

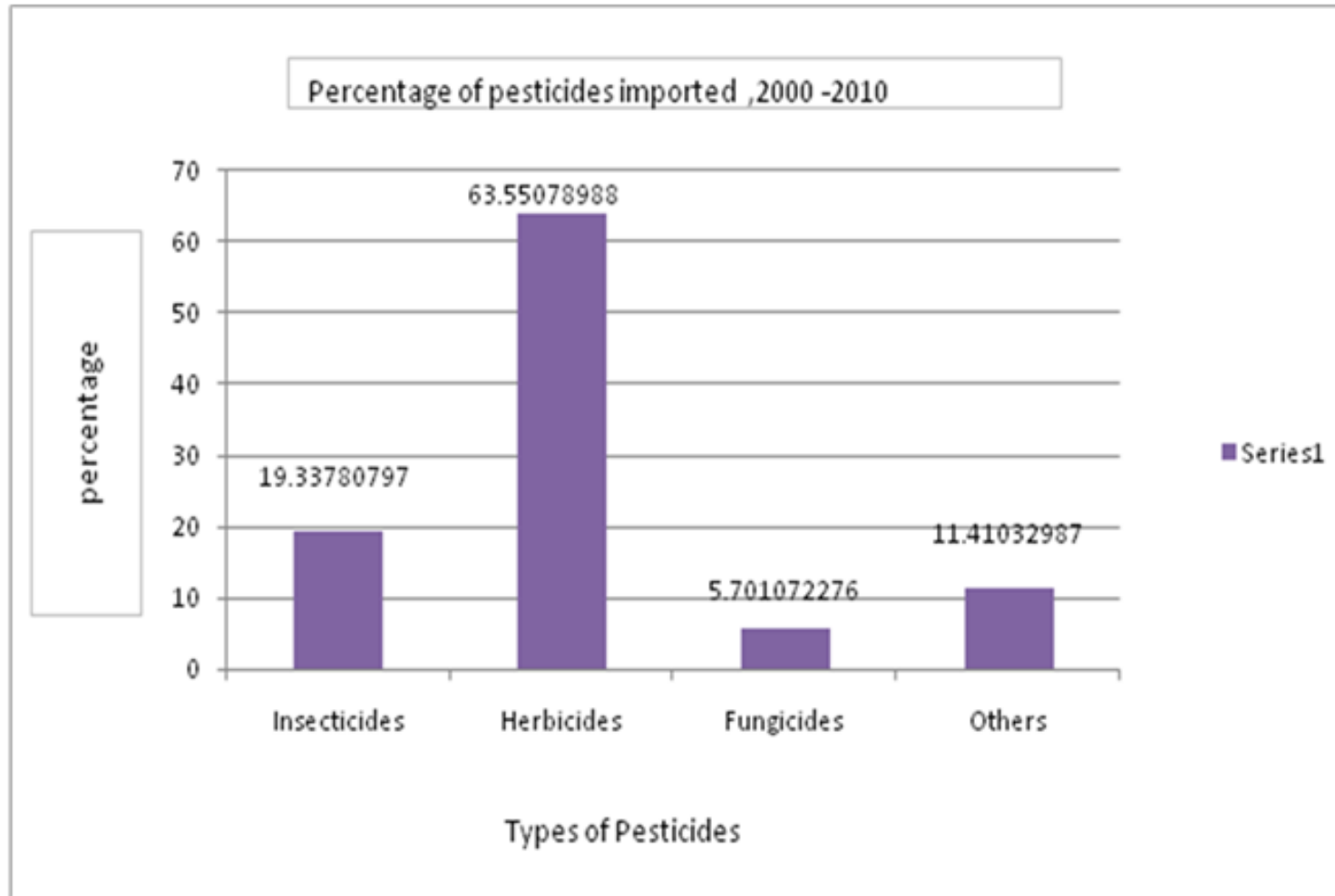


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Of the total import, from 2000-2010:-

- Herbicides constitute the highest proportion (63.56 %)
- Followed by insecticides (19.34%).
- Fungicides and other types of pesticides make up 5.7 % and 11.4 % respectively.

Chart 8



Recommendations

- However, in Ethiopia, Impacts of pesticides to a given locality /environment has not been clearly identified, assessed and compiled. There is no system for risk monitoring and communication. It is therefore essential to put in place mechanisms by which concerned and affected community members could understand the impacts of pesticides and their containments to their surrounding environment and health.
- Focusing on the least toxic pesticides is essential in order to minimize the impacts associated with the use of highly toxic pesticides

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- Introducing the use of integrated pest management system and focusing on the use of micro-organism and plant derived pesticides can minimize the associated negative impact of pesticide use on health and the environment

THANK YOU

Who classification by hazard

LD stands for "Lethal Dose". LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. The LD₅₀ is one way to measure the short-term poisoning potential (acute toxicity) of a material

Class		LD50 for the rat (mg/kg body weight	
		Oral	Dermal
<u>Ia</u>	Extremely hazardous	< 5	< 50
<u>Ib</u>	Highly hazardous	5 - 50	50 - 200
II	Moderately hazardous	50 - 2000	200 - 2000
III	Slightly hazardous	Over 2000	Over 2000
U	Unlikely to present acute hazard	5000 or higher	5000 or higher