

Experiment No. 5

Study of herbicide formulations and mixture of herbicide

5.1 Objectives

To acquaint with different herbicide formulations available in the market and herbicide mixture

5.2 Procedure

Read the information given on the labels attached to the herbicide containers.

5.2.1 Types of formulations

a) **Emulsifiable Concentrate (EC)**

b) **Solution Concentrate (SC)**

c) **Wettable Powder (WP):**

d) Soluble Powder (SP):

e) Flowable Concentrate (FC):

f) Granule (G) and Pellets (P):

g) Fumigants:

5.4 Herbicide mixture

Herbicide mixture is the mixing of two or more herbicides having different mode of action. Pre and post emergence herbicides are mixed to increase in the spectrum of weeds control over a longer period of time. It prevents herbicide resistance development in weeds and weed flora shift in crops and cropping system to selected herbicides.

5.4.1 Types of herbicide mixture

5.4.1.1 Factory mix:

5.4.1.2 Field mix:

5.4.2 Interaction effects of mixture

a) Synergistic effect:

b) Additive effect:

a) **Independent effect:**

b) **Enhancement effect:**

c) **Antagonistic effect:**

Herbicide rate calculations:

Formula for calculating herbicide required to an area.

$$\text{Herbicide required (Kg)} = \frac{\text{Recommended dose}}{\text{Active ingredient (a.i/a.e)}} \times 100 \times \text{Area in ha}$$

Problem

- 1. Pre-emergence application of pretilachlor(50% EC) + bensulfuron methyl(60% DF) @ (1000+660) g/ha is effective in controlling grassy weeds. Find out the required herbicides for 1.25 ha.**

2. Post emergence application of almix(20% WP)+ bispyribac sodium(10% SC) @ (4+20)g/ha effectively controls grass,broad leaves and sedges. Calculate the required herbicide for 0.75 ha.

3. Herbicide combination atrazine (50 % WP) + pendimethalin (30% EC) @ 0.5 kg/ha + @ 0.5 kg/ha is applied as pre emergence spray in maize. Find out the quantities of herbicide will be required for 1.25 ha.

5.5 Conclusion

Signature of faculty