



## W03L02: Herbicides Application

**Dr. Sanjay Kumar**

Chairman, Dept. of Agronomy, BAC, Sabour

# Herbicides application

- ✓ Why we use herbicides in CASI
- ✓ Types of herbicides
- ✓ Time of application
- ✓ Types of nozzles
- ✓ Calibration of sprayers
- ✓ Safety measures

# Why we use herbicides in CASI?

- ✓ Higher weed pressure with minimal tillage increases peak labour demand
- ✓ CA increases labour requirements during the cropping season for weeding when implemented without herbicides.
- ✓ Reduced tillage systems relying purely on manual techniques for weed control are not an attractive option for smallholders.

# CA with Herbicides

- ✓ With use of non-selective herbicides, all weeds can be removed in a single operation.
- ✓ If weed control is achieved with herbicides, the labour requirement is reduced.

# Herbicides

Herbicides are chemicals that are used to kill undesirable plants, such as weeds. The proper use of herbicides has many benefits in saving money, time and labour. But it also can cause problems such as killing non-target plants, and some herbicides, such as Roundup, could be associated with a high risk of some cancers.

# Types of Herbicides

- On the basis of effect
  1. Pre- emergent herbicide
  2. Contact
  3. Systemic
- On the basis of selectivity
  1. Selective herbicides
  2. Non-selective herbicides
- On the basis of state
  1. Granule
  2. Liquid
  3. EC, etc

# Types of herbicides

- On the basis of application
  1. Pre-plant application
  2. Pre-emergence application
  3. Post-emergence application
  4. Harvest aid application

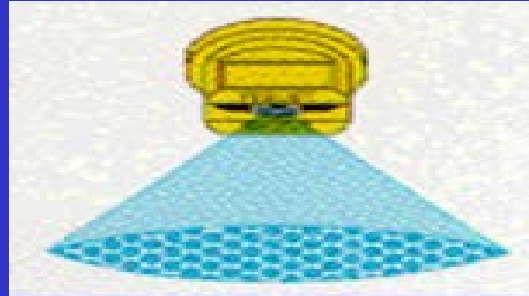
# Nozzles

## Hollow Cone



- not for herbicides
- produce a fine spray that is concentrate on the outside edge of the spray pattern
- suited for insecticides and fungicides

## Flat Fan



- tapered pattern
- provides uniform application when overlapped with the same nozzle type
- Best choice for herbicide applications made with multiple nozzle booms

## Flood (cut) tip



- Pattern tends to be heavy toward edges
- coarse spray pattern with large droplets
- wide spray swath at low pressure
- Less drift



# Pesticide Safety

- Wear boots, long trousers and rubber gloves when spraying
- Keep all pesticides out of eyes and mouth
- Avoid contact with the skin
- Wash with soap and water if contact occurs
- Do not eat, drink or smoke while handling pesticides
- Change and wash clothing after spraying
- Do not reuse empty pesticide containers