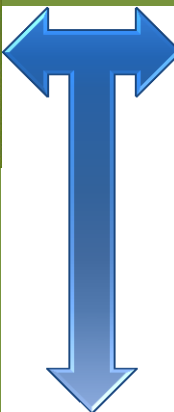


# FIELD GUIDE FOR FARMERS



# Crops affected by Pest-what to do?



Should I  
consult the  
Plant  
protection  
Doctors/  
Institutions

Should I  
ask  
other  
farmers?

Should I  
consult  
shop-  
keepers

Should I  
buy any  
pesticides  
& spray



# Consult to plant protection doctors/Institutions (NIPHM)



Bring the  
samples



Plant protection Institute

Action to  
be taken

AESA

Biological  
control

Chemical  
control

# AESA (Agro-Ecosystem Analysis)



It involves planting of beneficial plant species with nectar-rich flowers that can attract and provide food resources to a wide variety of natural enemies of pests such as parasitoids and predators.



Officials showing the field demo at Erode district, Tamilnadu

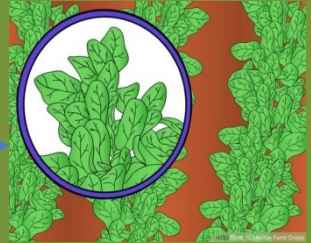
# Biological control



Biological organism controlling the harmful insects in the field crop . Please maintain the ratio at least 2:1 then we able to protect your crops.

# Chemical control

Identify the Crop



Identify the pest



Select the pesticides



Select the proper appliances





# Selection of appliances

For insecticides & pesticides

**High volume  
sprayers  
Water 300-  
500lit/ha**

**Used for  
Sucking &  
Creeping  
Insects**



**For orchards**



**Low volume  
sprayers  
Water 50-150  
lit/ha**

**Used for both  
sucking,  
creeping &  
flying insects**



**For cereals,  
vegetables  
etc.**



**For high  
dense crops**



**UL V  
sprayers  
Water less  
than 5lit/ha**

**Used for  
flying  
insects**

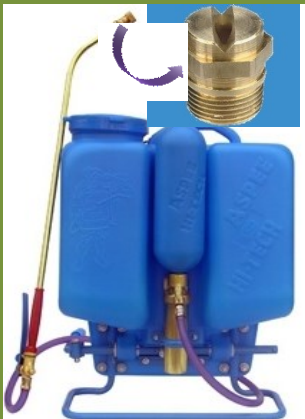


**For protected  
cultivation**



# For Weedicides & Herbicides

**High volume  
sprayers  
(with low  
pressure)**

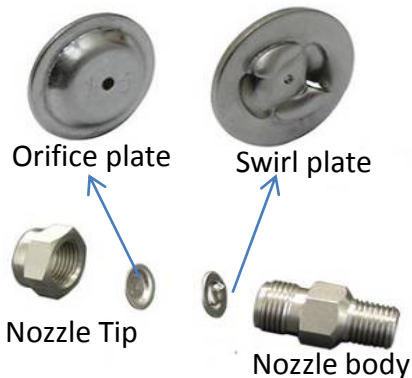


**Low volume  
sprayers  
(Dense  
droplets)**

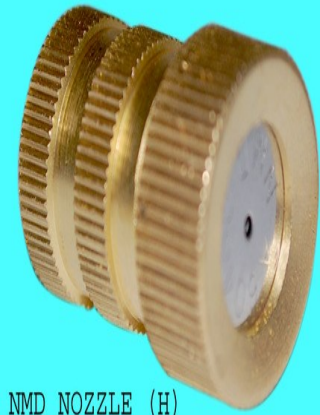




## Nozzles & Its components



### Hollow cone Nozzle



Hollow cone nozzles meant for Insecticides & Pesticides application @ of 40 PSI

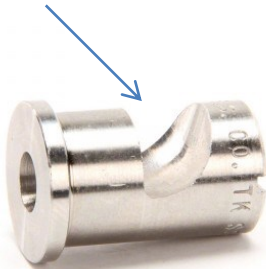
### Flat fan nozzles



Flat Fan nozzles meant for Weedicide & herbicide application @ of 15-20 PSI

# Nozzles & Its components

Deflection angle



**Deflector Nozzle**



Deflector nozzle is used for Weedicide & herbicide application @ of 20-25 PSI

## Adjustable nozzles















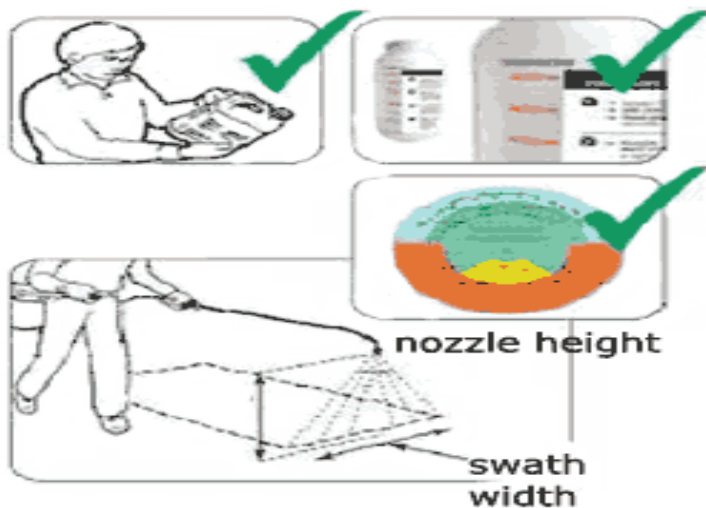
Nozzle tip

Rotor

Triple action nozzles are used for Insecticides & Pesticides application for orchard crops

# Nozzles & Application

| Type of Product                   | Direction of application  | Reflex nozzle   | Flat fan  | Hollow cone   |
|-----------------------------------|---|---|---|---|
| Herbicide,<br>Systemic Fungicide  |  |  |  |  |
| Contact Fungicide,<br>Insecticide |  |  |  |  |
| Contact Fungicide,<br>Insecticide |  |  |  |  |
| Drift Risk                        |   | Low   | Medium  | High  |



# Care & maintenance

Check for  
damage and  
leaks



Check straps

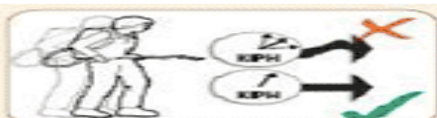


Check spray  
pattern

Clean nozzles  
and filters



Clean nozzles  
with brush



Steady  
forward  
speed



Even  
spray  
height



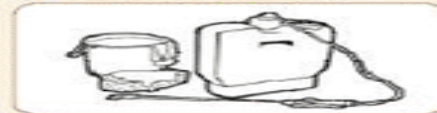
Constant  
pressure



Correct  
product  
rate



Correct  
water  
volume



Correct  
nozzle

Maintain and clean equipment

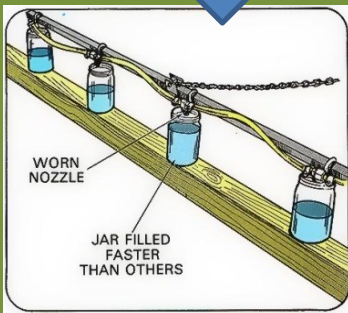
# Calibration



Mixed it as per recommendation

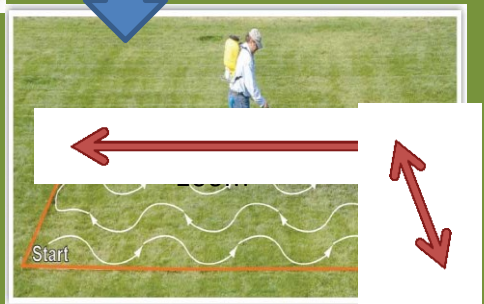


Calibrate nozzle discharge

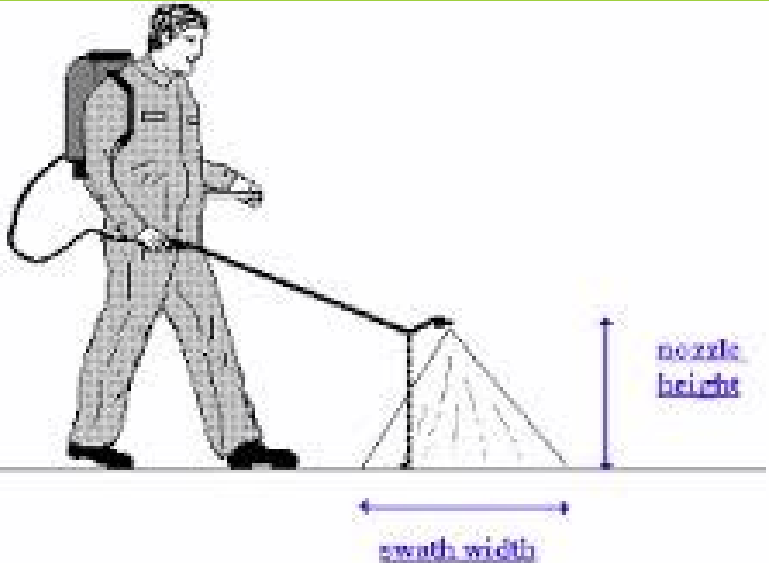


Go for known area

During spraying check the wind velocity should be less than 5 Km/hr



# Calibration



$$F = SDA/10000$$

Where,

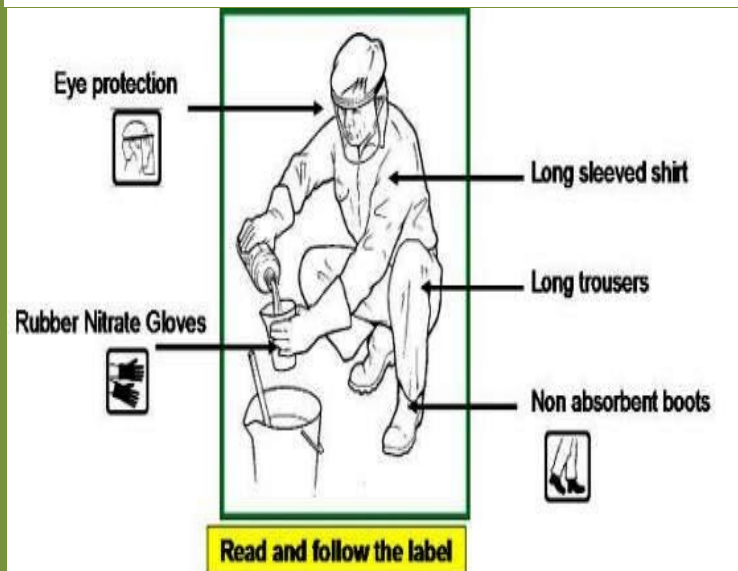
F= Flow Rate (liter/min)

S= Swath Width (meter)

D= walking speed (meter/sec)

A= Application rate (liter/ha)

# Personal protection







NATIONAL INSTITUTE OF PLANT HEALTH  
MANAGEMENT  
Ministry of Agriculture & Farmers welfare,  
Government of India



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**<http://niphm.gov.in>**