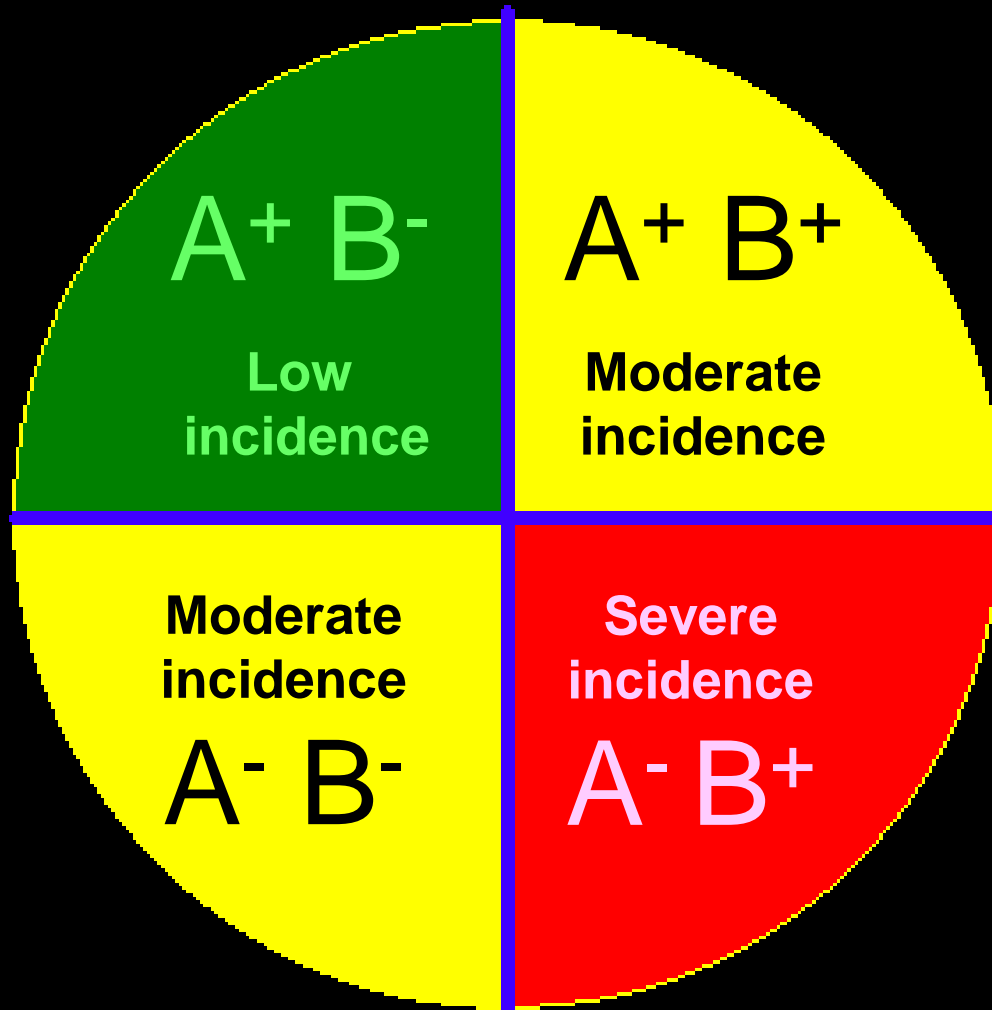


IPM IN PIGEONPEA

Forecasting of *Helicoverpa*
based on rainfall pattern



Helps to predict the incidence of *Helicoverpa*



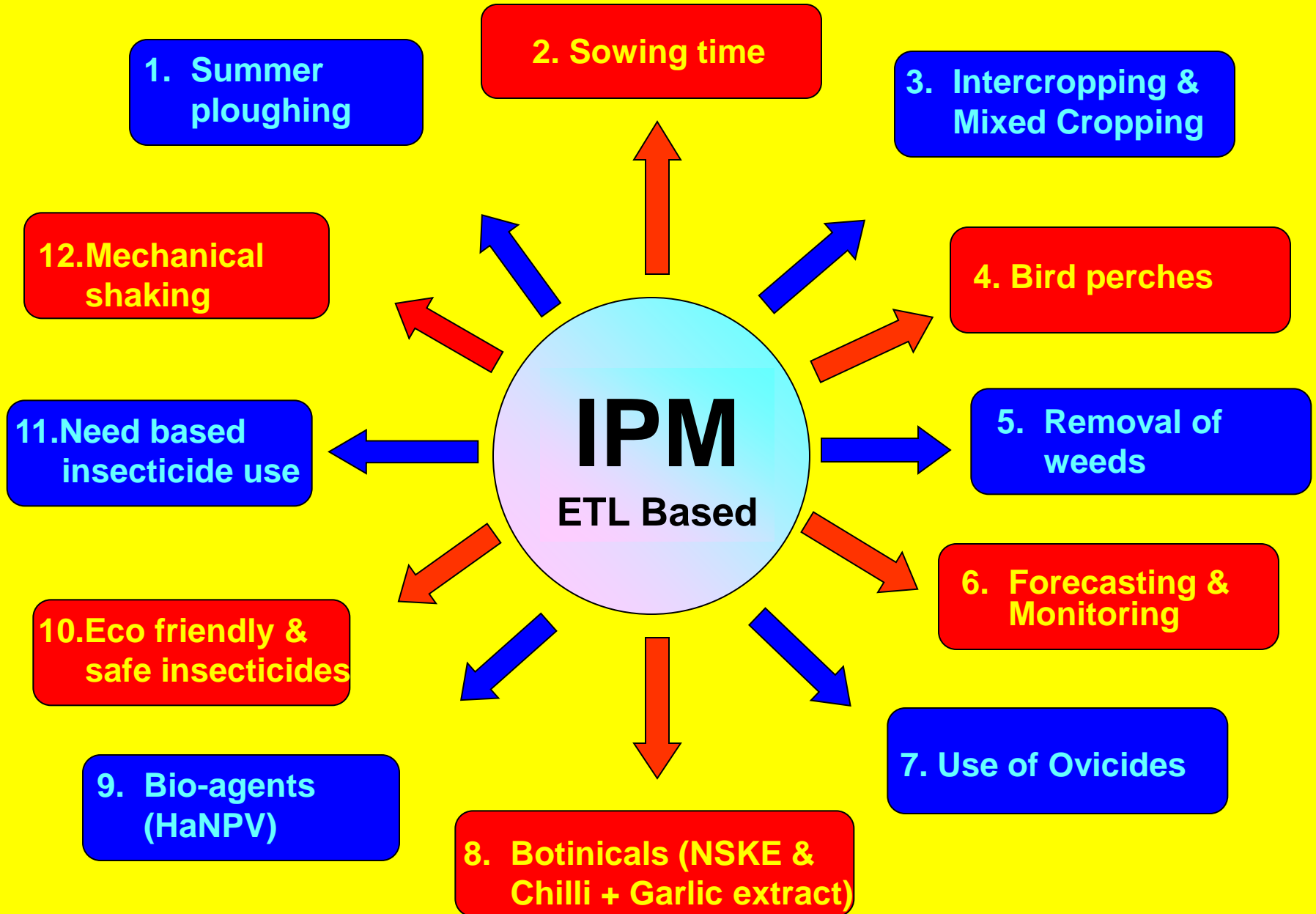
A⁺ = If total rainfall of June, July, August & Sept is more than normal rainfall of that period

A⁻ = If total rainfall of June, July, August & Sept is less than normal rainfall of that period

B⁺ = If October rainfall is more than normal rainfall of that month

B⁻ = If October rainfall is less than normal rainfall of that month

Management of pigeonpea Pests



SUMMER PLOUGHING



Exposes the pupae to sun and birds



Cattle egrets

Time of Sowing

1.	Early sowing	up to June end	Less incidence
2.	Delayed sowing	After July 15th	More incidence

Intercropping : Pigeon pea + Sorghum (1:2)

Second option : Go for

Mixed cropping at the time of pigeon pea sowing, mix 250 grams of local sorghum seeds for conservation of natural enemies



Intercropping conserves natural enemies



Cattle egrets



Wasp



Coccinellids



Reduvid bug



Chrysopa eggs



Spiders

**Conserving natural enemies
through judicious pest
control methods.**



Dragon fly



Preying mantid



Drongo on sorghum



Drongo sitting on perch



Robber fly

Removal of weeds



Most common alternate host
(Legasca mollis)

NIPPING OF TERMINAL OR APICAL SHOOTS IN PIGEONPEA

- **Nipping at 50 DAS,**
- **Reduces height, induces more primary and secondary branches**
- **Plant protection measures becomes more easier.**
- **Wider spacing reduces the podborer incidence**

Monitoring tools

1. Pheromone and light traps
2. Visual counting of eggs and larvae
3. Visual estimation of crop damage (Pod and Seed)



- Farmer sees his crop after devastation by podborer and then goes off to buy the insecticides, so losing both the crop and his money.
- Based on ETL, insecticides have to be imposed.

First method of monitoring

Using Pheromone traps

5 traps / ha to attract male moths from September to December



ETL (Economic threshold level)

4-5 moths / trap / day

Second method of monitoring

By visual observation of eggs and larvae on buds and flowers

Each and Every spray should be based on the ETL

ETL

Two eggs/plant



ETL

One larva/plant



First spray : It is very easy to control
and no further damage to the crop



Use of Ovicides

(per litre of water)

- Profenophos 50EC @ 2.0ml
- or
- Thiodicarb 75 WP @ 0.6g
- or
- Methomyl 40 SP @ 0.6.

SECOND SPRAY : Based on ETL

With botanicals/ IGRs/ new molecules



NSKE 5%

or

**Chilli 0.5%+Garlic
0.25% extract /**

Or

**Novaluron 10EC
0.75 ml /lit**

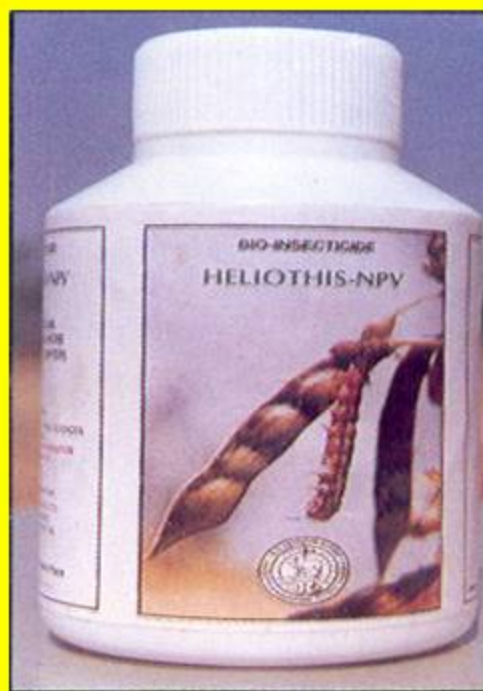


Based on ETL

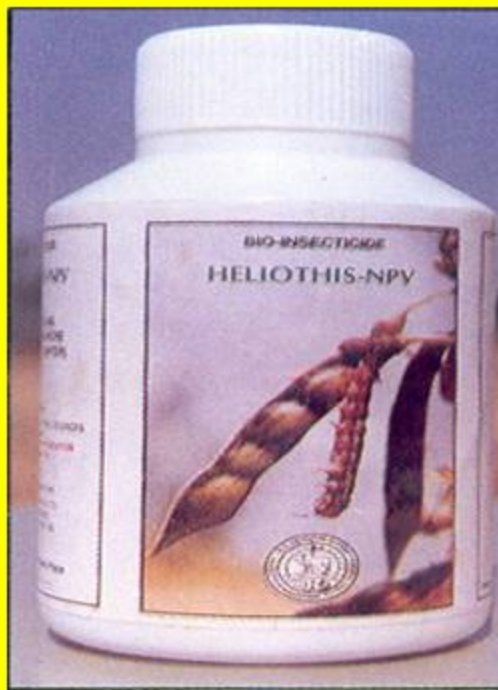
THIRD SPRAY

1st Option : HaNPV 250 LE / ha

- HaNPV @ 250 LE / Ha (1 Larval equivalent = 6×10^9 POB's/ml)
- After 5 days of spraying, larvae hangs upside down on the top of the plant especially on buds, flowers, pods and branches is typical symptom of HaNPV virus.
- It causes natural epizootics in field and takes care of future generations of *Helicoverpa*



THIRD SPRAY: Based on ETL



HaNPV @ 250 LE/ha

Or

Spinosad 45 SC @ 0.12 ml

Or

Emamectin benzoate 0.2 g



FOURTH SPRAY: Based on ETL

Chlorantriniliprole 18.5 SC @ 0.15 ml / lit

or

Flubendiamide 480 SC 0.1 ml / lit

or

Indoxacarb 14.5 SC 0.3 ml / lit

Spotted pod borer/webber

Profenophos 50 EC @ 2.0 ml + DDVP @ 0.5 ml /lit

or

Methomyl 40 SP @ 2.0 ml + DDVP @ 0.5 ml /lit

or

NSKE 5% + DDVP @ 0.5 ml /lit

Pod bugs and Pod Fly management

1. Dimethoate 30 EC @ 1.7 ml/lit

Or

2. Oxydemeton methyl 25EC @ 1.5 ml /lit

Or

3. Acephate 75 SP @ 1.0 g /lit

OTHER MANAGEMENT PRACTICES

Shaking of plants



- **One of the mechanical method of insect management.**
- **During out break -Best method.**
- **Collected larva can be used for HaNPV production for future application**



- Erecting the bird perches @ 20 per ha helps in bird sitting to locate the larvae.
- Black Drongo a predatory bird can feed 25-30 larvae per day.
- Sorghum acts as live bird perches

Suitable spray equipments for spraying in pigeonpea



High volume sprayers are most effective as compared to ULV

1. Power Operated High volume
2. Knapsack sprayer.
3. HTTP sprayer
4. Gutter sprayer.

Knapsack sprayer



**Video clip for
30 seconds**



HTTP sprayer



ULV SPRAYER

DISADVANTAGES:

- No suitable chemical available.
- Drift problem.
- Highly concentrated.
- Hazardous to environment.
- Evaporation problem.

**Do not use ULV sprayer for
management of pod borer**



Management of pigeonpea Pests

