ASIAN CROP CARE

GROUNDNUT CROP PRODUCT PORTFOLIO

GROUNDNUT

INTRODUCTION

- Botanical Name :- Arachis hypogea
- Family :- Leguminosae
- Origin :- Brazil in South America
- Also known as Peanut, Monkey nut, Energy nut.
- In India, major groundnut cultivating areas include Gujarat, Rajasthan, Tamil Nadu, Andhra Pradesh, Karnataka, and Maharashtra.
- Saurashtra is the heart of the Gujarat and Gujarat stands as the largest producer of groundnut in India.
- China is the world's largest producer of groundnuts, followed by India.

Groundnut Climatic & Soil Requirements

- Groundnut can be grown in both rainy (kharif) and post-rainy (rabi/summer/spring) seasons.
- Groundnut is a warm-season crop, and the optimum temperature for growth and development is between 25°C and 30°C.
- Groundnut prefers slightly acidic to neutral soil, with a pH range of 5.5 to 7.0.
- It prefers well-drained, sandy loam or sandy clay loam soils with a pH of 6.5 to 7.

Reasons of Low Productivity

- Groundnut Crop grown mostly rainfed and hence water stress at critical stages.
- Untimely rains after the critical stage is completed. Continues sowing in the same area results in heavy build of inoculums resulting in heavy disease pressure.
- Less awareness amongst growers on farm management.
- Poor spend on Crop Protection Products - Only Curative application is taken up.
- Improper Micronutrient Management

Different Stages of the Crop

Crop Stages	Crop Age
Germination	0 – 5 Days
Plant Establishment	10 – 12 Days
Flowering	26 – 30 Days
Peg Formation	40 – 45 Days
Pod Formation	55 – 60 Days
Maturation	90 – 100 Days

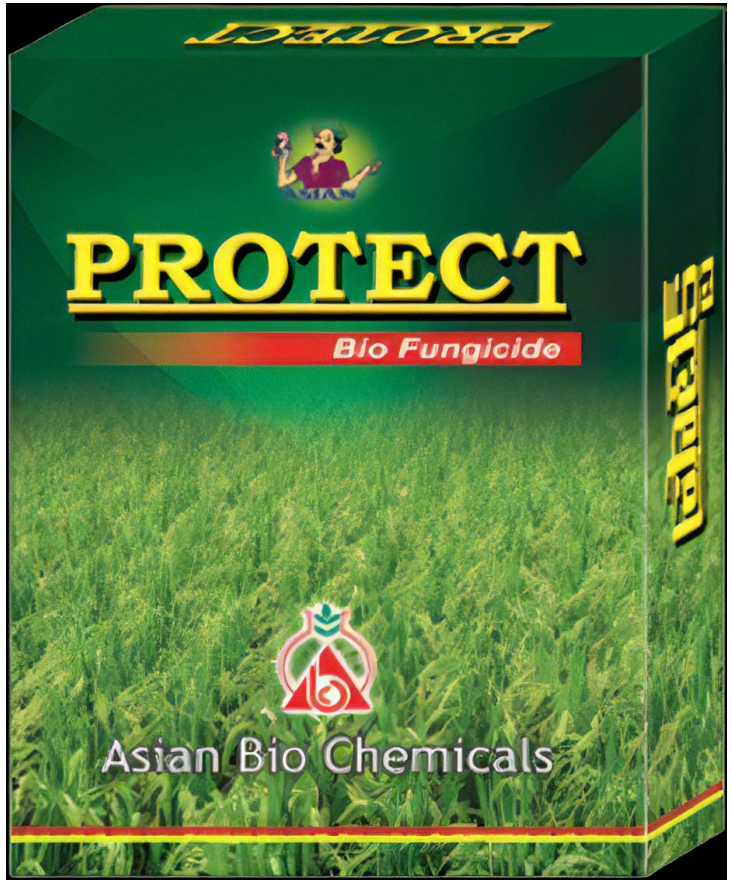
Groundnut have TWO types of Plants

1.Bunchy Type

2.Spreading Type

SEED TREATMENT

- For Control of Seed Borne Disease, Treatment of groundnut seeds with **PROTECT – 90 GMS** / Per Kg of Seed.



NUTRIENT MANAGEMENT

Symptoms of Potassium Deficiency:-

- Common in light soils, especially when N and P Chemical fertilizers alone are applied without FYM.
- Deficient plant leaves do not grow normally and appear irregular in shape.
- In matured leaves instead spreading from the leaf.
- However, the areas around the vein remain normal green.
- Tip of leaves show yellowish brown spots.

Control Measures:-

- Foliar Application of **MARVEL KM** can Control Potassium Deficiency.

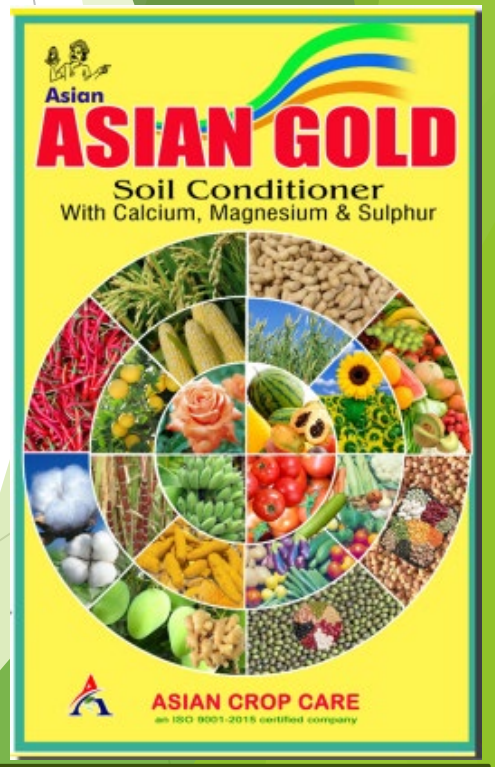
Dosage: 3 GM Per Ltr of Water

Symptoms of Calcium Deficiency :-

- Calcium (Ca) deficiency is normally seen in alkaline or light soils.
- Irrigation water low in calcium or waters having high residual sodium carbonate also results in Ca deficiency.
- Tender parts of stem and roots are damaged and growth remains stunted.
- Tender leaves are curled up .

Control Measures :-

- Soil Application of ASIAN GOLD can Control Calcium deficiency.



Dosage: 20 KGS Per Acre

Symptoms of Sulphur Deficiency :-

- Light soils with low humus are prone to Sulphur (S) deficiency.
- Continuous application of complex fertilizers which do not contain Sulphur or irrigation water with negligible sulphates may also result in Sulphur deficiency.
- Young leaves appear small and yellowish-green due to Sulphur deficiency .
- Leaflets are seen in the form of a " V "
- Plant growth is also stunted.

Control Measures:-

- Foliar Application of SULFEX can control Sulphur Deficiency.

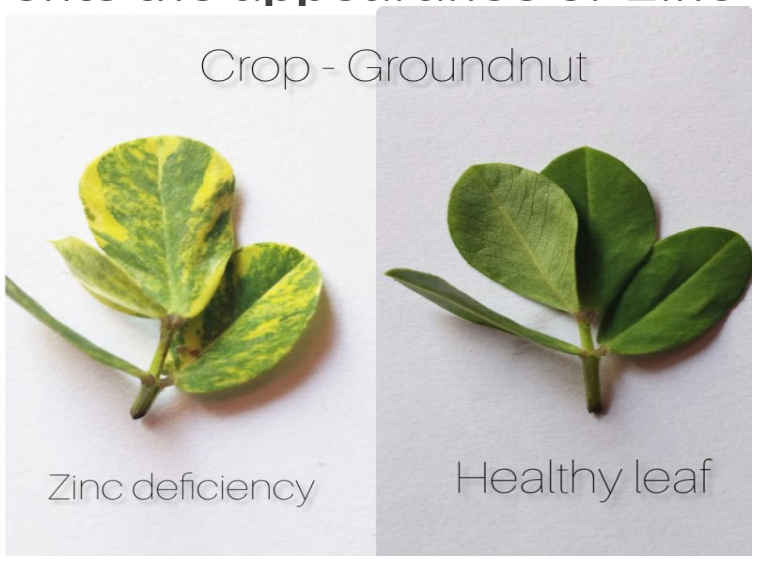
Dosage: 2.5 ML per Ltr of water

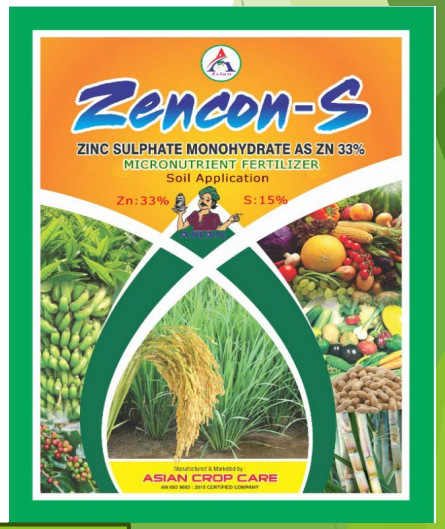
Symptoms of Zinc Deficiency:-

- Zinc Deficiency normally appears in light and calcareous soil irrigated with water containing high bicarbonate and carbonate ions.
- Zinc-deficient leaves appear small with short internodes and appear as a cluster.
- Zinc deficiency also results in interveinal chlorosis.

Control Measures:-

- Foliar Application of **CHELAZEN+** can control Zinc deficiency.
- For every three cropping seasons, Soil application of **ZENCON-S 20kg/acre** prevents the appearance of Zinc deficiency.





Dosage: 2 GM per Ltr of water

Symptoms of Iron Deficiency:-

- Iron Deficiency can be expected in calcareous soils or when water containing high bicarbonate and carbonates are used for irrigation.
- Initially, deficiency of iron is seen as interveinal chlorosis.
- Later, the entire leaf may turn chlorotic.
- In case of severe deficiency, the entire lamina may become chlorotic or white.

Control Measures:-

- Foliar Application of FERRAMIN can control Iron deficiency

Dosage: 2 GM per Ltr of water

INSECT MANAGEMENT

- **APHIDS**
- **Nature of Damage Symptoms :-**

- Both nymphs and adults suck the sap from the leaves.
- Aphids feed on the sap of groundnut plants by inserting their needle-like mouthparts into the plant tissues.
- This feeding activity can result in reduced plant vigor and stunted growth.
- Severe Aphid infestations can lead to delayed flowering and reduced yield.
- Sometimes honey dew deposited on the leaves and shoots could be seen which attract the ants.

➢ Control Measures :-

- Foliar Application of **MIGHTY** or **KRISHAB No.1**

Dosage: 2.5 ML per Ltr of Water

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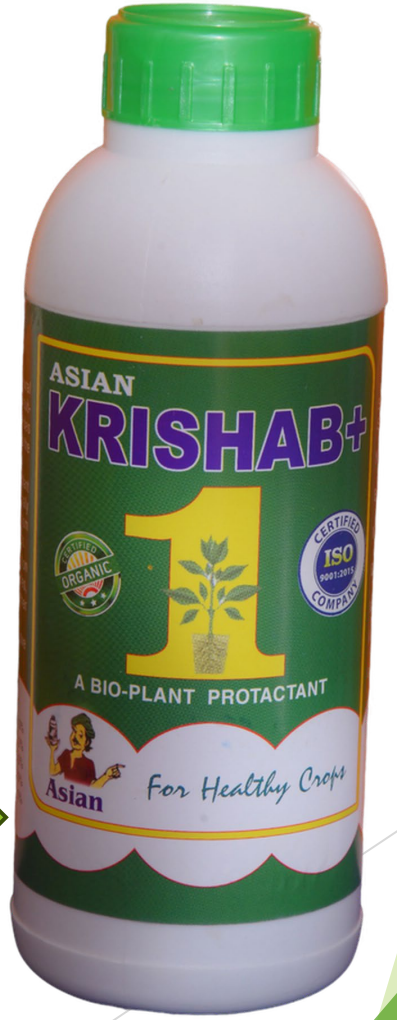


JASSIDS

Nature of Damage Symptoms :-

- Jassids are small, yellowish-green insects, and their nymphs and adults are yellowish green.
- They are most likely found on the underside of leaves.
- The first sign of Jassids infestation is often the whitening of the veins on the underside of young leaves.
- Jassids feeding causes leaves to turn yellow, then brown, starting from the margins and moving towards the midrib.
- Plants may become stunted due to nutrient loss caused by Jassids feeding.

➢ Control Measures :-

- Foliar Application of **PRIME PLUS** can control Jassids

Dosage: 2.5 ML per Ltr of Water

THRIPS

Nature of Damage Symptoms :-

- Thrips have rasping mouthparts that they use to pierce plant cells and suck out the sap.
- Both nymphs and adults feed on the plant foliage.
- Thrips feeding results in white patches on the upper surface of leaves and necrotic (brownish) patches on the lower surface.
- Thrips feeding can cause a "silvering" appearance on leaves, where the leaf tissue appears pale and shiny due to the loss of cell contents.
- Thrips activity and presence increase during high temperatures and low rainfall.

➢ Control Measures :-

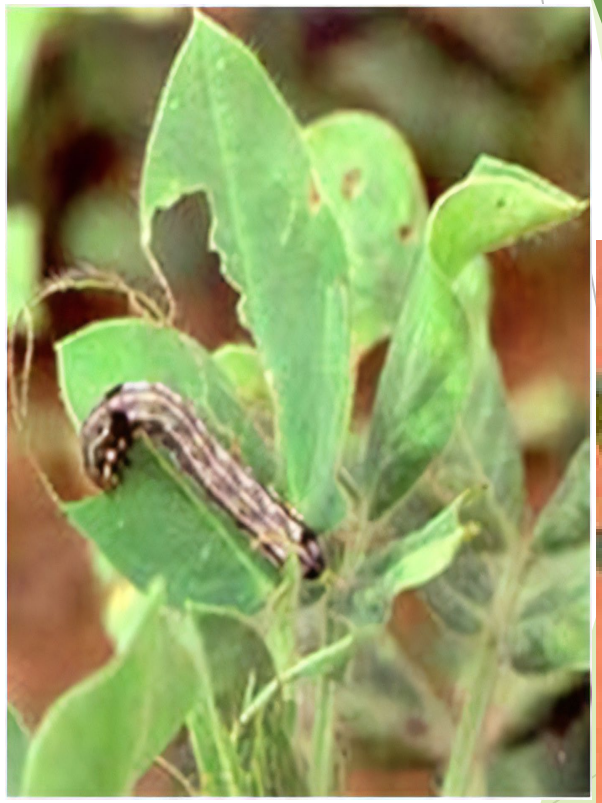
- Foliar Application of **RULER** can control Thrips.

Dosage: 2 ML per Ltr of Water

➢ TOBACCO CATERPILLAR / Helicoverpa Armigera

➢ Nature of Damage Symptoms :-

- Larvae feed on the leaves, creating irregular holes and potentially causing complete defoliation.
- Flower buds and pods can also be attacked, showing feeding holes.
- Pupation occurs in earthen cells in the soil for about 15 days.
- The tobacco caterpillar can cause significant yield losses, with studies showing reductions of up to 47% in groundnut crops.



➢ **Control Measures:-**

- Foliar Application of **KLICK GOLD** or **SPODA SPECIAL** can control Tobacco Caterpillar

Dosage: 1 ML + 1 Gm per Ltr of Water

Dosage: 2.5 ML per Ltr of Water

➢ WHITE GRUBS:-

➢ Nature of Damage Symptoms:-

- White grubs primarily feed on the roots of groundnut plants, causing extensive damage to the root system.
- As the root system is damaged, plants exhibit symptoms of wilting and yellowing, indicating nutrient and water uptake issues.
- In severe cases, the damaged root system can lead to the death of the plants, resulting in patches of dead or dying plants in the field.
- In severe infestations, the entire crop can be destroyed, necessitating replanting.

➢ Control Measures:-

- **Basal Application of FERT can control White Root grubs.**

Dosage: 2 KG per Acre

RED SPIDER MITE:-

Nature of Damage Symptoms:-

- Red spider mites cause damage to groundnut.
- Spreading types of groundnut are more infested by mites than the bunchy types.
- Nymphs and adults suck sap from the underside of the leaves.
- Whitish leaves and fine webbing appear, mainly on the underside of the leaves.

➢ **Control Measures:-**

- **Foliar Application of MIGHTY or KRISHAB No.1**
- **To Get Better Results to control Red spider mite, Spray During Afternoon Hours.**

Dosage: 2.5 ML per Ltr of Water

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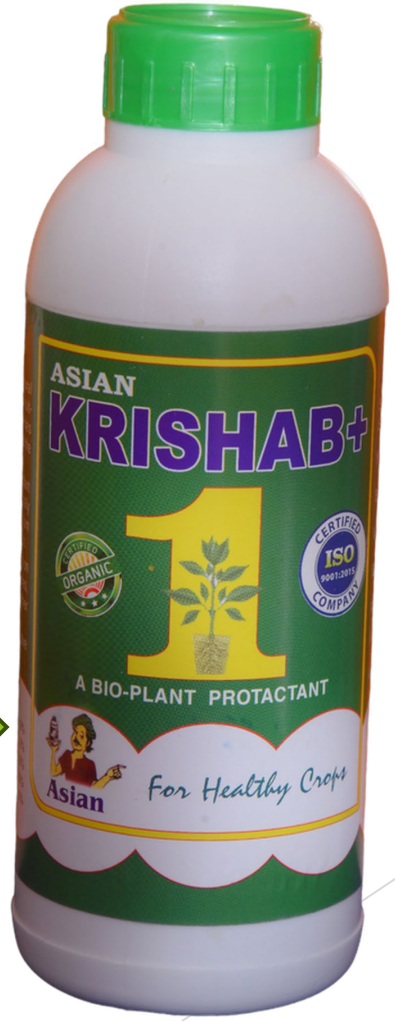
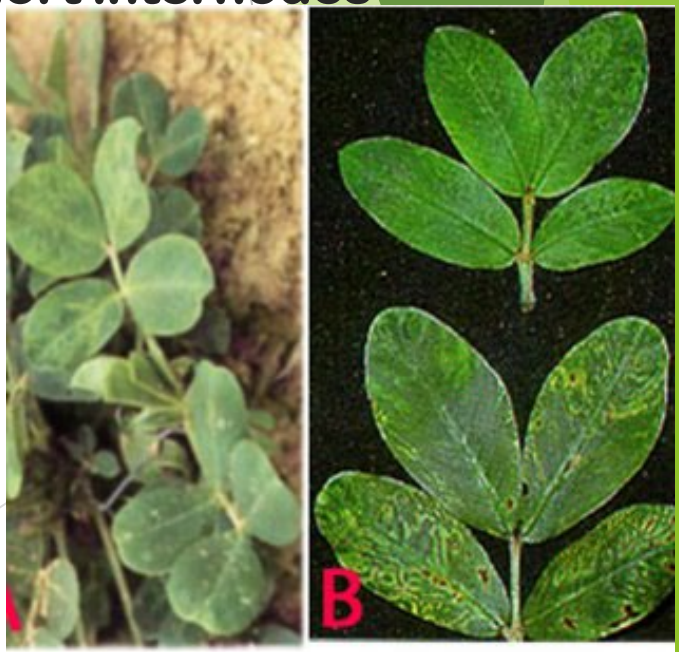


BUD NECROSIS

SYMPTOMS OF DAMAGE:-

- Bud necrosis symptoms first appear on young leaflets as chlorotic sports or mottling that may develop into chlorotic and necrotic rings and streaks.
- Terminal bud necrosis occurs when temperatures are relatively high.
- As the plant matures, it becomes generally stunted with short internodes and proliferation of auxiliary shoots.
- More observed in delayed Summer/Rabi planting
- Conditions: Transmitted by Thrips.



➢ Control Measures:-

- Foliar Application of **RULER** & **NEEMEX**

Dosage: 2.5 ML per Ltr of Water

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DISEASE MANAGEMENT

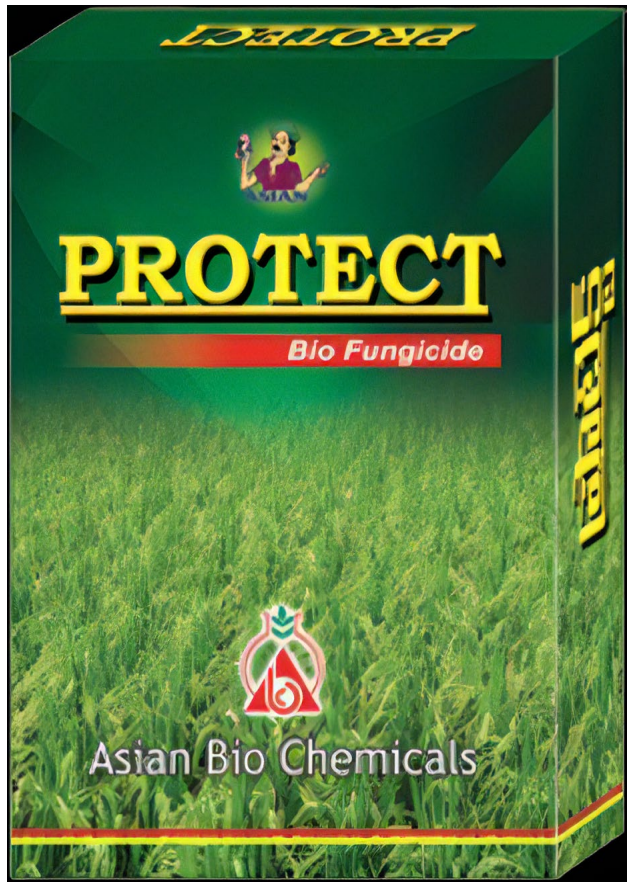
EARLY LEAF SPOT (TIKKA LEAF SPOT) / LATE LEAF SPOT:

SYMPTOMS OF DAMAGE:

- Tikka disease, specifically early leaf spot caused by Cercospora arachidicola, is a serious fungal disease in groundnut, causing brown spots with yellow halos on leaves, leading to premature defoliation and significantly reduced yields.
- Late leaf spot, caused by Phaeoisariopsis Personata, is a serious fungal disease in groundnut that leads to dark brown to black spots on leaves, often coalescing into larger patches, causing defoliation and potentially significant yield losses
- The pathogen survives in infected plant debris and seeds, and spores are spread by wind and rain, causing primary and secondary infections.
- Management strategies include planting resistant varieties, adjusting planting times, removing plant debris, controlling weeds, and using fungicide sprays.

➢ Control Measures:-

- Foliar Application of **PROTECT** & **AGROCINE 8000**



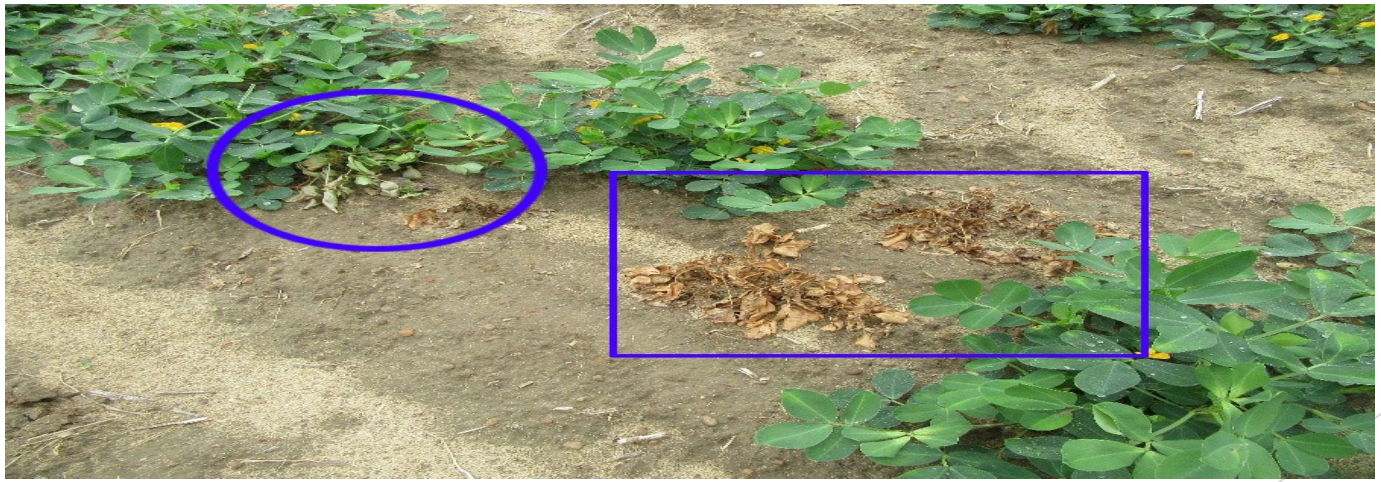
Dosage: 3 GM per Ltr of Water

Dosage: 0.2 GM per Ltr of Water

➢ ASPERGILLUS CROWN ROT / STEM ROT:

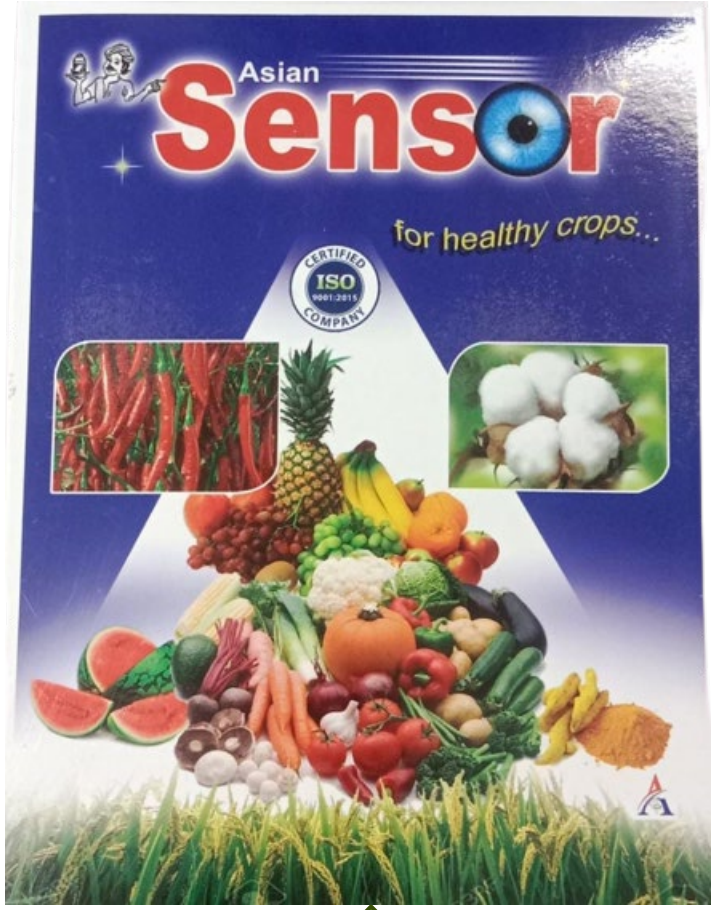
➢ SYMPTOMS OF DAMAGE:

- Aspergillus crown rot, caused by Aspergillus Niger, in groundnut primarily damages seedlings, causing seedling blight or damping off, characterized by water-soaked, light brown lesions that lead to seedling collapse and death.
- Permanent wilt of branches or entire plant.
- The fungus is spread through air, soil, and water.
- Groundnut stem rot, caused by the soilborne pathogen Sclerotium Rolfson, leads to significant yield losses, often causing wilting, yellowing, and rotting of stems and branches, potentially leading to plant death.
- Yellowing and wilting of lower branches and main stems.
- Lesions are developing on the stem below the soil line and spreading upwards.
- Poor root growth and rotting on the stem.



➢ Control Measures :-

- Drenching Application of SENSOR & AGROCINE 8000



Dosage: 2.5 GM per Ltr of Water

Dosage:0.2 GM per Ltr of Water

ASIAN

THANK YOU