

# Diseases and Pests of Leafy Vegetables



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# Important leafy vegetables and their botanical names

S. No.	Common Name	Scientific name	Family
1	Amaranthus	<i>Amaranthus</i> spp.	Amaranthaceae
2	Spinach beet	<i>Beta vulgaris</i> var. <i>bengalensis</i> Roxb.	Chenopodiaceae
3	Spinach	<i>Spinacia oleracea</i>	Chenopodiaceae
4	Fenugreek	<i>Trigonella foenum</i>	Leguminosae
5	Indian Spinach	<i>Basella rubra</i> var. <i>alba</i>	Basellaceae
6	Portulaca	<i>Portulaca oleracea</i>	Portulacaceae
7	Drumstick	<i>Moringa oleifera</i>	Moringaceae
8	Curry leaf	<i>Murraya koenigii</i>	Rutaceae
9.	Lettuce	<i>Lactuca sativa</i>	

# Plant protection measures of leafy vegetables

## Insect Pests

- ❖ Aphids (*Aphis* spp.)
- ❖ Leaf eating caterpillar (*Laphygma exigua*)
- ❖ Whitefly (*Bemisia tabaci*)
- ❖ Stink bugs (*Nezara viridula*)

## Diseases

- Damping off (*Pythium* spp.)
- Leaf spot diseases (*Cercospora beticola*, *Heterosporium variable* and *Phyllosticta chenopodii*)
- Downy mildew (*Peronospora spinaciae*)
- White rust (*Albugo occidentalis*)
- Root rot (*Rhizoctonia solani*)
- Powdery mildew (*Erysiphe polygoni*, *Laveillula taurica*)
- Rust (*Uromyces anthyllidis*)

# Insect Pests

## 1. Aphids (*Aphis* spp.)

- ✓ **Symptoms:** Minute insects suck the sap from the foliage resulting in twisting of leaves
- ✓ **Control:** Spray the crop with Malathion (0.1%) or methyl demeton (0.03%) and harvest after 7 days.



## 2. Leaf eating caterpillar (*Laphygma exigua*)

- ✓ **Symptoms:** Caterpillars make holes in the leaves and deteriorate the quality of produce.
- ✓ **Control:** Spray malathion (0.1%). Leaves should not be consumed before a week of spray.



## 3. Stink bugs (*Nezara viridula*)

✓ **Symptoms:** Bugs suck the sap from leaves and stems leading to vigor loss.

✓ **Control:** Spray dimethoate (0.03 %) or quinalphos (0.05 %).





## 4. Whitefly (*Bemisia tabaci*)

- ✓ **Symptoms:** This pest sucks the sap from plants and causes loss in vigor.
- ✓ **Control:** Spray neem oil (0.5 %) or methyl demeton (0.03 %).



# Diseases

## 1. Damping off (*Pythium* spp.)

- ✓ **Symptoms:** Fungus attacks the plant just after emergence. The affected seedlings fall on the ground and die.
- ✓ **Control:** Provide good drainage, seed treatment with Captan or Thiram @ 2g/ kg seed.





## 2. Leaf spot diseases (*Cercospora beticola*)

- ✓ **Symptoms:** Small circular-sub circular spots with grey centers surrounded by red margins appear on the leaves.
- ✓ **Control:** Spray Bavistin or DM-45 @ 0.2 % at 15 days interval starting from the appearance of symptoms.



## 3. Downy mildew (*Peronospora spinaciae*)

- ✓ **Symptoms:** Grey brown spots of mould appear on the under surface of leaves.
- ✓ **Control:** crop rotation, removal of crop debris, seed treatment with Captan or Thiram @ 2 g/kg seed before sowing or spray crop with DM- 45 @ 0.2 %.



## 4. White rust (*Albugo occidentalis*)

- ✓ **Symptoms:** The appearance of white blisters on the lower surface of leaves and on the upper surface opposite to blister, the development of yellow patches are the characteristic symptoms.
- ✓ **Control:** Crop rotation, removal of weeds and spray of Bordeaux mixture (1 %) or Diathane M-45 (0.2 %).



## 5. Root rot (*Rhizoctonia solani*)

- ✓ **Symptoms:** Symptoms include varying degrees of rotting of the root leading to foliage yellowing in 30-45 days old plants. Affected plants wither and dry up.
- ✓ **Control:** Seed dressing with carbendazim (0.1 %) or two soil drenchings with 0.1 % carbendazim.



## 6. Powdery mildew (*Erysiphe polygoni*, *Laveillula taurica*)

- ✓ **Symptoms:** Symptoms include the appearance of whitish fungal growth on leaves.
- ✓ **Control:** 2 Sprays of sulphur (0.2 %) or Karathane (0.05 %).



## 7. Rust (*Uromyces anthyllidis*)

- ✓ **Symptoms:** Disease is observed in the form of minute brown pustules on both the surfaces of leaves.
- ✓ **Control:** Spraying the plants with Benomyl, Mancozeb and Maneb has been suggested as the effective chemical control measures.





# References

1. Textbook of Vegetables, Tuber crops and Spices- S Thamburaj and Narendra Singh
2. Vegetable Crops Production Technology (Vol II)- M.S. Fageria

