

Symptoms

- Rapid death of stem several inches below the dead bud.
- Bending of the dead stem to produce a 'Shepherd's crook' appearance



False flower bud
(Photo Collins Kentegra)

Management

Integrated management of false flower bud disease is the combination of strategies used to control frost and nematodes which cause this disease.

- Use sprinkler irrigation on young plants if they are affected by frost.
- Practice Integrated Pest Management of nematodes if affected by nematodes using cultural and practices chemical controls.

Cultural practices

- Practice crop rotation with crops in the grass family for 4-6 seasons

- Prevent surface run off to avoid spread of the pest to non-infected areas
- Uproot and burn affected plants
- Carry out soil solarization by exposing soil to high temperatures during dry months.

Chemical control

- Use biopesticides (Achook, Nimbecidine and Trianium P.) according to the manufacturer recommendation.



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Pyrethrum Bud Diseases and Their Management





Introduction

Pyrethrum bud diseases result into death of the flower buds. The disease can destroy up to 80% of the buds within 14 days. The disease is prevalent in cold and wet weather conditions. There are two bud diseases of pyrethrum. True bud disease and false bud disease. True bud disease is caused by several fungal pathogens where as false bud disease is caused by nematodes and frost.

True Bud Disease

The disease is caused by fungi such as *Ascochyta* sp., *Alternaria* sp. And *Ramularia bellunensis*).

It can lead to significant yield loss of 30% to 100% and reduced quality of pyrethrins content.

Conditions that favour disease development

Epidemic outbreaks occur during prolonged foggy and rainy weather conditions. The fungus normally affects the flower buds only and infection occurs through the bracts. It may later invade the flower stalks and forms a crooked shape facing downwards.

The fungus can also be spread during plant propagation (splits)

How the disease manifests it self

Symptoms

- The fungus attack young buds and flowers.
- Flower buds dry up and turn brown or purplish grey.
- Flower growth is retarded resulting in deformed buds or flower which bends over to the diseased side.



*True Bud Disease of Pyrethrum.
(Janet Obanyi, 2022)*

Management

Integrated management of the true bud disease involves the combination of cultural practices, bio-control and chemical control as discussed.

Cultural practices

- Plant clean quality seed/splits/seedlings.
- Practice crop rotation with maize and /or



*Bud disease
(Collins and Micah, Kentegra)*

legumes for 2-3 seasons.

- Plough crop residues 2 feet deep after completion of the crop cycle.
- Remove crop residues from the field after completion of the crop cycle.
- Weed and remove volunteer plants that carry over the pathogen from season to season.

Chemical control

- Spray plantlets or seedlings or plants with Azoxystrobin based products such as azoxy Top 325SC and Carbendazim based products such as Rodazim 500SC at recommended rates as per the product label.
- Apply organic copper or organic sulphur at the onset and during wet and cold seasons.

False Flower bud disease

The disease is caused by the nematode *Aphelenchoides ritsema-bosi* and also by frost.

Yield losses of 10-30% due to false bud disease infection and frost have been reported.