



# MANAGEMENT OF SOME COMMON WEEDS IN BANANA ORCHARD





## Introduction

Weeds are plants that grow where they are not wanted.



*Some common weeds in banana orchard (Source: Ngugi C.N.)*

Invasion of weeds in banana orchards affect the ecological balance of communities, natural diversity, interferes with the environment aesthetic value and productivity. Uncontrolled weeds lower crop yield through competition for light, nutrients and space. Some weeds release toxic substances or exudates



which prevent crop growth (allelopathy); reduce the quality of harvested agricultural products; interfere with harvest operations increasing harvesting cost for both small holder and large-scale farms. Other weeds are poisonous to man and livestock as well as being alternate hosts to crop diseases and pests.

In farming, the early /vegetative stages are vital for the growth of banana trees. Crop management practices such as application of manure and fertilizers, irrigation and good sunshine leads in the establishment of various grass and broad leaf weeds in banana orchards. Weed management must be carried out early enough to prevent resources competition (nutrients, water, light,) buildup of weed seed bank, and prevent pest and diseases infestation.

Various broadleaved, grass, annual, and perennial, weed establish banana in orchards, with population depending on different environmental factors. The guiding principle is that banana orchards should be kept weed-free. The crop is shallow-rooted, thus care should be taken during weeding to avoid root injury. Some common weeds in banana orchards include couch grass, pigweed, wandering jew, gallant soldier, blackjack, goat and sow thistle

### **Couch grass** (*Cynodon dactylon*)

Couch grass is an invasive harmful perennial weed with strong rhizomes /stolons and flowering stems that end in a spiral network. The weed is common in almost all soil types. It produces seeds that germinate and sprout profusely. It can be used to manage soil erosion but is extremely difficult to eradicate it.

Couch grass weed competes for moisture in plots reflecting to yield loss of banana fruit in most areas. The grass takes up much of the moisture from the plant base of the banana trees. Efforts to manually suppress the weeds are complicated by rainfall torrential in wetter areas.



*Couch grass full colonization (Source: Ngugi C.N.)*

## **Control**

- Control the weed before flowering.
- Consistent follow-up work.
- Establishment of cover crops e.g. legumes to smother the weed as it does not tolerate deep shade.
- Double ploughing to 60 cm to uproot its rhizomes and stolons.
- Timely application of selective herbicide where production on large acreage takes place.

## **Pig weed (*Amaranthus hybridus*)**

Pig weed is troublesome to many crops globally. The weed may establish before or at the same time with the crop and competes for space, water and nutrients. It is a prolific seed producer and may cause 5 – 100% crop yield loss based on its density, establishment time and duration of competition. Yield loss as high as 50% has been reported on young bananas due to competition for moisture and space.





*Pig weed (Amaranthus hybridus) (Source: Mwangi H.)*

Pig weed seeds have multiple dormancy mechanisms, so seeds germinate at different times over the next several years. This enhances the weed's long-term persistence.

### **Control**

- Timely cultivation and manual removal.
- Establishment of cover crops e.g. beans.
- Use of hand machines on smaller acreage.
- Use of herbicide is recommended where the acreage is large.
- Young banana trees, heavy straw mulch down rows during the first few establishment years may be useful.
- In older banana orchards, weed management stress is usually less problematic due to shading and leaf litter.

### **Wandering jew (*Commelina benghalensis*)**

Wandering jew weed is invasive, a soft, hairless, perennial and creeping plant. Its stem has nodes that root on touching the soil. The plant has dark green shiny, smooth and oval leaves with pointed tips. It can withstand deep shade and shallow soils. Wandering jew has high vegetative reproductive rate; propagules that can remain viable for over a year.





*Wandering Jew, a common weed in most areas ( Source: Momanyi V.)*

## Management

Proper land preparation

### Mechanical control

- Hand hoeing, pulling and shaking the plants to remove soil, spread and leave them to dry for more than a week.
- Removing the plants from fields and drying.
- Use of ox-drawn and tractor-drawn cultivation. Hand machines could be used in smaller acreage (5-10 acres).
- Slashing and herbicide application.

**Note:** Mechanical controls are not very effective as the cut stems quickly regenerate into new plants, especially in wet conditions.

### Chemical control

- Relatively difficult to control by herbicides but young plants are susceptible.

### Galant soldier (*Galinsoga parviflora*)

The gallant soldier weed is common in most banana orchards in Kenya. It is fast-growing annual plant that invade agricultural and other disturbed areas'. The weed can grow to a height of 60 cm. It is highly competitive and can spread



quickly, covering field. The weed produces seeds with high germination rate and capable of immediate germination.



*The bright flowers of Gallant soldier weed (Source: Momanyi V.)*

## Control

- Mulching using black polythene
- Hand weeding on light and moderate weed infestation
- Hand machines could be used in smaller acreage and herbicides in large areas
- Scouting for presence of Galant Soldier (Weekly monitoring)
- Timely application of appropriate herbicides where production on large acreage takes place.

## Black jack weed (*Bidens pilosa*)

Blackjack is a noxious, annual upright weed that grows up to 1.5 m. The fruits have hooked bristles that attach on clothing, mammalian fur and bird feathers. The weed seeds remain viable in the soil for a long time and germinates fast after tillage, affecting crop growth.



*Mature black jack plant (Source: Momanyi V.)*

It becomes uncomfortable to pass through fields colonized with mature spikes.

### **Control**

- Continuous mowing to discourages weed growth
- Hoeing and hand pulling to prevent seed production.
- Hand machines could be used in smaller acreages
- Selective herbicides in large acreages can be used to eliminate Black jack

### **Goat weed (*Ageratum conyzoides*)**

Goat weed is invasive in most parts of Kenya. It is an annual upright, about one meter tall with fine white hairs. It develops purple, blue, pinkish or white flowers. It is a short cycle plant (germination to flowering) of less than two months. Seeds germination is light dependent (are photoblastic) and lose viability with time.





*Goat weed (Source: Momanyi V.)*

## **Control**

- Scouting
- Mechanically weed (using farm implements) the crop fields and use the trash for mulching
- Remove by hand at low densities
- Use of herbicide in large areas
- Following all instructions and safety requirements
- Hand machines could be used in smaller acreage

## **Sow Thistle Weed (*Sonchus oleraceae*)**

Sow thistle weeds are coarse, erect and grow up to 1.4 m. Flower heads mature into white, fluffy seed heads. The weed is adaptable to different environments; remain viable over one year and have high reproductive potential. It is alternate host for pests (white flies, leaf mining and gall forming flies and aphids) and diseases (powdery mildew, water moulds, botrytis and rusts).



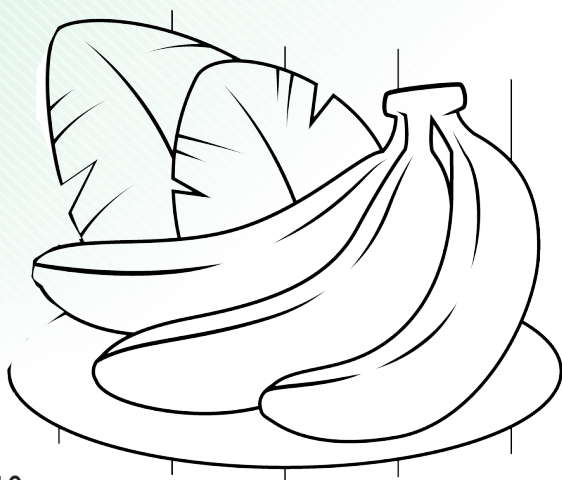


*Sow thistle weed (Source: Momanyi V.)*

### **Control**

- Scouting
- Hand cultivation/pulling out
- Timely application of selective herbicide where in large acreages

**Note:** Always consult recent list of registered herbicides at Pest Control Products Board (PCPB) ([www.pcpb.go.ke](http://www.pcpb.go.ke))







**Compiled by:** Momanyi, V., Ngugi, C.N., Gathambiri, C.W and Wasilwa, L.

**Edited by:** Nyabundi, K.W., Maina, F.W., Mukundi, K.T., Maina, P.,  
Wanyama, H.N. and Ekadeli, J.

**Design and Layout:** Nogrecia Mnene

**For more information, contact:**

The Institute Director  
Horticulture Research Institute.  
P.O. Box 220-01000, Thika.

KALRO CALL CENTRE: 0111010100

**KALRO/NAVCDP/BANANA/Pamphlet No. 135/2024**

