

PYRETHRUM PRODUCTION

Climatic conditions, ecological zone

It is grown in Altitude of 1800-3000m a.s.l with a rainfall above 750mm pa. The soils are expected to be fertile, deep and well-drained, loamy volcanic soils with a pH >5.6. The temperature should be less than 18⁰ C for at least 6 weeks.

Ecological Requirement

Altitude: 1800-3000m a.s.l

Rainfall: Above 750mm pa

Soils: Fertile, deep and well-drained, loamy volcanic soils, pH >5.6

Temperature: Less than 18⁰ C for at least 6 weeks.

Land preparation: Plough before the onset of rains and eliminate perennial weeds .

Plough before the onset of rains and eliminate perennial weeds. Planting is done in holes of 10x15cm. Propagate clones by splitting of mature plants or tissue-culture Raise varieties in a nursery first but uproot and discard after 4 years. In Kenya, pyrethrum is cultivated almost entirely by small-scale farmers (Figure____) The crop is favored by cool temperatures, which occur in the higher altitude (1800-2900m). Higher temperatures and dry weather have negative effects on flower yields and pyrethrins content.

Planting: Holes 10x15cm. Propagate clones by splitting of mature plants or tissue-culture Raise varieties in a nursery first but uproot and discard after 4 years

Spacing: 30 x 60-90cm.

Cutting back: Done annually near the end of the dry season followed by weeding and earthing up. However, a new crop is established after 3-4 years.

Fertilizer: 5g DAP per hole at planting and 250-300kg/ha of TSP per hole after cutting back

Manure: 10ton/ha (a handful per hole) for poor soils 3 months before planting

Weeding: This operation can either be carried out through mechanical or chemical methods

- i. **Mechanical weeding:** With forked implements from the first month after establishment until the crop has fully covered the ground. After 2-3 months, earth up to encourage tillering
- ii. **Chemical weeding:** Use herbicides e.g. Sencor, Venzar-Sencor-Ronstar

Rotation: Once every 3-4 years

Intercropping: Intercrop with short duration legumes after crop cutting back

Table 2: Important pests and their control in pyrethrum growing

Pest	Symptoms	Control
Pyrethrum thrips Onion or Flower (<i>nigropilosus</i> , (<i>tabaci</i>	<ul style="list-style-type: none"> – Dirty silvery patches on leaves. – Brown disc florets and ray florets – Premature drying of flowers 	<ul style="list-style-type: none"> – Use insecticides such as Anthio, Lebacid and Metasystox
Green Peach aphids (<i>Myzus persicae</i>)	<ul style="list-style-type: none"> – Distorted young shoots and leaves. 	<ul style="list-style-type: none"> – Use insecticides such as Anthio, Lebacid and Metasystox
Red spider mites (<i>Tetranychus huedeni</i>)	<ul style="list-style-type: none"> – Yellow mites that turn to dark red 	<ul style="list-style-type: none"> – Use insecticides such as Anthio, Leaked and Metasystox
Root Knot Nematode (<i>Meloidogyne hapla</i>)	<ul style="list-style-type: none"> – Root knots 	<ul style="list-style-type: none"> – Use clean planting material – Plant tolerant clones/varieties – Rotate with grass or cereals – Use of nematicides e.g. Nematicur/ Mocap at planting
Moles	<ul style="list-style-type: none"> – Withering and death of plants 	<ul style="list-style-type: none"> – Trapping or Fukokill

Important diseases and their control and their control

Disease	Symptoms	Control
True bud diseases (<i>Ramularia bellunensis</i> <i>Alternaria sp</i> and <i>Ascohyta sp</i>)	<ul style="list-style-type: none"> – Dry flower buds that turn brown or purplish grey – Retarded flower growth – Deformed bud or flower 	<ul style="list-style-type: none"> – Use clean planting material – Remove (Rogue) infected plants – Cut back at the end of the season and discard/burn the stalks – Plant resistant varieties
False bud disease (<i>Aphelenchoides rttsema-bosi</i>).	<ul style="list-style-type: none"> – Dry flower buds – Brown blotches on leaves – Buds die off and bend showing a "shephards 	<ul style="list-style-type: none"> – Plant resistant varieties - Use splits from healthy plants – After harvesting, cut back the plants and burn the stalks

	crool" formation	
Root rots <i>(Fusarium, Rhizoctonia Sclerotonia and Ascochyta sp.)</i>	<ul style="list-style-type: none"> - Slow wilting and drying of leaves and ultimate death of the plant 	<ul style="list-style-type: none"> - Use splits from healthy plants - Dip splits in fungicides e.g. Ridomil
Fusarium wilt <i>(Rhizoctonia solanum; Sclerotinia sp & Fusarium sp)</i>	<ul style="list-style-type: none"> - Rapid wilting during dry weather - Wilting and drying of the whole plant 	<ul style="list-style-type: none"> - Crop rotation - Dip splits in fungicide solution e.g. Recoil, Benlate - Use splits from healthy plants