# Red spider mites in tomato

*Tetranychus* spp.

**Prevention**
- Ensure plants that you purchase are not already infected. Check the underside of leaves before purchasing or bringing them to the field.
- Plant away from strawberries, melons, beans, eggplants and ornamental flowers which could harbor the mites.
- Space plants fairly far apart (100cm X 60cm). This provides space so that mites cannot move from plant to plant. For grown-up tomatoes, a few inches or centimetres should remain between them.
- Keep the field weed-free especially those that are alternative hosts such as *Solanum nigrum* (in Tonga language: Nduwe).

**Monitoring**
- Spider mites are nearly too small to see, but can be seen with a hand lens. They never have wings.
- Check your plants weekly for signs of infestation.
- They attack undersides of leaves, but cause tiny white yellowish spots on both leaf surfaces.
- At heavy mite feeding, leaves become silvery.
- Mites produce fine webbing. Heavily infested leaves covered with fine webs, may dry up.
- Randomly select 20 tomato plants and assess level of damage by mites.
- Select 3 leaflets/plant by using a damage leaf index ranking from 1 to 5 (1 is some yellow tiny spots underside leaves, 5 is leaf totally covered with spots and web, dry patches occur).
- Once the average damage level exceeds the first rank (some yellow tiny spots underside leaves), control measures may be considered.

**Direct Control**
- Support natural predators such as ladybugs, lacewing, and predatory mites, by not spraying pesticides.
- Remove any infected young plants. Discard these plants outside the field; do not compost them as this will spread the pest. Burning is not allowed in many areas of Zambia.
- Spray plants using a stream of water to knock mites off the underside of leaves. Be careful not to spray them onto another plant. Do not use this method when tomato diseases are in the field.
- Spray hot pepper wax solutions onto leaves (underside) to kill the mites. Prepare chilli by adding about 20 grams (2 handfuls) in 1 litre of water, keep for 1 day and dilute with 5 litres of water. Repeat spray weekly to kill the newly hatched mites.

**Direct Control**
- Chemical pesticide use encourages the spread of spider mites by killing the beneficial insects. Mites quickly develop resistance to pesticides. For these reasons, it's important to control mites with natural methods, and rarely and only at high mite infestation with chemicals.

**Restrictions**
- When using a pesticide or botanical, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, pre-harvest interval, max number of sprays, restricted re-entry interval. Do not empty into drains and water sources.
- WHO toxicity class II pesticides might not be allowed in local IPM schemes. Always consult recent list of registered pesticides of ZEMA.
- Abamectin -based products (AbamillPlus, Dimectin, Biomecctin, Hypermectin, Mectli, and others). Chloride channel activator group of avermectin pesticides.
- WHO class U, unlikely acute hazardous; p.h.i. 3d; restricted re-entry interval 1d; min retreatment 7d, max 3 sprays. Toxic to bees and aquatic organism.

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**Zambia**

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**Images:**  
- Two-spotted spider mite. Adult female 0.6 mm long. The male is smaller (photo © Horticulture Research International)  
- Whitish spots and fruit cracking due to mite damage (Photo: A. M. Varela, icipe)