White fly management in outdoor tomatoes

Recognize the problem
White flies ("Inzi weupe" in Swahili) are tiny, 2 mm long, winged insects. They usually sit on the underside of leaves, and fly off when you shake the plants. They suck plant sap from the leaves, but are mainly problematic because they transmit tomato viruses.

Background
Tomato plants usually tolerate a few white flies per leaf but if tomato viruses occur in the area, just a few white flies per entire plant are enough to transmit the virus. To prevent virus infections, early control of white flies on seed beds or in young plantings is needed. However, this is difficult.

Management
To prevent the problem:
• If possible, do not place seed beds or tomato fields near fields with whiteflies because of virus transmission
• Remove weeds prior to planting because some weeds can host whiteflies
• Plant during or shortly after the rainy season if possible
• Intercrop with bean, cucumber or maize to delay white fly multiplication
• Plant Trigonella fenugreek or coriander into the tomato field because they repel whiteflies. Be aware that coriander may attract aphids.
• Plant tobacco as a trap crop near tomatoes because its flowers attract whiteflies. Consider action if you see many white flies flying off the shaken plants, or if you find few white flies AND know about a tomato virus occurrence in the area. All sprays should be done in the morning. Try to reach the underside of all leaves, because most white flies feed there:
  • Spray Neem-based products, for example nimbecidine, max. 3 times per season. Start two weeks after transplanting (3 litres product/ha or ¼ of a cup/20 litres water per knapsack sprayer) or dissolve 20–50g grinded neem seed cake per litre water.
  • Stir 3 tablespoons liquid soap, e.g. Cera-liquid, with 4 litres water. This spray is effective in the morning during wet weather. Spray every week as long as you see whiteflies.
  • Stir 2-4 tablespoons of fine maize, cereal or potato flour in 4 cups warm water, then add 1 tablespoon of soap, stir, filter, add 10 litres water and spray. Spray every week, max 3 times.
  • Chop 30-40 hot peppers or 1/2 a litre of hot pepper powder into a 10 litre bucket of warm water (not boiling). Let liquid steep (infuse) for 1 day, remove the pepper and dilute with another 10 litres cold water in the knapsack sprayer. Add 20 drops of dishwashing soap. Spray max twice per season in a one week interval.
  • Grind 2 handfuls of wild basil leaves, soak overnight in 2-3 litres water, strain, add 1 tablespoon of soap powder or 20 drops of soap then spray over unripe tomatoes. Spray early in the morning only.

When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval.

Scientific name(s) > Bemisia tabaci

The recommendations in this factsheet are relevant to: Tanzania

Authors: Adeltruda Massawe, Mansuet Tilya, Martin Kimani, Richard Musebe, Mwangi Jubilant Horti Tengeru, Tanzania

Edited by Plantwise

Plantwise is a global initiative led by CABI

Lose Less, Feed More