

Increasing pollinators for more fruits in cashew

Recognize the problem

Cashew is an important crop due to its nutritional value and commercial status. However, inadequate pollination plays an important role in low productivity of the crop in addition to other factors. Despite the country having a potential of producing up to 25,000 tonnes of cashew nuts from the 4000 ha under cashew production, current cashew production stands at a meagre 1,000 tonnes. This is mainly due to small bee populations which can be easily seen by the low number of bees visiting the cashew flowers. Lack of pollination is also seen by poor fruit set where few flowers result in formation of the fruits.

Background

Fruit set can only be achieved through successful pollination. Cashew is mainly pollinated by bees, ants and butterflies. Wind plays a minor role in pollination. Of all the pollinators of cashew, honey bees, solitary bees and bumble bees are most efficient. Enhancing pollination by promoting pollinator populations increases cashew fruit-set, which can increase yields by up to 200%.

Pollinators need food, such as pollen or the nectar of flowers, and breeding places. Some breed in the soil or sand, some breed in trees and some, such as honey bees, are bred by farmers. Moreover, pollinators are killed by many insecticides and by some fungicides.

Management

Avoid practices which lead to pollinator decline.

- Avoid early burning, indiscriminate cutting down of trees and chitemene
- Avoid ploughing soils within and near the orchard as this destroys the nests of soil-living bees; leave at least some areas unploughed
- Avoid excessive use of pesticides and use cultural and mechanical pest control strategies first.

Use practices which support pollination:

- Place bee hives in or near cashew orchards
- Preserve natural vegetation of surrounding trees and shrubs which will promote pollinators but also natural enemies of insect pests
- Keep flowering weeds under cashew trees
- During the rainy season, plant brightly coloured flower strips around the orchards to attract pollinators and to provide food to them
- Leave bare patches of ground to promote bees that nest in the soil
- Use pesticides that are less toxic to bees such as neem or insect growth regulators
- Always check labels of pesticide for bee toxicity levels
- Apply pesticides just after sunset when bees are not flying around anymore
- Do not apply pesticides when cashew trees or nearby crops are flowering

Soil nesting bees are important pollinators. (Photo by Breno Magalhães Freitas, CETAPIS/UFERSA)



Soil nesting bees are important pollinators. (Photo by Margarita López-Urbe, Cornell University)



The recommendations in this factsheet are relevant to: Malawi, Tanzania, Zambia, Zimbabwe



Authors: Mathews Matimelo
Zambia Agricultural Research Institute ZARI of Ministry of Agic. & Livestock
tel: +260977601065 email: yamiko2006@yahoo.com

Edited by Plantwise.