Using Tithonia as a green manure in tomato

Recognize the problem
Tomato requires a lot of fertilisation to yield well. The major nutrients are potassium, phosphorous, nitrogen and calcium.

Background
Fertilisation of tomatoes is needed, but synthetic fertilizers increase the cost of producing the crop. Other means of fertilization can help to reduce the costs. For example, planting green manure plants can help to improve the soil. *Tithonia* plants are one such option. *Tithonia*, also known as Mexican sunflower, is a wild plant that has soft long stems and produces small yellow flowers. It is a crop that grows mostly wildly but can also be planted. *Tithonia* can accumulate large amounts of both nitrogen and phosphorus from the soil. Such nutrients are limited for tomato production in many Zambian agricultural soils. Therefore *Tithonia* can be planted to serve as a green manure plant or collected for mulching to provide green manure for the tomatoes. When cutting, shredding, or ploughing under the *Tithonia* plants, they rot easily to improve soil structure.

Management
- *Tithonia* can be found growing wildly or can be grown by spreading seed in the ground. Seeds can be collected from wild plants or purchased in an agro-input dealer shop.
- You can plant *Tithonia* as an intercrop, or in the season prior to tomato growing. Then, plants should be ploughed under before tomato growing.
- Alternatively, use chopped *Tithonia* as fertilizers:
  - Cut back leaves and soft twigs of *Tithonia* before they flower
  - Chop them into small pieces because if not cut into small pieces they can re-germinate
  - As a basal dressing, place 2 double handfuls (400g) of freshly chopped leaves and soft twigs in each planting hole for tomato, about 2 weeks before transplanting
  - As a top dressing fertiliser, 2 double handfuls of chopped *Tithonia* are applied 2 weeks after germination. Apply at the base of the tomato plants.

Scientific name(s) > *Tithonia diversifolia*

The recommendations in this factsheet are relevant to: Zambia

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