Marigold for Companion Planting

Tim Motis

Companion planting is a form of intercropping, typically practiced in small-scale gardens, in which two or more species of plants are grown near each other for shared benefit. For example, shade-loving vegetables like lettuce can be grown under taller crops like maize or sunflower. Mixed plantings are established to boost crop productivity, diversify options for food and income generation, and improve gardens' resilience under difficult growing conditions.

Flowering plants can benefit garden or field crops in some interesting ways. In Issue 18 (https://c.ymcdn.com/sites/echocommunity.site-ym.com/resource/collection/0ADF35ED-72B3-44AA-92B5-D50F9B4A741D/Asia_Notes_18_Round_Two.pdf) of *ECHO Asia Notes*, Dr. Abram Bicksler shared that certain flowering plants can:

- repel or confuse harmful insects
- attract insects, birds, frogs and other creatures that eat harmful pests
- attract pests to themselves, thereby minimizing damage to a main crop
- add beauty to a garden or field

ECHO's Florida Seed Bank has obtained two marigold varieties, 'Crackerjack Mix' (African marigold; *Tagetes erecta*) and 'Sparky Mix' (French marigold; *Tagetes patula*). Both "African" and "French" marigolds actually come from Mexico and Central America (see Taylor 2011 for a historical account of the naming of marigold species). African marigold plants grow to 90 cm (3 ft) in height, producing large flowers that range in color from yellow to deep orange. By comparison, French marigolds are shorter (15-45 cm [6-18 in]) and have smaller orange/red flowers.

Marigolds have a strong odor that both repels pests and makes it more difficult for insects to find the plants they would normally feed on. Marigolds have been reported to reduce a number of pests in various crops. Examples include:

- leafhopper (*Amrasca biguttula biguttula*) and whitefly (*Bemisia tabaci*) in eggplant (*Solanum melongena*) (Sujayanand *et al*. 2015)
- aphids (*Hyperomyzus lactucae* and *Macrosiphum euphorbiae*) in lettuce (*Lactuca sativa*) (Russo *et al*. 2005)
- root knot nematodes (*Meloidogyne* sp.) or symptoms in tomato (*Solanum lycopersicum*) (Abid and Maqbool 1990), cowpea (*Vigna unguiculata*) (Olabiyi and Oyedunmade 2007), sweet potato (*Ipomoea batatas*) (Kumar *et al*. 2005), and soybean (*Glycine max*) (El-Hamawi *et al*. 2004)

Not all nematode species are controlled by marigolds. Suppression of root knot nematodes is most likely to be effective when marigolds are established as a dense cover (with plants no more than 18 cm [7 in] apart) in advance of a main crop (Krueger *et al*. 2010).

More information about African marigold is found in an ECHO Asia Seed Fact Sheet

Figure 5. Marigolds (foreground; unknown variety) grown with Malabar spinach (background).
Photo: Tim Motis

(https://c.ymcdn.com/sites/echocommunity.site-ym.com/resource/collection/1F6F8C91-5D2E-455A-8D8F-2DBA05AC1D1B/Tagetes_erecta.pdf?hhSearchTerms=%22ECHO+and+Asia+and+seed+and+fact+and+sheet+and+tagetes+and+erecta%22). Plants and seed may already be available in the country in which you are working. Alternatively, see www.ECHOcommunity.org (https://www.echocommunity.org/) for information on how to register as an active development worker to request complementary trial packets of seed.

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