Advantages of Trap Crops in Natural and Organic Crop Cultivation

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A trap crop is a plant that attracts agricultural pests. This type of crops keep way the insects from target crops. This has an advantage of decimations of pests from artificial pesticide which make safer for consumptions. This type of trap crop plating near the main crop is also called as companion planting. This kind of trap crop planting can also be used in greenhouse structures and also in field experiments to keep away the pest from focal crop. It as seen that this small portion of trap crop shown to reduce pest damage at larger commercial scale. In use of trap crop it is more important to look in to the ratio of planting with the main crop. The trap crop which are used for peripheral planting acts as a barrier to pest entry. The trap crop which are planted as intercrops facilitates supplemental management practices to prevent pest dispersal to main crop. The main benefit of the trap crop is that it can reduce the quantity of pesticide can be used. One more additional strategy is to apply predator or parasitoids on the trap crop to destroy the pest present on trap crop. Main key factor is that the trap crop planting should be coincide with the pest's life cycle and destroying the pest before its life cycle finishes. Otherwise, it may get transfer to the main crop.

Methods of introducing trap crop

1. Perimeter trap cropping: Planting trap crop around the border of the main crop. e.g.: 1. Early panting of Potato to control Colorado beetle in Potato. 2. Planting of papaya 10m around the main papaya to control fly damage.
2. Sequential trap cropping: Planting trap crop as intercrop earlier or later than the main crop. e.g.: Planting of Indian mustard to control DBM in cabbage.
3. Multiple trap cropping: Planting more species as trap crop. e.g.: planting of castor, millet and soybean to control wireworm in sweet potato.
4. Push and pull trap cropping: Here two cropping, one is trap crop planting along with repellent crop planting along with the main crop.

Advantages: Economic and environmental benefit of trap cropping area. Conservation of soil and environment, increase productivity, enhance biodiversity, conserve natural enemies, reduce pesticide use

One should know: Grower should know proper knowledge about insect behaviour, migration for timely management.

Table 1. Examples of trap crop practices:

Trap crop	Main crop	Method of planting	Pest controlled
Alfalfa	Cotton	Strip intercrop	Lygus bug
Basil and marigold	Garlic	Border crops	Thrips
Castor plant	Cotton	Border crop	Heliotis sp.
Chervil	Vegetables Ornamentals	Among plants	Slugs
Chinese cabbage, mustard, and radish	Cabbage	Planted in every 15 rows of cabbage	Cabbage webworm, Flea hopper, Mustard aphid
Beans and other legumes	Corn	Row intercrop	Leafhopper, Leaf beetles Stalk borer, Fall armyworm
Chick pea	Cotton	Block trap crop at 20 plants/ sq m	Heliotis sp.
Collards	Cabbage	Border crop	Diamondback moth
Corn	Cotton	Row intercrop, planted in every 20 rows of cotton or every 10-15 m	Heliotis sp.

Cowpea	Cotton	Row intercrop in every 5 rows of cotton	Heliotis sp.
Desmodium	Corn, Cowpea, Millet, Sorghum	Row intercrop	Stemborer Striga
Dill and lovage	Tomato	Row intercrop	Tomato hornworm
Green beans	Soybean	Row intercrop	Mexican bean beetle
Horse radish	Potato	Intercrop	Colorado potato beetle
Hot cherry pepper	Bell pepper	Border crop	Pepper maggot
Indian mustard	Cabbage	Strip intercrop in between cabbage plots	Cabbage head caterpillar
Marigold	Solanaceous, Crucifers, Legumes, Cucurbits	Row/strip intercrop	Nematodes
Medic, Medicago litoralis	Carrot	Strip intercrop in between carrot plots	Carrot root fly
Napier grass	Corn	Intercrop, Border crop	Stemborer
Nasturtium	Cabbage	Row intercrop	Aphids, Flea beetle Cucumber beetle, Squash vine borer
Okra	Cotton	Border crop	Flower cotton weevil
Onion and garlic	Carrot	Border crops or barrier crops in between plots	Carrot root fly Thrips
Radish	Cabbage family	Row intercrop	Flea beetle, Root maggot
Rye	Soybean	Row intercrop	Corn seedling maggot
Sesbania	Soybean	Row intercrop at a distance of 15 m apart	Stink bug
Sickle pod	Soybean	Strip intercrop	Velvet bean caterpillar Green stink bug
Soybean	Corn	Row intercrop	Heliotis sp.
Sudan grass	Corn	Intercrop, Border crop	Stemborer
Sunflower	Cotton	Row intercrop in every 5 rows of cotton	Heliotis sp.
Tansy	Potato	Intercrop	Colorado potato beetle
Tobacco	Cotton	Row intercrop, planted in every 20 rows of cotton	Heliotis sp.
Tomato	Cabbage	Intercrop (Tomato is planted 2 weeks ahead at the plots' borders)	Diamondback moth
Vertiver grass	Corn	Perimeter crop	Corn stalk borer

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