



# Spiders And Mulch: Does It Work?\*

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**A**s early as 1921 spiders were recognized as potential enemies of pests such as leafhoppers. Recent studies (Susan Riechert, University of Tennessee, Knoxville) help confirm the importance of spiders in biological pest control for some vegetable crops. Vegetables mulched between rows with grassy mulches suffered 60% to 70% less plant damage than the same vegetables grown in unmulched test plots. The mulched plots had higher populations of spiders than did unmulched plots.

To see whether mulching might offer similar benefits to Northeastern gardeners, I compared spider and pest populations in mulched and unmulched potatoes. Pests, it appears, prefer unmulched plants. Mulched potatoes had only one third as many Colorado potato beetles as unmulched plants, and only 80% as many leafhoppers. Spiders, on the other hand, prefer the humid environment provided by mulches. Potatoes mulched with grassy hay had more than twice as many spiders as the un-mulched rows!

Mulching is not without problems, however. One year I lost some of my crop to meadow voles who took

up residence in the mulch. And last summer some straw mulch contained seeds, and we ended up with a marvelous cover crop of oats. Unfortunately, it was in the potatoes.

How can you attract spiders to your garden? First, make sure there's shelter for them. Spiders require high humidities and moderate temperatures, conditions that are often not available until emergence of annual crops. Between-row mulching with grasses and hay put down at time of planting provides shelter and favorable microhabitats for spiders. The mulch keeps the humidity high, and protects the spiders from temperature extremes. A compost heap near the garden, and patches of flowers or a wild border help create an attractive habitat for spiders and ensures availability of prey.

Spiders generally leave an area if their food source disappears, or if the area is disturbed by cultivation, mowing or harvest. Try to minimize this kind of disruption. We found that hilling potatoes using a walking tractor caused a temporary decrease in the spider population. Hedgerows, weedy strips, or old fields adjacent to your gardens can serve as

reservoirs for your spider population during times of disruption.

Consider, too, plant structure and spacing. Many spiders have a preference for particular heights above the ground. Movement through the crop by machinery will probably disturb the web-builders more than the hunters.

Because spider generations take a long time to mature, use of pesticides can drastically reduce their populations. Insecticides can reduce the overall predator and parasite population in crops by as much as 74%. Many gardeners are turning to botanicals as a "safe" alternative to chemical sprays. There is little information on the effects of botanicals (such as pyrethrum and rotenone) on spiders, though one source states that they are "relatively safe" with respect to harming beneficials. ☼

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