

Iowa State University 2001 Study: Catnip vs. DEET

[Catnip Repels Mosquitoes More Effectively Than DEET](#)

CHICAGO, August 27 — **Researchers report that nepetalactone, the essential oil in catnip that gives the plant its characteristic odor, is about ten times more effective at repelling mosquitoes than DEET** — the compound used in most commercial insect repellents. Entomologist Chris Peterson, Ph.D., with Joel Coats, Ph.D., chair of the university's entomology department, led the effort to test catnip's ability to repel mosquitoes. Peterson, a former post-doctoral research associate at the school, is now with the U.S. Department of Agriculture Forest Service, Wood Products Insects Research Unit, in Starkville, Miss.

In the laboratory, repellency is measured on a scale ranging from +100 percent, considered highly repellent, to -100 percent, considered a strong attractant. A compound with a +100 percent repellency rating would repel all mosquitoes, while -100 percent would attract them all. A rating of zero means half of the insects would stay on the treated side and half on the untreated side. In Peterson's tests, catnip ranged from +49 percent to +59 percent at high doses, and +39 percent to +53 percent at low doses. By comparison, at the same doses, DEET's repellency was only about +10 percent in this bioassay, he notes.

Peterson says nepetalactone is about 10 times more effective than DEET because it takes about one-tenth as much nepetalactone as DEET to have the same effect. Most commercial insect repellents contain about 5 percent to 25 percent DEET. Presumably, much less catnip oil would be needed in a formulation to have the same level of repellency as a DEET-based repellent.

Why catnip repels mosquitoes is still a mystery, says Peterson. "It might simply be acting as an irritant or they don't like the smell. But nobody really knows why insect repellents work." Catnip is a perennial herb belonging to the mint family and grows wild in most parts of the United States, although it also is cultivated for commercial use. Catnip is native to Europe and was introduced to this country in the late 18th century. It is primarily known for the stimulating effect it has on cats, although some people use the leaves in tea, as a meat tenderizer and even as a folk treatment for fevers, colds, cramps and migraines.

Chris Peterson, Ph.D., is a former post-doctoral research associate at Iowa State University in Ames, Iowa, and is now a Research Entomologist with the U.S. Department of Agriculture Forest Service, Wood Products Insect Research Service, in Starkville, Miss. Joel R. Coats, Ph.D., is professor of entomology and toxicology and Chair of the Department of Entomology at Iowa State University in Ames, Iowa.