School Pesticide Monitor

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Beyond Pesticides / National Coalition Against the Misuse of Pesticides
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Goats Aid School Campus

Decreasing Use of Toxic Herbicides, Goats Help Create Safer Environment for Students

Instead of allowing the school to do the regular dump of toxic herbicides over the hills of North Carolina State University's (NCSU) Centennial Campus, professor Jean Spooner has teamed up with Jean-Marie Luginbuhl in a funded project to use goats to eat through the tangled roughage and restore the area to its natural diversity - or at least, to make it manageable for restoration, according to a piece in the Raleigh, North Carolina *News and Observer*.

"People seemed to think this was a funny idea when it was first suggested," Mr. Luginbuhl told a reporter from the *News and Observer*. "But it's easy to see the goats are making a difference."

The 20 goats, which feed on just about anything, are being brought in as part of an experiment to compete with a nearby plot where conventional herbicides are being sprayed. The objective is to get rid of a non-native invasive species called kudzu that has choked the land and engulfed a creek that is now barely visible. The roots of the plant extend 15 feet into the ground and the stems are so thick in some areas that chainsaws are needed to get in to spray the herbicides.

The project is being funded by a federal grant of $287,500 and is expected to last two to three years. Over that time the goats will be rotated around roughly 700 yards in half-acre penned lots. Usually goats are able to strip a mile-long stretch of all unwanted plant life in about 30 days - but, given the depth of the kudzu root, more time will be needed. The idea is that the goats will continuously eat the leaves and vines of the plant, which will expose the root long enough so that it cannot replenish its leaves and eventually will die.

Mr. Luginbuhl, an associate professor of animal sciences and head of the Meat Goat and Forage Systems Research and Extension Program at NCSU, knows the important contribution that goats can make toward stemming pollution and limiting the use of toxic chemicals in land management. Although the idea is not new, it may be one of the first times a federal or state government has funded a goat-eating project to compete directly with herbicides to see which can better kill the aggressive plant.

Lani Malmberg, owner of Ewe4ic Ecological Services, which provides ecological weed control using goats, summarizes the benefits that goats provide: "The goal of the land is to build the soil so it can produce the kinds of plants that we want to grow there. What we need to be looking at is the water cycle, mineral cycle, energy flow and succession. Weeds are symptomatic of a problem. The problem is sometimes poor soil having no organic matter that cannot support good growth. We want to make the grass the best competitor and stress the weed at every turn. Goats help with this problem because everything they eat is then recycled as fertilizer and laid back down on the grasses. As the goats graze, they trample in the fertilizer." The benefits of using goats for weed control are three-fold: environmental, economical and social. Lani explains, "Environmental, because you can reduce chemicals or get rid of them completely. Economical, because we have put a lot of people to work, young kids, college students, high school kids, elementary students, and transients. And social, because there is nothing like a 1,000 head of goats to draw people in to the land to learn about weeds."

Beyond Pesticides Board Member Lani Malmberg grazes her herd of goats on non-navtive plant species at the University of Colorado at Boulder.

Goats prefer weeds, like the knapweeds and yellow star thistle. They do not like grasses; it is their last choice. For more information about Lani's work, see goatapelli.com, or contact Beyond Pesticides for more on goats and other alternatives for weed management.

Get Involved!

Interested in promoting a safer school environment? The School Pesticide Reform Coalition (SPRC) wants to work with you. SPRC is a coalition of 21 organizations that advocates for every child's and school employee's right to an environmentally healthy school. The Coalition has developed three public service announcements (PSAs) warning parents about the hazards of pesticides to be played on radio stations across the country. If you would like to get the word out in your community, contact Beyond Pesticides for the PSA that is right for your area and instructions on how to get it placed on your local radio station.

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If you are interested in receiving the *School Pesticide Monitor* via email, contact us at info@beyondpesticides.org.

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How to Handle Wasps at School

PREVENTION

Structural

- Inspect and repair exterior surfaces of the structure, looking for cracks, splintered or rotten wood, holes in stucco or the foundation, unscreened vents, loose shingles, open plumbing cuts into the basement, and loose fascia boards. Use duct tape, copper mesh, spackle, caulk, and cement patch.
- Cover attic and crawl space vents with fine mesh insect screen.

Cultural.

- Clean recyclables before storing them.
- Keep garbage cans clean and tightly covered, or seal all food garbage in plastic bags. Equip outdoor garbage cans with removable domed tops that have vertical, spring-loaded swinging doors or with spring-fitted lids. Periodically clean the lids of food wastes. Empty the cans frequently, especially during the most severe period of infestation, and monitor them daily, disposing of misplaced materials.
- Empty and clean dumpsters frequently. Dumpster lids should seal tightly and be kept closed when not in use. The area around the dumpster should be monitored daily, and all misplaced materials should be disposed of properly.

INSPECTION

If there is a chronic problem with yellowjackets, inspect the area methodically to locate the nests. Nests can be found in the ground, under eaves and in wall voids of buildings. Ground nests are frequently located under shrubs, logs, piles of rocks, and other protected sites. Entrance holes sometimes have bare earth around them. Nest openings in the ground or in buildings can be recognized by observing the wasps entering and leaving. Inspect monthly to ensure that nests do not become large enough to be problematic.

CONTROL

Non-toxic

- Traps can be used to reduce wasp and yellowjacket populations and monitor the effectiveness of ongoing control programs. Baits, placed in the saucer or plate at the bottom of the trap (dog food, ham, fish and meat scraps early in the season, sugar syrups, spoiled fruit and jelly late in the season), attract the insects. Once flying in, they can't escape. Commercially available fly traps are effective for wasp and yellowjacket control, with the appropriate bait.
- Another method of destruction is physically removing the nest. However, any mass disturbance to a nest will trigger a mass attack, so hiring a professional is highly recommended if this is the route you choose.
- Vacuuming can be effective for nests in wall voids and underground. You should first consult a professional experienced in handling stinging insects. Use a lightweight, powerful vacuum with a removable bag that can be stuffed closed with cotton or a rag while the machine is running. Vacuuming underground nests is a two-person job, with one person operating the vacuum and the other excavating the nest with a trowel. First check for auxiliary nest openings in a 40- to 50-foot area around the main opening, and fill any found with soil. Wear protective clothing. The vacuum should be held about 3 to 4 inches from the entrance of the nest so that the wasps are sucked in as they fly from the nest. Before the vacuum bag is full, vacuum up two tablespoons of cornstarch to incapacitate the wasps. Once the nest is empty, with no more wasps entering or leaving, dig out the underground nest structure. With the vacuum still running, open the canister and tape over the bag opening with duct tape. With the motor off, take out the bag and place it in a cardboard box. Seal the box and place it in a freezer at least overnight. Aerial nests and ground nest fragments that contain living larvae, should be placed in thick plastic bags and put in a freezer at least overnight.

Least-toxic

- Silica aerogel is a desiccating dust that can be used to destroy underground nests or a nest in a wall void. The dust abrades the outer waxy coating on insects, causing them to dry up and die. Choose a desiccating dust that it is not combined with a pyrethrin. **Avoid breathing in desiccating dusts, as they can cause lung irritation, and always wear a mask and goggles when applying.**

Resources: Olkowski, Helga, Daar, Shiela, and Olkowski, William, *Common –Sense Pest Control*, Newtown: The Taunton Press, Inc., 1991.
Quarles, W. 1999. "Identifying Ants in the House." *Common Sense Pest Control*. 15(2):3-6. Northwest Coalition for Alternatives to Pesticides, Eugene, OR.