

Asian Jumping Worms in Nebraska

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It is often debated whether worms are friends or foes. It depends on the specific context and number of worms in a given environment. Vegetable gardeners may welcome the benefits of worms in the soil, while golf course managers and some homeowners may want worms out of their turf.

Where did they come from? Where are they now?

Meet Nebraska's newest invasive species, the Asian jumping worm (*Amyntas* species and *Metaphire* species). Its native range is East Asia, but was found in Wisconsin in 2013. Today, approximately 17 species of jumping worms have been found in North America, and they have been reported throughout the eastern and southern United States, parts of the Midwest and Oregon.

What damage do they cause?

Jumping worms feed in large numbers at the soil surface, rather than the layers beneath like European earthworms (We do not have native earthworms). They readily consume organic material, including mulch and fallen leaves. Jumping worms replace soil with their worm castings, which are small, loose, hard pellets, resembling spent coffee grounds. This material is not conducive for plant growth as the soil structure has changed and lacks water-holding capacity. Without organic matter in the soil, plant roots have a hard time staying rooted.

Asian jumping worms outcompete, outnumber and out-consume other worms in the landscape, and therefore have a significant impact on the ecosystem. Instead of mixing nutrients in the soil, nutrients are released quickly and ultimately get washed out of the soil by irrigation and heavy rains.

How do I identify invasive jumping worms?

Without looking at the worm, a sign of a jumping worm infestation is the change in the texture of the soil. Rather than create a casting pile or middens like European earthworms and night crawlers, jumping worms will leave loose, granular soil particles that have the same consistency as spent coffee grounds. Jumping worms are present in the topsoil, so if your mulch is being consumed at a faster rate than normal, you may have jumping worms.

Sometimes called "snake worms" or "crazy worms", they thrash about wildly when disturbed, moving side-to-side in a snake-like motion and break off tail segments to escape.

Out of the soil, jumping worms appear smooth and glossy and are rubbery to the touch, rather than slimy and squishy. Another way to confirm identity includes examining the clitellum (light

band) on mature worms. If the clitellum is a cloudy-white color, completely encircles and is flush with the body, you have an invasive jumping worm.



Jumping worm adult with characteristic clitellum, which is light colored, flush with body, and encircles the entire body (Photo: J. Green, Nebraska Extension in Douglas-Sarpy Counties)

What is the life cycle of the jumping worm?

Invasive jumping worms have an annual life cycle. Adults die each winter, but not before they produce (without needing to mating) multiple cocoons in the fall. Cocoons are about the size, shape and color of mustard seeds and cannot be easily detected in the soil. Cocoons survive the winter in the soil and hatch in the spring, developing rapidly to adulthood (60 days) by the end of the summer. Discovery of jumping worms is usually in August and September when worms are at their largest.

How are worms spread?

The spread of jumping worms may be from a number of avenues, all of which involve the transport by human activities. Some worms may have originated as fishing bait, while others were purchased as composting worms for vermiculture. The most common means of spread is by the movement of infested soil, mulch or compost used for gardening and transferring plants into the landscape. Many people obtain plants and seedlings from community sales, friends and neighbors. The soil that comes with the plants may contain tiny cocoons, which hatch the following spring.

Do I have Asian jumping worms?

If you are curious whether you have invasive jumping worms, you can perform a mustard pour on a portion of your soil:

- (1) Mix 1/3 cup of ground yellow mustard seed with 1 gallon of water.
- (2) Clear a bare patch of soil and pour slowly over the soil.
- (3) Worms will move to the surface and you can determine whether they are invasive jumping worms or common worms.

What do I do if I find Asian jumping worms?

If you find jumping worms please report to <https://neinvasives.com/species/insects/asian-jumping-worm>.

Reduce the movement of soil to stop the spread of cocoons from one place to another. Clean equipment, garden tools, and personal gear like the treads of footwear between work sites. A good motto is “Arrive clean, leave clean.”

For some infested open areas, it may be possible to use a treatment called solarization, which consists of laying a clear plastic sheet over the affected area to heat the soil for a couple weeks and kill jumping worm cocoons. Current research out of the University of Wisconsin-Madison Arboretum showed that 104°F/40°C killed cocoons after three days.

What can I do to control them?

There are no EPA registered chemicals labeled for the control of jumping worms once they are in the landscape. Some products, like Early Bird Fertilizer and tea seed pellets have been tested, but additional research is needed to determine application rates and long-term effectiveness.

What are the ways to prevent the spread of jumping worms?

- Educate others about Asian jumping worms and how to identify them
- Buy plants from seed or bare-root (triple-rinsing roots will remove cocoons)
- Do not buy fishing worms advertised as “snake worms”, “Alabama jumpers” or “crazy worms” for fishing or composting
- Do not dispose of unused worms in the environment
- Any collected worms should be killed