

# Jumping Worm

## Best Management Practices for Nurseries and Landscapers



### The Threat

Jumping worms are a group of invasive earthworm species (*Amyntas* spp. & *Metaphire* sp.) that are established in Vermont and appear to be spreading more recently. Their name comes from their tendency to thrash and wriggle violently when disturbed. Jumping worms live on the soil-surface usually just under leaf litter in forests, gardens, and agricultural landscapes. They rapidly consume organic matter and deplete soil nutrients through leaching or erosion. Jumping worms can also damage plant roots in nurseries and produce operations.



Worm cocoons, Wisconsin DNR

### The Spread

Jumping worms and their cocoons can be spread through compost, leaf litter, wood chips, nursery plants, and soil. In Vermont, adults die off at the end of the growing season and the tiny cocoons persist throughout winter. Larvae hatch as soon as the temperature rises above 50° F and can complete their life cycle in 60 days. Nurseries and landscapers are at risk of spreading jumping worms to customers and new un-infested sites; however there are steps that can be taken to reduce the risk.

### BMPs for Infestations

There are currently no registered chemical treatments for invasive earthworms. Cultural and mechanical methods must be used to reduce populations.

- Solarize soil with plastic or tarps- leave for several weeks
- Light tillage of an area and hand pick worms- kill in soapy water or alcohol
- Top dress treated areas with clean, un-infested mulch/ compost
- Incorporating abrasive materials into the soil, such as biochar, may discourage worms



Soil solarization

# BMPs for Preventing Spread

## General Measures

- Clean soil from all tools, boots, and gloves when moving between different growing areas. Use sterilizing agent when applicable.
- Keep nursery areas free of organic debris and dispose of culled plants at a designated cull site.
- Maintain cull piles in isolated areas away from natural areas and forest settings.
- Scout field growing areas and monitor soil for jumping worms regularly. Train employees to identify jumping worms and their castings. (See [ytinvasives.org](http://ytinvasives.org))
- Monitor media mixing areas and clean equipment between batches.



## Potting Media, Mulch, and Compost

- Source potting media, mulch, and compost from jumping worm free locations (or heat treated)
- To ensure that these materials are clean, bring internal temperature up to 130°+ F by solarizing in thin layer on concrete or tarp. 130°F is the minimum temperature to kill both worms and eggs.
- Store clean materials on concrete or tarps and bags of substrate on pallets away from soil.

## Bare Root Plants

- Sell plants bare root when possible.
- Remove all soil from plants before transporting them to limit the spread of weeds and worms.
- Completely submerge plant roots in water and wash away remaining soil. Actively look for worms. Once roots appear clean, protect roots for transportation and sale.



## Potted Plants

- Ensure that potting media is sterile or free of weeds and pests. Avoid using non-solarized compost/ mulch or material that may have come from an infested area.
- Use new pots or sanitize used ones with steam or chemical solution.
- Place plants on surfaces that worms cannot travel through like concrete, weed mat/gravel or raised benches. Create a barrier between pots and potentially contaminated materials like soil, leaves or mulch.

## Balled & Burlap Plants

- Plants sold as balled and burlap (B&B) stock may pose a greater risk of spreading jumping worms than traditional potted plants.
- If possible, store B&B plants on a gravel or weed mat barrier. Use clean mulch/ substrate to protect rootballs.
- When digging field plants, inspect rootball carefully for signs of jumping worms. Rinse off surface layer of organic matter and remove any worms. Earthworms in the deeper soil layers are most likely not jumping worms.

## Advice for Customer Relations

Jumping worm is often a contentious topic and can have large business implications. VAAFMM suggests nurseries/ landscapers inform customers that they are following certain BMPs to prevent spread. Practices used to prevent spread of jumping worms will also reduce the spread of weed seeds and other plant pests. Businesses can share brochures and online resources as well.