



# Biology and control of Japanese hedgeparsley (*Torilis japonica*)

THE UNIVERSITY  
of  
**WISCONSIN**  
MADISON



**Mark Renz**

Extension Weed Specialist

University of Wisconsin-Madison

**UW**  
**Extension**  
Cooperative Extension

# ***Torilis* spp. in North America**

- Several species in the genus *Torilis* in North America (all considered invasive/weedy)
  - **spreading hedgeparsley (*Torilis arvensis*)**
  - **Japanese or erect hedgeparsley (*Torilis japonica*)**
  - bristlefruit hedgeparsley (*T. leptophylla*)
  - knotted hedgeparsley (*Torilis nodosa*)
  - rough hedgeparsley (*Torilis scabra*)

# Distribution of *Torilis* species in US

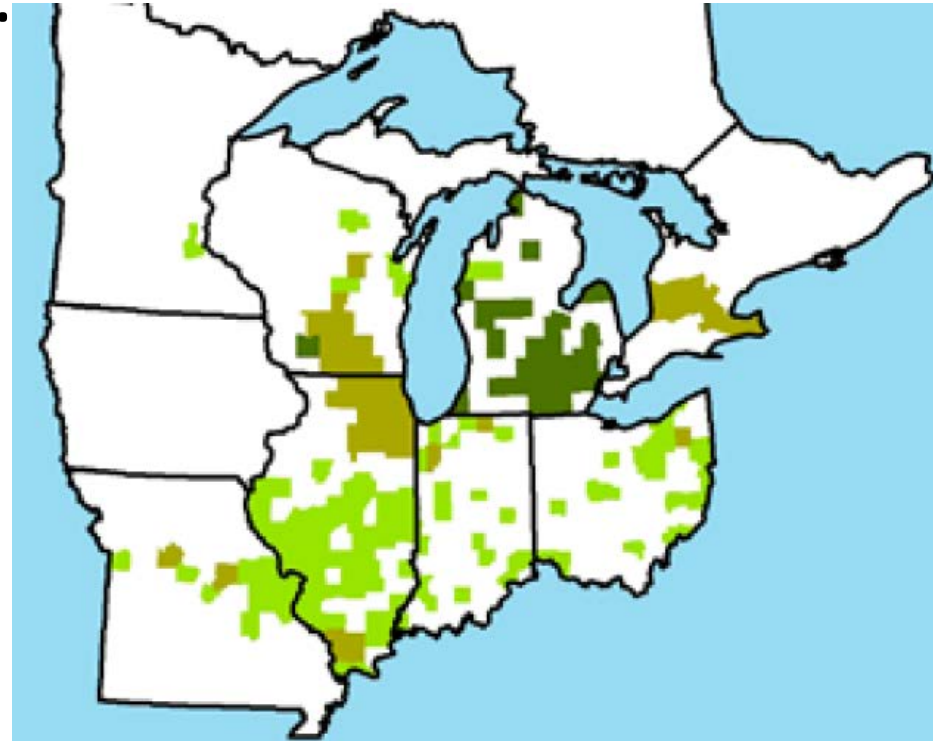
Species	PNW	West	South	Central	Midwest	Northeast
Japanese*	<b>X</b>	<b>X</b>	<b>X</b>		<b>X</b>	<b>X</b>
Spreading^	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Bristlefruit						<b>X</b>
Knotted	<b>X</b>	<b>X</b>	<b>X</b>		<b>X</b>	<b>X</b>
Rough	<b>X</b>					

\* prohibited/restricted in WI

^ prohibited in WI

# Distribution of JHP

- According to MIPN present and spreading throughout the region
- Habitats I have seen it in:
  - Pastures/grasslands
  - **ROW/roadsides**
  - **Forest edges**
  - Forests/woodlands
  - Urban areas



# Leaves of JHP

- **Leaves 2-5 inches long:**
  - pinnately compound
  - alternate
  - fern-like
  - lightly hairy
  - clasp the stem



# Rosette vs second year leaf



# Flowering Stems

- 2-4 ft tall
- spreading
- grooved
- notably jointed
- stiff hairs
- few leaves on upper stems



# Flowers of JHP

- **Flowers:** Mid- to late summer.
  - White flowers found in small umbels.







# How do you tell Japanese HP from spreading HP?

*JHP* has two or more small bracts at the base of each umbel



# Fruit & Seeds of JHP

- **Fruits and seeds:**
  - flower produces a pair of bristle-covered fruit
  - Initially green, but become brown as mature



# Similar species

- Wild carrot (*Daucus carota*)
  - not as hairy and has larger, flatter, and denser umbels.
- Caraway (*Carum carvi*)
  - shorter and has dark, oblong seeds and leaves more finely divided
- Sweet cicely (*Osmorhiza*)
  - leaves that are not as fern-like
- Wild chervil (*Anthriscus sylvestris*)
  - flowers in spring

*The bristle-covered seed of hedge-parsleys is a key characteristic to distinguish these two hedge-parsleys from other similar species*

# Wild carrot vs JHP



Japanese hedgeparsley video

# Infestations



# Impact of JHP invasions

- We have no idea!
- Similar to garlic mustard
  - cycling of populations due to biennial life history
  - Can dominate areas when in flower
- Competes with native plants
- Spread is enhanced by barbed fruit



# Phenology of JHP in Wisconsin

Biennial plant in WI

	Madison 2010				
	Vegetative	Flower Buds	Flowers Present	Green Fruit Present	Brown Fruit Present
Early July	0	10	45	45	0
Mid-July	0	0	25	75	0
Early Aug.	0	0	0	100	0
Mid-Aug.	0	0	0	40	60
Early Sept.	5	0	0	0	95

# Phenology of JHP in Wisconsin

## Biennial plant in WI

	Spring Green 2010				
	Vegetative	Flower Buds	Flowers Present	Green Fruit Present	Brown Fruit Present
Early July	28	61	11	0	0
Mid-July	0	8	77	15	0
Early Aug.	0	0	0	85	15
Mid-Aug.	7	0	0	44	48
Early Sept.	0	0	0	11	89

# Seed production and viability

	Spring Green	Vermont
	# of viable seed/plant	
Early July	0 a	0 a
Mid-July	0 a	0 a
Early Aug.	3 a	0 a
Mid-Aug.	60 b	101 b
Early Sept.	321 c	326 b
p-value	<0.0001	<0.0001

# What are the control options

- Similar to other biennial weeds
  - Short-term goal: remove plants/prevent competition
  - Long-term goal: prevent seed production

See <http://mipncontroldatabase.wisc.edu> or our factsheet for detailed info

# Non-chemical control methods

- Removal
  - Cut taproot with a sharp shovel or spade 1–2” below the surface.
  - Pull if soil conditions allow for the removal of the taproot.
- Mowing
  - after bolting, but before brown seeds are present
  - Years of mowing to reduce populations are not known
    - other *Torilis* species do not persist in the soil

# Chemical control methods

- Foliar applications are effective in spring or fall to rosettes or bolting plants
  - Non selective herbicide
    - Glyphosate (e.g. roundup)
  - Safe to established grasses
    - Metsulfuron (e.g. escort)
    - Triclopyr (e.g. Garlon)

# Summary of JHP

- Biennial plant invading US
  - Almost identical to spreading hedgeparsley
- Easy to identify when start looking for it
  - Flowers in mid summer white umbels
  - Fruit is barbed
- Invades a wide range of habitats
  - Full sun to shaded environments
- Several effective control methods are known

# Questions?



THE UNIVERSITY  
*of*  
**WISCONSIN**  
MADISON

**<sup>LW</sup>Extension**  
Cooperative Extension

