

# Amaranthus sp...weeds with an attitude!

Identification of pigweeds: Species of agricultural concern in Wisconsin

## 1. Is the plant upright or low growing?

Low growing => Prostrate pigweed

No...Go to question 2

## 2. Does the stem have hairs?

Yes => Redroot pigweed or Smooth pigweed or Powell Amaranth

No...Go to question 3 (on next page)

## Managing Amaranthus sp. weeds

### Prevention is critically important

- Clean equipment, especially "new" used
- Use weed-free crop seed and livestock feed
- Prevent weed seed production
- Isolate new animals

### Increase crop competition

- Soil fertility, appropriate hybrid/variety, equipment setup, planting date, seeding rate, row spacing, etc.

### Row cultivation/rotary hoe

### Pre-plant tillage => moldboard?

### Strengthen your crop rotation

- Crop/weed associations are not accidental!
- Add forages, wheat and/or cover crops

### Make sure your herbicide choices match your weed spectrum

### Tank mix herbicide modes of action

### Strongly consider a PRE followed by a POST application

### Apply herbicides before plants are 4 inches tall!

## Additional resources

### Publications (use internet search for current pdfs)

- *Pest Management in Wisconsin Field Crops*
- *Weed Control Guide for Ohio and Indiana*
- *Glyphosate, Weeds and Crops Series*

### Web sites

- Ohio State University Weed Science  
<https://u.osu.edu/osuweeds/>
- Purdue Weed Science  
<https://ag.purdue.edu/btny/weedscience/>

This publication is available from the Nutrient and Pest Management (NPM) Program.  
(608) 265-2660, email ([npm@hort.wisc.edu](mailto:npm@hort.wisc.edu)),  
or visit our website: [ipcm.wisc.edu](http://ipcm.wisc.edu)

### Redroot pigweed

- Cotyledons are long and narrow
- Stems, leaves have many hairs
- Notched leaf tips
- Dense, compact seed head



### Smooth pigweed

- Cotyledons are long and narrow
- Stems have fine hairs
- Notched leaf tips
- Dense, compact seed head



Smooth

Redroot

### 3. Is the stem smooth, absolutely no hairs?

Yes => **Waterhemp** or **Palmer amaranth**

Yes, but spines on leaf petiole => **Spiny amaranth**

#### Palmer amaranth

- Cotyledons are broad, ovate-shaped
- Stems and leaves with no hairs
- Singular hair in leaf tip notch (1<sup>st</sup>-3<sup>rd</sup> true leaf)
- Extended petiole of first true leaves
- Sometimes has a watermark
- Rosette patterned growing point
- Ovate to diamond-shaped leaves that are widest near the leaf base – looks similar to redroot pigweed
- Long seedhead that is very rough to the touch



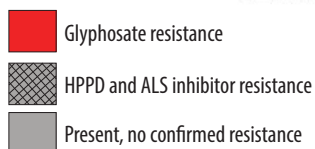
#### WI Palmer update

**Glyphosate resistant in Dane and Sauk counties confirmed**

#### Iowa county population

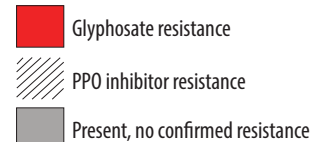
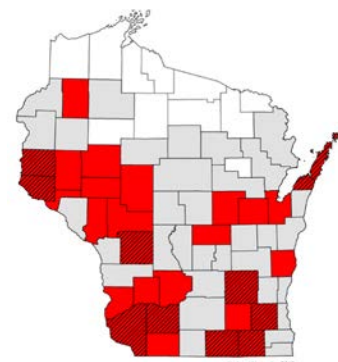
- Sensitive to glyphosate
- High-level of resistance to ALS
- Low-level of resistance to the HPPD

**Resistance in other populations unknown**



#### Tall/Common waterhemp

- Cotyledons are egg-shaped
- Stems and leaves with no hairs
- Leaves are long and narrow compared to pigweeds
- Open seed head



#### Waterhemp herbicide resistance

- 28 counties with glyphosate resistant populations
- 10 counties with glyphosate and PPO resistant populations