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/

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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 (1st-3rd true leaf)
- Extended petiole of first true leaves
- Sometimes has a watermark
- Rosette patterned growing point
- Oval 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

### Waterhemp

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

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**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**

**Waterhemp herbicide resistance**

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