

## Look-a-like weeds: Pigweeds

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Pigweed, carless weed, amaranth, hog weed, Palmer pigweed... Pigweeds have about as many names as there are different species of pigweeds. The three most common and problematic pigweed species in Oklahoma crop production are redroot pigweed, Palmer amaranth, and waterhemp. As seedlings, pigweeds have a deep green color and can be distinguished from all other weeds by the small notch in the tip of the leaf (Figure 1). Fortunately, distinguishing among the different pigweed species is not necessary for weed control since most herbicides that control one type of pigweed will also control the other pigweeds. However, as herbicide-resistant pigweed species become more prevalent in Oklahoma, proper identification is necessary to design a weed control program that will prevent or delay the development of herbicide-resistance on your farm.



**Figure 1.** Pigweed species can be quickly identified from other weeds by the small notch in the tip of the leaf blade.

### **Redroot pigweed (*Amaranthus retroflexus*)**

Redroot pigweed is one of the most common pigweed species in Oklahoma. Redroot pigweed typically has egg-shaped with small hairs along the leaf margin. Redroot pigweed can also be identified by the small, dense hairs on the stem.

Generally, redroot pigweed is not as problematic as Palmer amaranth or waterhemp, although populations of herbicide-resistant redroot pigweed have been reported in several neighboring states.



**Figure 2.** Redroot pigweed can be identified by its egg-shaped leaves and dense hairs on the stem.

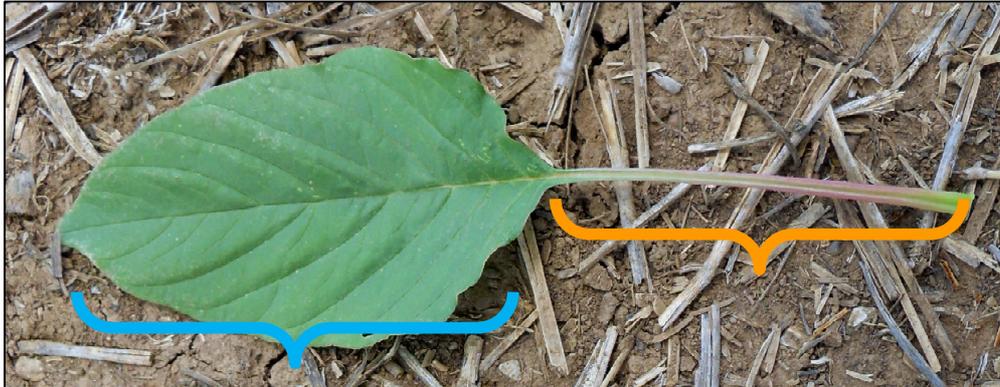
### **Palmer amaranth (*Amaranthus palmeri*)**

Palmer amaranth may resemble redroot pigweed, but can usually be identified by the white or purple “ink spot” on the leaves (Figure 3). This marking may not always be present, especially as the plants become larger and more mature. Unlike redroot pigweed, the leaves of Palmer amaranth are hairless. Another distinguishing characteristic of Palmer amaranth is the long petiole (Figure 4). The petiole is the stalk that connects the leaf blade to the main stem of the plant. For Palmer amaranth, the petiole is usually as long as or longer than the leaf blade. Palmer amaranth is also unique because it has separate male and female plants. The flowering structures, found at the top of the plant, will help identify the male and female plants. The heads on male plants are typically soft and fluffy, while the seed heads on female plants are spiny.



**Figure 3.** Palmer amaranth can be identified by the V-shaped “ink spot” on the leaves.

Palmer amaranth is particularly noteworthy because of its high seed production and rapid growth. A single Palmer amaranth can produce over 500,000 seeds and can grow 1 inch or more per day. Palmer amaranth is also a serious problem throughout much of the South and Southeast United States because of widespread resistance to several herbicides, including glyphosate and herbicides belonging to the ALS inhibitor mode of action (Classic®, Pursuit®, Cadre®, etc.).



**Figure 4.** Palmer amaranth can often be identified by the long petiole, or the stalk that attaches the leaf to the stem (marked with the orange bracket). The petiole is often as long as or longer than the leaf blade (marked with the blue bracket).

**Waterhemp (*Amaranthus tuberculatus*)**

Waterhemp is probably the most easily identifiable of the pigweed species. It has long, slender leaves that are hairless and very waxy (Figure 5). Similar to Palmer amaranth, waterhemp also has separate male and female plants. Waterhemp is also a prolific seed producer—one female plant can produce over one million seeds, replenishing the soil seed bank for many, many years.

Similar to Palmer amaranth, waterhemp is notorious for its ability to quickly develop resistance to herbicides. Currently, ALS-resistant waterhemp is common in peanut production in southwest Oklahoma. Recently, populations of glyphosate-resistant waterhemp have been confirmed in soybean fields in eastern and north-central Oklahoma. Because of its ability to produce large amounts of seed and quickly develop herbicide resistance, waterhemp should be managed aggressively with preemergence herbicides and sprayed with postemergence treatments before the plants reach 4 inches in height.



**Figure 5.** Waterhemp is easily distinguished from other pigweed species by its long, narrow leaves.