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April 2010

# W069 Early Season Pigweed Idenfitication

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UT Extension
W069

# Early Season Pigweed Identification

*Larry Steckel, Assistant Professor, Plant Sciences*

*Figure 1. Smooth pigweed prior to seedhead emergence.*

The pigweed species are some of the most widespread and competitive summer annual weeds infesting row crops in Tennessee. These weeds can reduce yields and make harvest difficult. One management control option for pigweed is the use of herbicides. Research has shown that different pigweed species respond differently to certain herbicides. Therefore, proper early identification at growth stages when the pigweed can still be controlled is very important.

Eight species of pigweed are common to Tennessee, making it very difficult to distinguish between species in the seedling growth stages. Following are some guidelines to help with pigweed identification. It should be noted, however, that there is often physical variation within species and that some species of pigweed can cross with other species, resulting in hybrid plants. Pigweeds will not always express the specific traits of one parent species or the other, but may express a combination of both.

**Smooth pigweed** (*Amaranthus hybridus*)
- Plants will have very small fine hairs throughout.
- First leaves are rounded with small notch at leaf tips. **(Figure 2)**
- Leaf and stem surfaces are rough.
- Easily distinguished from redroot pigweed only in mature stages.

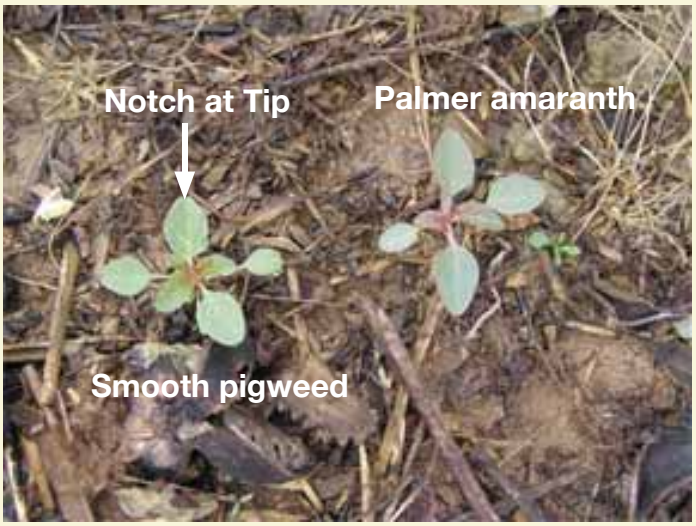


*Figure 2. Smooth pigweed and Palmer amaranth in the seedling stage.*

**Redroot pigweed** (*Amaranthus retroflexus*)
- Very fine hairs are often found throughout the plant, although stems below the cotyledons can be smooth.
- Stems below cotyledons are often red.
- Leaf and stem surfaces are rough.
- The first true leaves are egg-shaped and notched at the tip. Can only be easily distinguished from smooth pigweed when mature.

**Slender pigweed,** also known as Green pigweed (*Amaranthus gracilis*) or (*Amaranthus viridis)*
- Seedlings are hairless.
- The first true leaves are egg-shaped and notched at the tip.

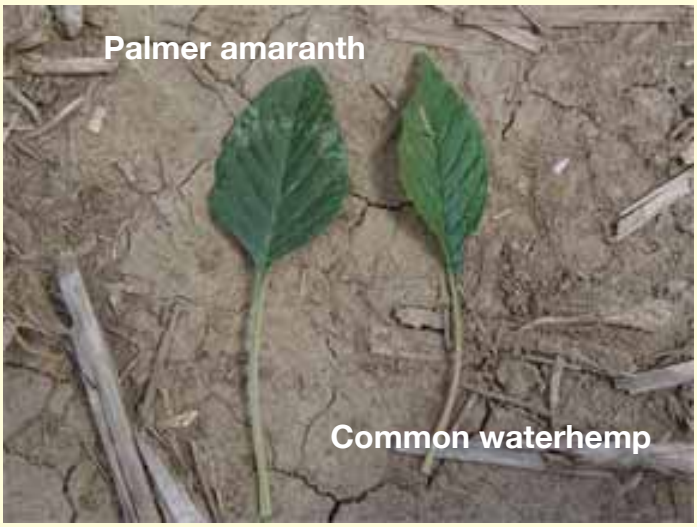


*Figure 3. Leaf comparison of Palmer amaranth and common waterhemp.*

- Leaf and stem surfaces are rough.
- Seedlings can vary in color from red to green.

**Palmer pigweed** (*Amaranthus palmeri*)
- Seedlings plant parts are smooth with no hairs.
- The petioles (the stalk of the leaf blade) are typically longer than the leaf blades. **(Figure 3)**
- Leaves of Palmer are wider than waterhemp leaves. **(Figure 3)**
- Later leaves may occasionally have a white or red v-shaped variegation (having marks or patches of varied colors or shades of one color). Also called a watermark. **(Figure 3)**
- Back of leaves are usually waxy.
- After seedling stage, plants often have a poinsettia-like appearance of leaf arrangement. **(Figure 4)**

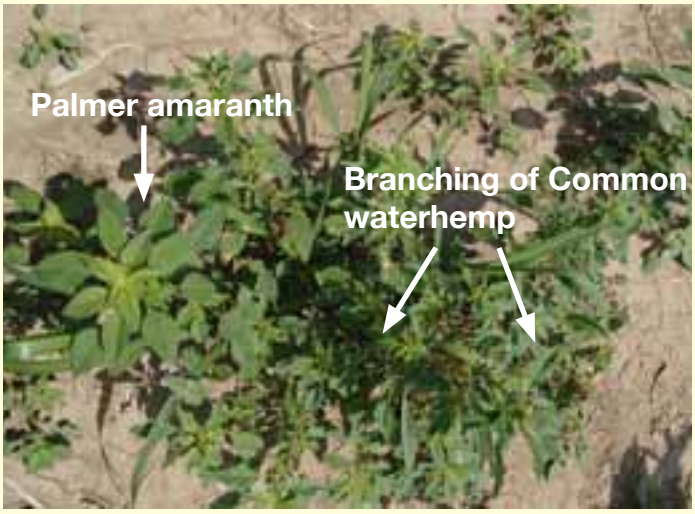


*Figure 4. Contrasting growth habits of Palmer amaranth and Common waterhemp.*

**Common waterhemp** (*Amaranthus rudis*) and **tall waterhemp** (*A. tuberculatus*)
Leaves and stems are completely hairless, very smooth and waxy.
- Leaves are long and typically narrow. **(Figure 3)**
- Plants are more slender than Palmer with more branching. **(Figure 4)**

**Spiny amaranth** (*Amaranthus spinosus*)
- Sharp spines, 2 to 4 in number, occur at nodes (points of leaf attachment to stems). **(Figure 5)**
- Leaves often have v-shaped variegation.
- Stems are hairless and smooth.
- Stems can be red, green or variegated. **(Figures 5 and 6)**
- Leaves are typically darker green than smooth or redroot pigweed. **(Figure 7)**

*Figure 5. Illustration of nodal spines of spiny amaranth.*

*Figure 6. Mature spiny amaranth with seedheads.*

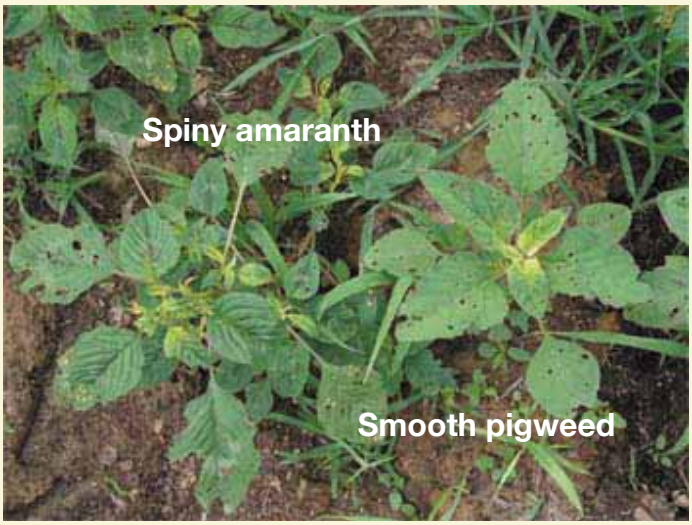


*Figure 7. Comparison of spiny amaranth and smooth pigweed.*

**Prostrate pigweed** *(Amaranthus blitoides)*
- Plants are low-lying and mat-like on the ground.
- Leaves are spatulate (shaped like a spatula, broader above than below).
- Small leaves, usually less than 1½ inches long.

**Tumble pigweed** *(Amaranthus albus)*
- Egg-shaped leaves with wavy edges.
- Leaves are small, usually less than 1½ inches long, with short petioles.
- Often olive green.

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05-0156 W069

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