

This WEED REPORT does not constitute a formal recommendation. When using herbicides always read the label, and when in doubt consult your farm advisor or county agent.

This WEED REPORT is an excerpt from the book *Weed Control in Natural Areas in the Western United States* and is available wholesale through the UC Weed Research & Information Center ([wric.ucdavis.edu](http://wric.ucdavis.edu)) or retail through the Western Society of Weed Science ([wsweedscience.org](http://wsweedscience.org)) or the California Invasive Species Council ([cal-ipc.org](http://cal-ipc.org)).

*Polygonum persicaria* L.; ladysthumb  
*Polygonum lapathifolium* L.; pale smartweed  
(= *Persicaria lapathifolia* (L.) Gray [Jepson Manual 2012])

## Ladysthumb and pale smartweed

**Family:** Polygonaceae

**Range:** Throughout the United States, including the western states.

**Habitat:** Edges of ponds, shallow lakes, marshes, and streams; wet fields, areas subject to seasonal flooding, irrigation ditches, pastures, orchards, rice fields, grain fields, irrigated crops. Plants typically grow in wet to moist soils but tolerate periods of dryness. Terrestrial plants grow best in disturbed places with fertile soils and minimal competition. Plants do not tolerate highly acidic soils.

**Origin:** Pale smartweed is a widespread native of North America. Ladysthumb is native to Europe.

**Impacts:** Can invade rice fields, pastures, orchards, and irrigated crops; stands of emergent plants can impede the flow of water in irrigation ditches, canals, and drainage areas. In natural areas they can be a desirable component of the flora. However, these species can invade protected wetlands and agricultural systems. Their seeds are an important food source for many species of songbirds, waterfowl, and mammals, and the foliage provides cover for wildlife. The two species can hybridize.

Pale smartweed and ladysthumb are coarse, emergent aquatic to terrestrial herbs. Both are summer annuals, growing to 5 ft tall (pale smartweed) or 3 ft (ladysthumb). Mature plants have coarse stems which are swollen at the nodes, with papery sheaths (ocrea) around the nodes. The stems are openly branched and often reddish. Leaves are alternate, lanceolate to elliptic, with stalks 0.25 to 1 inch long. The leaves are 1 to 8 inches long, 0.25 to 2 inches wide, with tapered bases. Both species have minute glands on the lower leaf surfaces; pale smartweed's are sunken, while ladysthumb's are raised. Ladysthumb also typically has a dark purplish central spot on the leaves (as may some other smartweed species). Lower stems typically root at the nodes. These species have shallow, branched taproots, with fibrous secondary roots. Under certain conditions, fragmented stems can regenerate into new plants.

Both species produce dense flowering spikes from early summer into early fall. Pale smartweed spikes are 1 to 3 inches long, cylindrical, and drooping. Ladysthumb spikes are erect, oblong, and 0.5 to 1.5 inches long. The seeds are glossy, brown to black, about 2 mm long. Seeds fall near and/or remain on the parent plant, or disperse to greater distances generally with water or as contaminants of crop seed. The foliage is killed by the first frost, turning brown to reddish, and does not persist through winter. Seed longevity is not well understood, but seeds are expected to remain dormant and viable for a few years after dispersal.

### NON-CHEMICAL CONTROL

<b>Mechanical</b> (pulling, cutting, disking)	Cultivation or hand removal can control these weeds. Mowing before flowering can reduce seed set. Tillage is not generally an option in wet areas.
<b>Cultural</b>	These plants grow in wet areas which are not usually grazed.



	These plants grow in wet locations, so burning is not a feasible control method. Improving drainage can help to control smartweed populations.
<b>Biological</b>	There are no biological control agents available for the management of any of the <i>Polygonum</i> species.

**CHEMICAL CONTROL**

The following specific use information is based on published papers and reports by researchers and land managers. Other trade names may be available, and other compounds also are labeled for this weed. Directions for use may vary between brands; see label before use. Herbicides are listed by mode of action and then alphabetically. The order of herbicide listing is not reflective of the order of efficacy or preference.

<b>GROWTH REGULATORS</b>	
2,4-D Several names	<b>Rate:</b> 0.5 to 2 pt product/acre (0.24 to 0.95 lb a.e./acre) <b>Timing:</b> Postemergence to rapidly growing weeds, the smaller the better. <b>Remarks:</b> 2,4-D is broadleaf-selective. It has no soil activity and is often combined with other active ingredients, e.g., dicamba. Do not apply when outside temperatures exceed 80°F. Aquatic registered formulations are available for use close to water. 2,4-D and dicamba can be used together in a premix with metsulfuron ( <i>Cimarron Max</i> ), but not near water.
Aminopyralid <i>Milestone</i>	<b>Rate:</b> 3 to 5 oz product/acre (0.75 to 1.25 oz a.e./acre) <b>Timing:</b> Apply in spring to rapidly growing plants, or treat soil shortly before plants emerge. <b>Remarks:</b> Aminopyralid is a broadleaf herbicide like picloram, but more selective. It is safe on grasses but will kill most legumes and other members of the Asteraceae. It has longer residual and higher activity than clopyralid and is registered for application up to water's edge.
Aminopyralid + 2,4-D, <i>Forefront HL</i> ; Aminopyralid + metsulfuron, <i>Opensight</i> ; Aminopyralid + triclopyr, <i>Capstone</i>	<b>Rate:</b> 1.5 to 2.1 pt <i>Forefront HL</i> /acre; 1.5 to 2 oz <i>Opensight</i> /acre; 4 to 6 pt <i>Capstone</i> /acre <b>Timing:</b> Postemergence to rapidly growing plants. <b>Remarks:</b> These premixes (and equivalent tank mixes using the same active ingredients) are all broadleaf-selective. <i>Opensight</i> is not registered for use in California.
Clopyralid <i>Transline</i>	<b>Rate:</b> 0.67 to 1.33 pt product/acre (4 to 8 oz a.e./acre) <b>Timing:</b> Postemergence to rapidly growing weeds. <b>Remarks:</b> A broadleaf herbicide like picloram, but more selective. Very safe on grasses but will kill most legumes and other members of the Asteraceae. It has some soil residual activity. May provide only suppression of smartweeds.
Clopyralid + 2,4-D <i>Curtail</i>	<b>Rate:</b> 1 to 2 qt product/acre <b>Timing:</b> Postemergence to rapidly growing weeds. <b>Remarks:</b> The mixture is broadleaf-selective with a wide range of susceptible species.
Dicamba <i>Banvel, Clarity</i>	<b>Rate:</b> 0.25 to 1 pt product/acre (0.125 to 0.5 lb a.e./acre) <b>Timing:</b> Postemergence to rapidly growing weeds, the smaller the better. Use higher rates for larger plants. <b>Remarks:</b> Dicamba is a broadleaf-selective herbicide often combined with other active ingredients. It may injure grasses at higher rates. Do not apply when outside temperatures exceed 80°F. Dicamba and 2,4-D can be used together in a premix with metsulfuron ( <i>Cimarron Max</i> ), but not near water.  Dicamba is available mixed with diflufenzopyr in a formulation called <i>Overdrive</i> . This combination is broadleaf-selective and safe on most grasses. This has been reported to be effective on ladysthumb and other smartweeds. Diflufenzopyr is an auxin transport inhibitor which causes dicamba to accumulate in shoot and root meristems, increasing its activity. <i>Overdrive</i> is applied postemergence at 4 to 8 oz product/acre to rapidly growing plants. Higher rates should be used on large annuals and biennials or when treating perennial weeds. Add a non-ionic surfactant to the treatment solution at 0.25% v/v or a methylated seed oil at 1% v/v solution.

Triclopyr <i>Garlon 3A, Garlon 4 Ultra</i>	<p><b>Rate:</b> 1.33 to 6 qt <i>Garlon 3A</i>/acre (1 to 4.5 lb a.e./acre), 1 to 4 qt <i>Garlon 4 Ultra</i>/acre (1 to 4 lb a.e./acre)</p> <p><b>Timing:</b> Postemergence to rapidly growing plants.</p> <p><b>Remarks:</b> Triclopyr is broadleaf-selective and safe on most grasses. It is most effective on smaller plants and has little or no residual activity. <i>Garlon 3A</i> and other amine formulations are registered for aquatic use. <i>Garlon 4 Ultra</i> is formulated as a low volatile ester. However, in warm temperatures, spraying onto hard surfaces such as rocks or pavement can increase the risk of volatilization and off-target damage.</p>
<b>AROMATIC AMINO ACID INHIBITORS</b>	
Glyphosate <i>Roundup, Rodeo, Aquamaster, and others</i>	<p><b>Rate:</b> 1 to 2 pt product (<i>Roundup ProMax</i>)/acre (0.56 to 1.1 lb a.e./acre). Use 1 to 2 pt <i>Rodeo</i> or <i>Aquamaster</i>/acre (0.5 to 1 lb a.e./acre) around aquatic areas.</p> <p><b>Timing:</b> Postemergence to rapidly growing plants.</p> <p><b>Remarks:</b> Glyphosate is a nonselective herbicide. It has no soil activity and its effectiveness is increased by addition of ammonium sulfate. Aquatic registered formulations, e.g., <i>Rodeo</i> and <i>Aquamaster</i>, are available for use close to water.</p>
<b>BRANCHED-CHAIN AMINO ACID INHIBITORS</b>	
Imazapic <i>Plateau</i>	<p><b>Rate:</b> 4 to 6 oz product/acre (1 to 1.5 oz a.e./acre)</p> <p><b>Timing:</b> Preemergence or postemergence.</p> <p><b>Remarks:</b> Imazapic has mixed selectivity and tends to favor members of the Asteraceae and some grasses. It has some soil residual activity. In postemergence applications, use a methylated seed oil surfactant at 0.25%. It is not registered for use in California.</p>
Imazapyr <i>Arsenal, Habitat, Stalker, Chopper, Polaris</i>	<p><b>Rate:</b> 2 pt product/acre (8 oz a.e./acre)</p> <p><b>Timing:</b> Shortly after emergence.</p> <p><b>Remarks:</b> Imazapyr is a nonselective herbicide. It has long soil residual activity and leaves more bare ground than other treatments, even a year after application. <i>Habitat</i> is an aquatic registered formulation available for use close to water.</p>

**ECOMMENDED CITATION:** DiTomaso, J.M., G.B. Kyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.