

**Pocket Guide for Weed Seedling  
Identification:**  
*Common Broadleaves*

*Southwestern and Central Arizona*

**University of Arizona  
Cooperative Extension  
July 4, 2022**

Introduction .....	4
Leaf Shapes and Tips .....	7
Leaf Margins.....	8
1. Shepherds Purse ( <i>Capsella bursa-pastoris</i> )...	9
2. Sowthistle ( <i>Sonchus asper</i> ) .....	11
3. Horseweed ( <i>Conyza canadensis</i> ) .....	13
4. Hairy Fleabane ( <i>Conyza bonariensis</i> ) .....	15
5. Sunflower ( <i>Helianthus annuus</i> ) .....	16
6. Coulter Spiderling ( <i>Boerhavia coulteri</i> ) .....	18
7. Pigweed ( <i>Amaranthus palmeri</i> ).....	20
8. Thumb Pigweed ( <i>Amaranthus albus</i> ).....	21
9. Purslane ( <i>Portulaca oleracea</i> ) .....	22
10. Nettleleaf Goosefoot ( <i>Chenopodium murale</i> ).....	24
11. Lambsquarters ( <i>Chenopodium album</i> ).....	26
12. Sahara Mustard ( <i>Brassica tournefortii</i> ).....	28
13 Groundcherry ( <i>Physalis wrightii</i> ) .....	30
14. Malva ( <i>Malva parviflora</i> ) .....	32
15. Puncturevine ( <i>Tribulus terrestris</i> ).....	34
16. Russian Thistle ( <i>Salsola kali</i> ) .....	35
17. Sesbania ( <i>Sesbania sesban</i> ) .....	37
18. Spurge ( <i>Chamaesyce (=Euphorbia) maculata</i> ) .....	38



19. Nightshade ( <i>Solanum elaeagnifolium</i> Cav.)	40
20. Horse Purslane ( <i>Trianthema portulacastrum</i> L.)	41
21. Desert Needle ( <i>Palafoxia arida</i> var <i>arida</i> )	42
22. London Rocket ( <i>Sisymbrium irio</i> )	44
23. Lesser Swinecress ( <i>Coronopus didymus</i> )	45
24. Yellow Sweet Clover ( <i>Melilotus officinalis</i> )	46
25. Camphor Weed ( <i>Heterotheca subaxillaris</i> )	47
26. Mesquite ( <i>Prosopis spp.</i> )	48
27. Small Flowered Gaura ( <i>Gaura parviflora</i> )	49
Credits	51

# Introduction

There are abundant resources for weed identification of mature plants. These include very complete guides such as “Weeds of California and Other Western States” by Joseph DiTomaso published by University of California. “An Illustrated Guide to Arizona Weeds” by Kittie F. Parker with excellent drawings by Lucretia Breazeale Hamilton. There are also several phone apps for weed identification.

However, the cotyledons of weeds frequently have a different shape than the true leaves, which makes identification of seedlings difficult for some species.

The purpose of this pocket booklet is to provide a quick reference with good images that can be carried in your truck to help you identify the most common broadleaved weeds in Southwestern and Central Arizona.

We plan to add more species to the electronic version of this publication as images become available and, in the future, will work with the grasses, which also are a challenge to identify. We hope this pocket guide serves the agricultural industry in Arizona, and that all Pest Control Advisers (PCA's) and Growers use it to aid in management decisions in their operations.

The method for identification presented is not by using a dichotomous key or answering complicated questions about the species. The idea is to leaf through the booklet and find images that match plants you see in the field. If there are unusual characteristics, we note them in our comments for each weed.

Each brief description includes information on the season, habitat, cotyledons, and a distinguishing characteristic.

Many of the leaf types in the descriptions are illustrated in Figure 1, for a better understanding of the terms used.

Also, the leaf margins are illustrated in Figure 2, which makes our descriptions easier to understand.

Please enjoy the Arizona Broadleaves Pocket Guide for ID. Let us know if it is helping you. If you have any questions, please contact us at the University of Arizona Yuma Agricultural Center.

***Marco Peña***

***Associate in Extension Weeds / Agronomy***

***University of Arizona***

***Arizona Cooperative Extension***

***Barry Tickes***

***Emeritus Professor Weed Science***

***University of Arizona***

***Arizona Cooperative Extension***

# Leaf Shapes and Tips

## LEAF SHAPES



LANCEOLATE



CIRCULAR



RENIFORM



OBLONG



OVOBATE



OVAL



HEART



OVATE



SPATULATE



TRIANGULAR



NEEDLE



ELLIPTIC



OBELLIPTIC

## LEAF TIPS



ROUND



BLUNT



POINTED



NOTCHED

Figure 1.

# Leaf Margins

## LEAF MARGINS



SERRATED



SPINY



LOBED



SMOOTH

Figure 2.

## 1. Shepherds Purse (*Capsella bursa-pastoris*)

**Season:** Winter Annual

**Habitat:** Present in all crops and ditch banks, home gardens.

**Cotyledons:** Oval with a short petiole. First true leaves with hairs and spoon shape.

**Distinguishing characteristic:** Later leaves form a rosette soon after emergence.





Shepherspurse seedlings close up



## 2. Sowthistle (*Sonchus asper*)

**Season:** Winter Annual

**Habitat:** Present in all crops and ditch banks, home gardens.

**Cotyledons:** Oval, round tips, long stalks. Later leaves have a few hairs and have prickles in the edges.

**Size tip to tip:** 1.0-1.5 cm

**Distinguishing characteristic:** Later leaves release a milky sap.





Sowthistle showing prickles in edges

### 3. Horseweed (*Conyza canadensis*)

**Season:** Summer Annual or biennial. Could germinate in fall and spring.

**Habitat:** Prefers moist and rich soil. Disturbed areas, also ditch banks.

**Cotyledons:** Oval, very difficult to distinguish from fleabane. Leaf pubescence varies from low to high.

**Size tip to tip:** 3-4 mm

**Distinguishing characteristic:** Later plants grow erect and branch only in the flowering portion.





Size of horseweed seedlings compared to a pencil tip

#### 4. Hairy Fleabane (*Conyza bonariensis*)

**Season:** Summer Annual or biennial. Could germinate in fall and spring.

**Habitat:** Prefers moist and rich soil. Found in disturbed and unmanaged areas, ditch banks, roadsides, croplands, nurseries, orchards, vineyards.

**Cotyledons:** Oval, very difficult to distinguish from horseweed. Leaf pubescence varies from low to high.

**Size tip to tip:** 3-4 mm

**Distinguishing characteristic:** Later leaves are gray green, which distinguishes from horseweed.





## 5. Sunflower (*Helianthus annuus*)

**Season:** Summer Annual

**Habitat:** Moist soils, abandoned fields, ditch banks, roadsides.

**Cotyledons:** Oblong, round tips.

**Size tip to tip:** 1.0 – 2.5 cm

**Distinguishing characteristic:** First true leaves have shape of an ellipse, covered with hairs, then later leaves are lanceolate shape.





Sunflower cotyledons and root system

## 6. Coulter Spiderling (*Boerhavia coulteri*)

**Season:** Summer Annual or Perennial

**Habitat:** Disturbed areas, ditch banks, roadsides.

**Cotyledons:** Oblong, round tips.

**Size tip to tip:** 1.0 – 2.5 cm

**Distinguishing characteristic:** Later leaves are lanceolate shape somewhat triangular.







Coulter Spiderling with true leaves

## 7. Pigweed (*Amaranthus palmeri*)

**Season:** Summer Annual

**Habitat:** Disturbed areas, ditch banks, roadsides.

**Cotyledons:** Oval, elongated, narrow. Reddish green on top, red underneath.

**Size tip to tip:** 5-8 mm

**Distinguishing characteristic:** Later leaves are lanceolate shape somewhat triangular.



## 8. Thumble Pigweed (*Amaranthus albus*)

**Season:** Summer Annual

**Habitat:** Disturbed and unmanaged areas, ditch banks, roadsides.

**Cotyledons:** Oval, elongated, narrow. Reddish green on top, red underneath.

**Size tip to tip:** 5-8 mm

**Distinguishing characteristic:** Prominent mid vein on true leaf, which are more oval.



## 9. Purslane (*Portulaca oleracea*)

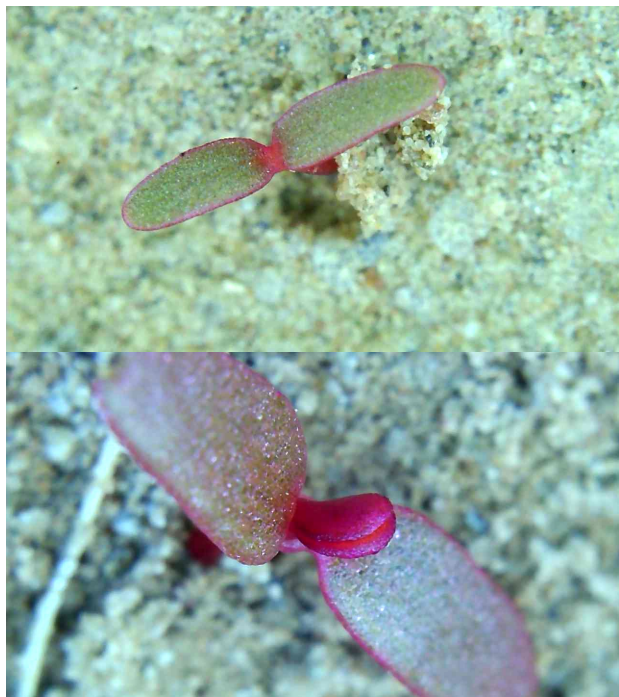
**Season:** Summer Annual

**Habitat:** Present in all crops and unmanaged areas, ditch banks, roadsides.

**Cotyledons:** Reddish smooth, waxy.

**Size tip to tip:** 5-8 mm

**Distinguishing characteristic:** Cotyledons turn green with red margins.





Purslane seedling with true leaves

## 10. Nettleleaf Goosefoot (*Chenopodium murale*)

**Season:** Winter Annual

**Habitat:** Present in all winter crops and ditch banks.

**Cotyledons:** Thick, oblong and narrow, with a mealy (granulated) surface, reddish underneath.

**Size tip to tip:** 8-10 mm

**Distinguishing characteristic:** Upright reddish stem.







Nettleleaf goosefoot seedlings

## 11. Lambsquarters (*Chenopodium album*)

**Season:** Winter Annual.

**Habitat:** Present in all winter crops and ditch banks.

**Cotyledons:** Thick, oblong more linear than goosefoot, with a mealy (granulated) surface, purple underneath.

**Size tip to tip:** 8-10 mm

**Distinguishing characteristic:** Less common than nettleleaf goosefoot.







Nettleleaf goosefoot and Lambsquarter together

## 12. Sahara Mustard (*Brassica tournefortii*)

**Season:** Winter Annual

**Habitat:** Present in all winter crops and ditch banks.

**Cotyledons:** Kidney shaped, similar to broccoli.

**Size tip to tip:** 6-10 mm

**Distinguishing characteristic:** True leaves are serrated.





Sahara mustard seedling developing true leaf

### 13 Groundcherry (*Physalis wrightii*)

**Season:** Summer Annual

**Habitat:** Present in all summer crops and ditch banks.

**Cotyledons:** Lanceolate, pubescent, rounded at tip, gray green color.

**Size tip to tip:** 1-1.5 cm

**Distinguishing characteristic:** Emerging true leaves resemble pig ears.





Groundcherry seedlings and true leaf emergence



## 14. Malva (*Malva parviflora*)

**Season:** Winter Annual/Biennial

**Habitat:** Present in all winter crops and ditch banks.

**Cotyledons:** Heart shaped, smooth, notched at base, reddish stalks.

**Size tip to tip:** 6-10 mm

**Distinguishing characteristic:** True leaves round, scalloped edges with long petioles.





Heart shape cotyledons

## 15. Puncturevine (*Tribulus terrestris*)

**Season:** Summer Annual

**Habitat:** Present in all crops and ditch banks.

**Cotyledons:** Narrow, thick, blunt tip.

**Size tip to tip:** 1-1.5 cm

**Distinguishing characteristic:** True leaves pinnate.





## 16. Russian Thistle (*Salsola kali*)

**Season:** Summer Annual

**Habitat:** Present in ditch banks.

**Cotyledons:** Long narrow, needle shape

**Size tip to tip:** 1-1.5 cm

**Distinguishing characteristic:** Mature plant creates spherical shape.





Russian thistle showing needle shape leaves

## 17. *Sesbania* (*Sesbania sesban*)

**Season:** Summer Annual

**Habitat:** Prefers highly disturbed wet sites and sandy soils.

**Cotyledons:** Oblong, smooth.

**Size tip to tip:** 1.5 cm

**Distinguishing characteristic:** Second true leaves are divided in leaflets.



**18. Spurge** (*Chamaesyce* (= *Euphorbia*) *maculata*)

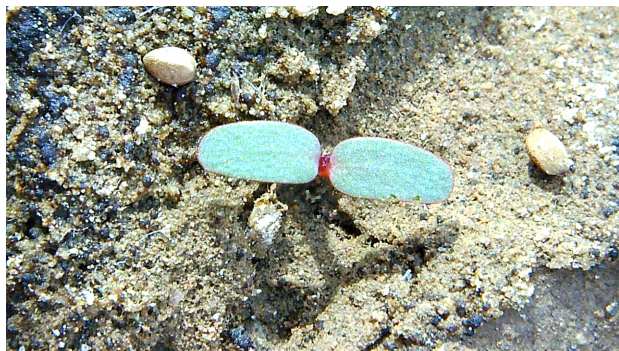
**Season:** Summer Annual but can be a weak perennial.

**Habitat:** Cultivated areas, ditchbanks, roadsides.

**Cotyledons:** Oblong, smooth.

**Size tip to tip:** 3-6 mm

**Distinguishing characteristic:** It has a milky sap that can cause dermatitis.





Spurge seedling with true leaves



**19. Nightshade** (*Solanum elaeagnifolium* Cav.)

**Season:** Summer/perennial

**Habitat:** Cultivated areas, rangeland, pastures, roadsides, and disturbed, unmanaged places.

**Cotyledons:** Lanceolate, dense stellar hairs under on the undersurface.

**Size tip to tip:** 6-10 mm

**Distinguishing characteristic:** Cotyledons are gray/green in color.



## 20. Horse Purslane (*Trianthema portulacastrum* L.)

**Season:** Summer annual

**Habitat:** Cultivated areas, rangeland, pastures, roadsides, and disturbed, unmanaged places.

**Cotyledons:** Oval or round cotyledons, smooth, larger than common purslane, dark green, no pubescence.

**Size tip to tip:** 1-2 cm

**Distinguishing characteristic:** Reddish stem, red margins develop on seed leaves.





## 21. Desert Needle (*Palafoxia arida* var *arida*)

**Season:** Annual/Perennial

**Habitat:** Some cultivated areas, sandy locations in desert areas.

**Cotyledons:** Oval, true leaves linear needle like, abundant pubescence.

**Size tip to tip:** 5-10 mm

**Distinguishing characteristic:** Named after needle shaped true leaves as shown in image below.





Desert needle seedling on the right and Russian  
thistle on the left

## 22. London Rocket (*Sisymbrium irio*)

**Season:** Winter annual

**Habitat:** Winter annual crops, sandy locations in desert areas.

**Cotyledons:** Hairless, oval, and on stalks that are same length of the leaf.

**Size tip to tip:** 6-10 mm

**Distinguishing characteristic:** True leaves present a few teeth sometimes smooth edges.



## 23. Lesser Swinecress (*Coronopus didymus*)

**Season:** Winter annual

**Habitat:** Present in vegetable crops, alfalfa fields, orchards, gardens, nurseries, ditch banks, turfs, and roadsides.

**Cotyledons:** Hairless, narrow, and lanceolate shape.

**Size tip to tip:** 6-10 mm

**Distinguishing characteristic:** Plants have an offensive skunk odor.



## 24. Yellow Sweet Clover (*Melilotus officinalis*)

**Season:** Biennial

**Habitat:** Present in disturbed areas, vegetable crops, alfalfa fields, orchards, and gardens.

**Cotyledons:** Oval, hairless with stalks

**Size tip to tip:** 6-10 mm

**Distinguishing characteristic:** Later leaves divide into three leaflets.



## 25. Camphor Weed (*Heterotheca subaxillaris*)

**Season:** Summer annual, sometimes biennial from taproot.

**Habitat:** Deserts and disturbed areas, roads, ditches, and washes.

**Cotyledons:** Ovate to lanceolate hairy on both sides; leaf shape.

**Size tip to tip:** 6-10 mm

**Distinguishing characteristic:** Very aromatic leaves.





## 26. Mesquite (*Prosopis spp.*)

**Season:** Perennial

**Habitat:** Mesquite is a woody weed that invades rangelands, grasslands, forming thick, forming impenetrable thorny in areas where it grows in big clumps.

**Cotyledons:** Oval to elongated.

**Size tip to tip:** 10-15 mm

**Distinguishing characteristic:** True leaves are pinnate.





**27. Small Flowered Gaura** (*Gaura parviflora.*)

**Season:** Annual or biennial

**Habitat:** Citrus orchards, roads, and ditches.

**Cotyledons:** Oval to elongated.

**Size tip to tip:** 15-20 mm

**Distinguishing characteristic:** Plant develops very long floral spikes when mature.





Emergence of the true leaf

## **Credits**

This project was possible with sponsorship  
from the Arizona Department of Agriculture,  
Specialty Crop Block Grant Program, 1688 W.  
Adams St. Phoenix, AZ 85007