

Common Purslane Biology and Control in Fruiting Vegetables, Cucurbits, and Small Fruits¹

Andrew W. MacRae²

Common purslane is found in most habitats in Florida, including cultivated fields, pastures, lawns, ditch banks, and waste areas. It is a drought-resistant annual with succulent leaves and stems. It is very common in the row middles between the beds of plastic mulch in vegetable and strawberry production fields. It also thrives in the mulch production system used with highbush blueberries.

Classification

Common name: common purslane

Scientific name: *Portulaca oleracea* L.

Family: Portulacaceae

Seedling Identification

Cotyledons of common purslane are hairless and usually reddish in color. The first true leaves appear opposite, with the next set of emerging leaves also appearing opposite and orientated 90 degrees from the first set (Bryson and DeFelice 2009).

Mature Plant

The leaves of common purslane appear opposite but are slightly alternating, 0.5–1 in. long, obovate in shape, and succulent. The root system is fibrous with a prominent taproot. Flowers are yellow with five petals. The inflorescences are solitary in the leaf axils or grouped several together at the end of the stems. The seeds are oval, very small (1/50th of an inch or smaller = 0.5 mm), and usually black.



Figure 1. Common purslane growing in the row middles of a tomato field.

Management Considerations

Common purslane occurs so frequently in vegetable and small fruit production systems, both in the row middles and emerging from the planting holes in plasticulture systems, that an active

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2. Andrew W. MacRae, assistant professor, UF/IFAS GCREC

management plan is recommended. Under favorable conditions, common purslane can produce up to 240,000 seeds per plant (Miyanishi and Cavers 1980). This weed goes to seed late in the growing season and should be removed from the field using herbicides after the final crop harvest. If left to reproduce after the removal of the polyethylene mulch, it will replenish the seed bank and become a problem in the field for years to come.



Figure 2. Common purslane emerging from a planting hole in a tomato field.

Chemical control – Preemergence

Tomato and Pepper – An application under the polyethylene plastic mulch of oxyfluorfen (Goal 2XL[®] or Goaltender[®]) provides excellent control. For tomato only, excellent control can be achieved with rimsulfuron (Matrix[®]) applied under the polyethylene mulch. Napropamide (Devrinol[®] 50DF or 2E) provides good control. When control is desired in the row middles, either flumioxazin (Chateau[®] SW) or, in the case of tomato only, rimsulfuron provides excellent control. Pendimethalin (Prowl[®] H₂O) and halosulfuron (Sanda[®]) provide good control. All row middle applications require rain or overhead irrigation to activate the herbicide.

Cucurbits – On bare-ground plantings and in row middles, DCPA (Dacthal[®] W-75) provides good control, while the combination of ethalfluralin and clomazone (Strategy[®]) provides excellent control. For watermelon, cantaloupe, and cucumber, halosulfuron provides good control when used in the row middles or under polyethylene mulch.

Strawberry – Oxyfluorfen provides excellent control when used under polyethylene mulch. Napropamide is labeled for use under the plastic mulch, while pendimethalin is labeled for use in the row middles. Both these products provide good control of purslane. Flumioxazin provides excellent control of purslane and is registered for use in the row middles.

Blueberry – Oryzalin (Surflan[®]) provides good control of purslane, while flumioxazin provides excellent controls.

Chemical control – Postemergence

There are no over-the-top or directed postemergence options for control of common purslane in pepper, cucurbits, and strawberry.

Tomato and Pepper – For tomato only, a post-directed application of metribuzin (Sencor[®]) provides fair control. In the row middles, paraquat (Gramoxone Inteon[®]) or carfentrazone (Aim[®] EC or EW) can be applied but will only control newly emerged seedlings; larger plants will regrow.

Cucurbits – In the row middles, paraquat or carfentrazone can be applied but will only provide good control of small seedlings; larger plants will regrow.

Strawberry – In the row middles, paraquat or carfentrazone can be applied but will only provide good control of small seedlings; larger plants will regrow. Glyphosate (Roundup[®]-type products) can be used in the row middles to provide excellent control of purslane, but the addition of carfentrazone is often beneficial, especially when the purslane is larger in size.

Blueberry – In the row middles or directed to the base of the plants (no contact with green foliage or bark), paraquat or carfentrazone can be applied but will only provide good control of small seedlings; larger plants will regrow. Glyphosate can be used with the same precautions as the previously mentioned products to provide excellent control of purslane, but the addition of carfentrazone is often beneficial, especially when the purslane is larger in size. Flumioxazin provides fair to good control of

purslane and aids glyphosate in control of larger plants.

Conclusion

Common purslane can be a prolific seed producer and may warrant hand removal when populations emerging from planting holes become extensive. Prevention of seed production is the key management strategy for common purslane. This requires preemergent herbicides and early applications of postemergent products, as the larger plants can regrow after an application of all the registered herbicides. Any management program for purslane should include a cultural component that prevents the weed from producing seed at the end of the growing season and during fallow periods.

Literature Cited

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