

Common Purslane

Laura McDermott
Cornell Cooperative Extension
Eastern New York Commercial Horticulture Program



Common Purslane

Common purslane (*Portulaca oleracea* L.) is one of the most common weeds eastern NY farmers encounter, but because of its prostrate habit, many farmers don't pay enough attention to it – until too late!

Purslane likely originated in South America and spread into North America with indigenous agriculture. Now it occurs throughout most of the world except above 60° N latitudes.

Purslane seed is very small and can germinate immediately after falling from the capsule. Light is usually required for germination of freshly shed seeds but germination in the dark becomes more likely as the seeds age. Summer shed seeds need light to germinate, but lower and fluctuating temperatures are adequate for germination at other times of the year. Germination is not negatively impacted by pH, doing just fine in 5.0-9.0 soils.

Common purslane seeds have germinated after as long as 40 years, but their viability does seem to decline with time. Experiments that used solarization or moist sterilization have reduced the percentage of germination by as much as 70%, but did not eliminate viable seed. Plants measuring 1' in diameter produce approximately



Common Purslane Seedling

7,000 seeds, but there have been plants measured that produce over 100,000 seeds! Seeds are dispersed in soil clinging to shoes, tires, and machinery and seeds have been recovered from wild and domesticated mammal feces and bird droppings.

Most purslane seedlings begin emerging in late spring when air temperature pushes into the 80s and soil moisture is adequate. Germination continues throughout the

summer. Seed emergence declines rapidly as seed depth increases, and seedlings do not emerge from seeds buried deeper than 1".

Common purslane is an annual that is very sensitive to frost but is extremely drought tolerant. Its waxy, succulent leaves and stems aid water storage. Under extreme drought conditions, the plants shed their leaves and grow new ones when water again becomes available. This weed loves rich soils and research shows a linear increase in growth up to nitrogen levels of 133 lb/a. Purslane responds to nitrogen and potassium but has the strongest response to phosphorus. Purslane grows best on sandy soils but tolerates a wide range of soil textures as long as the plants are well drained. Purslane grows slowly in shade, and since the plant has a prostrate growth form, it is a poor competitor for light. Under moist shady conditions, the species is prone to fungal diseases (*Albugo portulacae* causes a rust that can kill the plant), but even dying plants can set seed. The species is primarily self-pollinated.

Common purslane germinates in response to environmental cues associated with tillage, so when soil has been disturbed by tillage, a flush of new growth occurs. The plants may then re-root, or continue to mature and set seeds even without contact with the soil. The plant fragments easily, and the pieces can develop new root systems from stem fragments, but only stem fragments with nodes produce new leaves. It is the presence of leaves on the fragment that improves survival and new growth.

Plants flower 4-8 weeks after emergence and set seeds 7-16 days later. Plants emerging in mid-summer can flower within 2-3 weeks of emergence. This translates into two or more generations per year. Seeds mature on main branches first and subsequently on secondary branches, giving a sequential production of seeds from individual plants throughout the season.

Management

Because newly emerged common purslane seedlings are very small and fragile, stirring the top 1-2" of soil 2-4 times after the soil warms is highly effective. Cultivation of plants beyond the cotyledon stage is effective only if you can bury the plant, and that becomes difficult as plant size increases. Flame weeding kills seedlings, but large plants recover unless unusually long exposure times are used.

Organic mulch materials are effective for suppressing common purslane because the species is susceptible to rotting under continuously shady, humid conditions. The prostrate growth form requires less mulch to smother it than for most other annual weeds. Crops that form a dense shade will often shade out purslane – as long as the crop is kept clean until the canopy fills in.

Because the seeds are highly persistent in the soil, removal of escapes before they set seeds is useful for long-term control, but difficult due to the plant's substantial taproot. Since flowers can self-pollinate without opening, plants can ripen seeds while still appearing to be immature.

Potential Crop?

Common purslane is edible as a salad vegetable. The digestibility, protein content and mineral content is higher than that in most other weed species, and the plant is particularly rich in omega-3-fatty acids, vitamin E, and vitamin C. However, livestock fed large amounts of common purslane can develop nitrate and oxalate poisoning.