

The Germination Profile of Selected Salinas Valley Weeds

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Abstract

In most temperate climates warm-season and cool-season weeds generally exhibit seasonal patterns of germination. However, in the Salinas Valley, there is a considerable overlap in the periods when cool-season and warm-season weeds germinate. Weed emergence was observed over a 10 month period at three sites in Monterey County. Winter annuals observed were annual bluegrass (*Poa annua*), annual sowthistle (*Sonchus oleraceus*), burning nettle (*Urtica urens*), common chickweed (*Stellaria media*), common groundsel (*Senecio vulgaris*), persian speedwell (*Veronica persica*), and shepherdspurse (*Capsella bursa-pastoris*). Summer annuals included common purslane (*Portulaca oleracea*), hairy nightshade (*Solanum sarrachoides*), and pigweed (*Amaranthus* spp.). Annual sowthistle, common groundsel, common purslane, and shepherdspurse germinated over most of the 10 month period. Hairy nightshade and pigweed germinated only during April to October. Annual bluegrass, burning nettle, and common chickweed germinated from April to December. Germination of persian speedwell fluctuated over the 9 month period with germination peaks occurring in April and July to November.

Introduction

Preemergence herbicides are by their nature preventative treatments applied to increase the likelihood that a crop can be produced successfully without losses due to weeds. The difficulty in using preemergence herbicides in an integrated weed management system is that one must apply these herbicides before the weeds germinate. We are working to develop models to predict weed germination on the Central Coast of California by observing the germination pattern of weeds over time.

Materials and Methods

1. Three studies were established in Salinas (2) and Chualar (1) to monitor weed germination over time.
2. The plot size was 75' long and 26.7' wide with 4 replicates.
3. Weed density counts were taken every 2 to 4 weeks from March to December 1998.

Results and Discussion

1. Surprisingly, common purslane germinated throughout the 10 month period, with the possible exception of December (Table).
2. Annual sowthistle, and common groundsel, and shepherdspurse germinated throughout the 10 month period.
3. Hairy nightshade and pigweed germination was observed from April until October.
4. Annual bluegrass, common chickweed, and burning nettle germinated from April to December.
5. Persian speedwell germination occurred throughout the period except for an interval in May and June when no germination was observed.

Acknowledgements

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Table. Germination calendar of Salinas Valley weeds over a 10 month period in 1998.^a

Weed	M	A	M	J	J	A	S	O	N	D
Winter annuals										
Annual bluegrass		+	+	+	+	+	+	+	+	+
Annual sowthistle	+	+	+	+	+	+	+	+	+	+
Burning nettle		+	+	+	+	+	+	+	+	+
Common chickweed		+	+	+	+	+	+	+	+	+
Common groundsel	+	+	+	+	+	+	+	+	+	+
Persian speedwell		+	-	-	+	+	+	+	+	+
Shepherdspurse	+	+	+	+	+	+	+	+	+	+
Summer annuals										
Common purslane	+	+	+	+	+	+	+	+	+	(-) ^b
Hairy nightshade		+	+	+	+	+	+	+	-	-
Pigweed spp.		+	+	+	+	+	+	+	-	-

^a + (germination observed); - (germination not observed)

^bHave not verified December germination