



"What are Weeds Doing in My Field?"
a healing response to land disturbance after natural disaster or human activity leaves the soil vulnerable to degradation.
Absorb carbon dioxide from the atmosphere
Restore biodiversity
Protect the soil from erosion
Replenish organic matter: feed and restore soil life
Absorb, conserve, and recycle soluble nutrients
Provide habitat for insects and animals



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Know Your Weeds: Biennials

Biennials start from seed in spring and produce a rosette with a fleshy tap-root. The 2nd spring the tap-root sends a flowering shoot, then dies after the seeds ripen.





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System Design PREVENTION: Key to long-term management					
Many weed seeds retain their viability when buried deep in the soil.					
Length of time	Number of species that germinated				
1 year	71 species				
6 years	68 species				
10 years	68 species				
20 years	57 species				
30 years	44 species				
38 years	36 species				



Depth of Weed Emergence				
Species	Optimum depth	Maximum depth		
Common Chickweed	0.4	0.8		
Lambsquarters	0.2	2.0		
Shepherd's Purse	0.2	0.8		
Wild Mustard	0.4	2.3		
Common Purslane	0.1	0.8		

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Fallow: Reduce The Seed Bank Before Crop Planting.

0" to 1" deep: Weed seeds in the top inch of soil are most able to germinate and will do so very rapidly

1" to 2" deep: Weed seeds can germinate, but are

2" to 4" deep: Weed seeds are mostly dormant and

bulbs and tubers will sprout and grow at this depth.

4" and deeper: All the seeds are dormant. Only

few species will germinate at this depth

slow to emerge

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•Allelochemicals can hurt some vegetables, particularly small seeded crops that are direct sown too soon.

•Large-seeded and transplanted vegetables are generally more tolerant.

•Lettuce seedlings are especially sensitive to allelochemicals.



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Free weed-control service: Mice

Prairie deer mice tag and whitefooted mice eat 70 to 90% of the surface weed seeds.



consume more than 40 percent of the seed in a single night," *Brent Danielson*

Enhance seed predation by keeping weed seeds on the soil surface as long as possible by delaying tillage.



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False Seed Bed – FIELD PREPARATION

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Plan management for maximum gross income per acre or cost-effective weed and pest control, rapid harvest and packing?



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- Weather conditions can interfere with timely incorporation - Improperly incorporated plants can interfere with planting and cultivation



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After vegetables are harvested the clover rapidly covers the ground, effectively closing the niche while fixing nitrogen. Eliot Coleman, *The New Organic Grower*. © Mark Schonbeck.





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System Design											
Rotation-Interrupt the life cycle											
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					Onio	n		Hair	Vetcl	h and	Rye
ar 2 Hair Vetch and Rye Sweet Corn Oats											
	Oats		G	reen	Peas		Fal	l Bro	ccoli		
Weed Window of Opportunity •Plant Canopy					0	Germination Temperatures •Wild Mustard 30° F					
•Plant Size					•Grasses 50° F						
•Ease of Weed Control				•Wild Oats 35 F •Broad Leaves 50° F •Pigweed at 68°F •Pigrsian Thirtle 28° E							
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rtang	000 +380	8.18		24		
region	000-198	0.10				Iight; N = nitrate; T± = fluctua





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Stirrup Hoe

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Bed System with close spacing Flat Bed Raised Bed Perfectly straight rows are crucial for cultivation Row Crop Common Spacing 36 36 36 36

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