

Crop Profile for Wheat in Illinois

Prepared October, 2000

General Production Information

PRODUCTION FACTS	
U.S. Rank/ Percent:	7 th (1) / 3.7% (1)
Acres Planted:	1,250,000 (2)
Harvested:	1,150,000 (2)
Total Yield:	70,150,000 bu (2)
Average bushels/acre:	61.0 (2)
U.S. average bu/acre:	45.0 (2)
Value per bushel:	\$3.15/bu (2)
Total value of Illinois wheat production:	\$220,973,000 (2).

General Practices

Wheat is grown throughout Illinois but is more commonly grown in the southern one-third of the state. The longer season available in the region below I-70 makes it possible to follow-up the late June or early July wheat harvest with a double-crop of soybeans if sufficient soil moisture is available. The soft red winter wheats are sold to some specialized local elevators or are sold to domestic or foreign markets.

Insect Pests

Insect pests in the Illinois wheat crop are not monitored. There is no reliability for any state data. The insects listed below bring the most damage. The Bird Cherry-oat Aphid and the Hessian Fly also carry

disease vectors and are therefore included in this list.

% Crop Loss and Average Area Treated for Arthropod Pests

Common Name	Scientific Name	Avg. US Reported % Crop Loss	Avg. US Reported Acres Treated
Aphids	<i>Aphis spp.</i>	8.9%	66,051
Armyworms	<i>Pseudaletia unipuncta</i>	6.6%	110,795
Bird Cherry-oat Aphid	<i>Rhopalosiphum padi</i>	0.9%	28,409
Cereal Leaf Beetle	<i>Oulema melanopus</i>		
Grasshoppers	<i>Melanoplus spp.</i>	0.56%	1,590,909
Hessian Fly	<i>Mayetida destructor</i>	6.1%	73,863

Armyworms^{3,4} Adults moths migrate into Illinois each spring; the female moths lay eggs in grasses and wheat. The larvae feed on the grasses until completion of larval development, then pupate in the soil. Moths emerge in early summer, mate, and lay eggs. Armyworm larvae may strip the leaves off the stem and chew through the stem beneath the grain head. There are usually two to three generations per year, but the migrant population in the spring is usually the most destructive. Conditions that suppress parasitoid populations, such as cool, wet weather or drought, are favorable for army worm infestations. In outbreak years, as much as 50 percent of the wheat in southern Illinois has been treated with insecticides, but on average, very few acres are treated for armyworm control. Treatment is justified when there are 6 or more nonparasitized larvae per foot of row.

Bird Cherry-Oat Aphid⁷ The bird cherry-oat aphid ranges in color from orange-green to dark green, and sometimes even greenish-black. The most common time of year to see the aphid is in February or March. When the aphids attack the wheat, they can cause a golden yellow streaking on the leaves. Occasionally heavy populations cause the flag to curl up in a tight cork-screw fashion that may trap the awns, resulting in a fish-hook appearance to the head. A combination of predators and parasites can usually keep the aphids under control. This method should be considered before a chemical control.

Cereal Leaf Beetle Adult cereal leaf beetles are about 3/6 inch long and have metallic looking heads and wing covers. The legs and front of thorax are brownish-red. Adults overwinter in fallen leaves, ground litter, or other debris. They lay eggs in the spring. Eggs hatch in about 5 days and Larvae develop in 10-12 days after that. Regular feeding habits do not affect the growing plant. The wheat becomes severely defoliated only when a considerable amount of green tissue is lost on the upper leaves. Severe defoliation is recognized by a white frosty look.

Grasshoppers, Differential⁴ (*Melanoplus differentialis*) **Migratory** (*M. sanguinipes*) , **Redlegged** (*M.*

femurrubrum), and **Twostriped** (*M. bivittatus*) Grasshoppers overwinter as eggs in the soil. Nymphs hatch in the spring and feed for several weeks, usually completing their development by mid-summer. Adults feed throughout the remainder of the summer. Grasshoppers thrive during hot, dry summers when naturally occurring pathogens are suppressed, and tend to be more numerous the year after a drought. Grasshoppers prefer to feed on weeds, but when these are unavailable, they will move readily into crop fields. The amount of insecticide use varies, but during outbreak years up to 11% of field edges are treated.

Hessian Fly ^{3,4} Hessian flies overwinter as puparia at the base of wheat plants. Adults emerge in April and deposit eggs on wheat leaves. After hatching, the larvae move immediately to a position between the leaf sheath and the stem. Larval feeding occurs from 2 to 6 weeks, after which the larvae pupate into a case-like puparium. In late summer through early fall, a second generation emerges. Females lay eggs on the leaves of young plants or volunteer wheat. Larvae mature to the pupal stage by mid-autumn and overwinter as puparia. Conditions that favor infestations of Hessian fly are wheat planted too early in the fall, the presence of volunteer wheat, and abundant acres of wheat varieties susceptible to attack by Hessian fly. Hessian flies have overcome the latest tolerance/resistance genes in most varieties and the pest threatens to become a major problem again. However, the "fly-free" planting dates help avoid damage caused by newly-emerged adult Hessian flies in the fall. If the crop does not emerge until after egg-laying females have died, fall-sown wheat will escape Hessian fly injury. The fly-free dates in Illinois fall between September 17 at the northernmost portion of the state and October 30 at the southern tip. Insecticides are not used for Hessian fly control in Illinois.

Insecticide Rates, Units, REI, PHI, and Primary Targets

Trade Name	Common Name	Rate		Unit	REI	PHI	Primary
		low	high				
					hrs	days	Target
Cygon	Dimethoate						Aphids, grasshoppers
Malathion 57% EC	Malathion	0.5	2.0	pts	12		Aphids, grasshoppers
PennCap-M	Methyl parathion	2.0	3.0	pts	112	15	Aphids, armyworms, grasshoppers
Sevin XLR Plus	Carbaryl	1.0	3.0	pts	12	7	Armyworms, cereal leaf beetle, grasshoppers
Warrior T or 1E	Lambda-cyhalothrin	2.56	3.84	oz	24	30	Aphids, armyworms, cereal leaf beetle, grasshoppers

In 1998, insecticide use on Wheat in Illinois was insufficient to report. (Less than 1 percent of acres treated).

Diseases

The severity of plant diseases varies greatly from year to year depending on prevailing weather conditions. Warm, moist weather, particularly during the head filling stages can be problematic for wheat. Serious yield losses occur from plant diseases in portions of the state about every two or three years. Diseases not only reduce yields but will sharply reduce milling quality as well. Diseases also tend to be more severe in years when other stresses are present, such as during prolonged cool temperatures or drought or when insect damage is evident. Approximately 20 percent of the wheat seeded in the state gets a fungicide seed treatment. Resistant and tolerant cultivars and the use of cultural practices which minimize the prevalence of diseases are also commonly used. In the following plant disease summaries references are listed to the Report on Plant Disease (RPD) document from which the information was taken. The reference is given at the end of each section.

Avg. Crop Loss and % Crop Area Infested by Diseases

Common Name	Scientific Name	Avg. % Crop Loss*	Avg. Crop Area Infested*
Anthracnose	<i>Collectotrichum graminicola</i>		
Barley Yellow Dwarf Virus	BYDV	3.3%	1,373,522
Common Root and Foot Rot	<i>Fusarium spp.</i>	4.9%	1,421,875
Downy Mildew	<i>Sclerophthora macrospora</i>	<1%	
Ergot	<i>Claviceps purpurea</i>	<1% annually	
Foot Rot	<i>Pseudocercospora herpotrichoides</i>		
Leaf Rust	<i>Puccinia recondita f.sp. tritici</i>	5.5%	3,089,962
Loose Smut	<i>Ustilago tritici</i>	2%	from .3 to 7%
Mycotoxins	None		
Powdery Mildew	<i>Erysiphe graminis</i>	5%	388,257
Pythium Root Rot	<i>Pythium spp.</i>		
Rhizoctonia Root Rot	<i>Rhizoctonia solani</i>		
Rots and germ damage of stored wheat	<i>Aspergillus spp.</i>		
Scab	<i>Fusarium spp.</i>	4.9%	1,421,875

Septoria Glume Blotch and Leaf Blight	<i>Septoria tritici</i>	5.3%	3,984,375
Soilborne Mosaic Virus	<i>SBMV</i>	1% annually	from little to total loss
Stem Rust	<i>Puccinia graminis</i>	0.9%	284,090
Stinking Smut or Common Bunt	<i>Tilletia spp.</i>	3% annually	as high as 50%
Take-all Root and Crown Rot	<i>Gaeumannomyces graminis</i>	5.3%	5,397,727
Tan Spot	<i>Pyrenophora tritici-repentis</i>		can exceed 20%
Wheat Streak Mosaic Virus	<i>WSMV</i>	19.5%	4,337,121

***Based on US Averages**

Common Name: Anthracnose

Aggravating factors: Worsened by nematodes feeding on the roots, drought, and winter or chemical injury.

Control:

1. Sow thoroughly cleaned, certified seed.
2. Plant resistant or tolerant cultivars.
3. Maintain balanced soil fertility.
4. Rotating cereal crops with non-grass species.
5. Plow under stubble.

(RPD no. 113)

Common Name: Barley Yellow Dwarf Virus

Scientific Name: (*BYDV*)

Distribution: Throughout the state.

Aggravating factors: Damage varies by cultivar, virus strain, time of infection, and environmental conditions.

How disease is spread: By aphids.

Loss average: 5 % annually.

Control:

1. Select tolerant cultivars.
2. Plant as late in the season as possible, but after the Hessian fly-free date.
3. Maintain proper soil fertility.
4. Avoid double cropping.
5. Use quick acting insecticide to control vectors.

(RPD no. 101)

Common Name: Common Root and Foot Rot

Aggravating factors: Worsened by nematodes feeding on the roots, drought, and winter or chemical injury.

Control:

1. Sow thoroughly cleaned, certified seed.
2. Plant resistant or tolerant cultivars.
3. Maintain balanced soil fertility.
4. Rotating cereal crops with non-grass species.
5. Plow under stubble.

(RPD no. 113)

Common Name: Downy Mildew

Aggravating factors: Fungal infection occurs only in localized areas that have cereals growing in water logged soils.

Loss average: Less than 0.1%

Control:

1. Provide proper drainage.
2. Control grass weeds which act as alternate hosts.
3. Avoid planting in areas that are likely to flood.
4. Use disease free seed.

(RPD no. 122)

Common Name: Ergot

Aggravating factors: Favored by cool, wet weather which prolongs the flowering season.

How disease is spread: Transported by insects of many kinds.

Loss average: Less than 0.1% annually.

Comments: Ergot infested grain is discounted at elevators due to its toxicity to humans and livestock.

Control:

1. Mow nearby grasses before infection.
2. Rotate with nonsusceptible crops such as corn and legumes.
3. Plow under cereal stubble.
4. Use ergot free seed.
5. Clean infested seed for removal of the ergot sclerotia.

(RPD no. 107)

Scientific Name: Foot Rot, Eyespot or Strawbreaker

Common Name: (*Pseudocercospora herpotrichoides* (Syn *Cercospora herpotrichoides*.)

Aggravating factors: Worsened by nematodes feeding on the roots, drought, and winter or chemical injury.

Control:

1. Sow thoroughly cleaned, certified seed.
2. Plant resistant or tolerant cultivars.
3. Maintain balanced soil fertility.
4. Rotating cereal crops with non-grass species.

(RPD no. 113)

Common Name: Leaf Rust

Aggravating factors: High humidity, heavy rains and prolonged dews. Worse in dense stands which have had high rates of nitrogen applied.

How disease is spread: Wind and rain.

Loss range: Losses can exceed 20% of the crop.

Loss average: 5%

Control:

1. Use resistant varieties.
 2. Plant certified seed.
 3. Use foliar fungicides as needed.
 4. Use recommended seed treatment.
- (RPD no. 104)

Common Name: Loose Smut

Aggravating factors: Cool humid weather with frequent light showers.

How disease is spread: Spores of carried within healthy appearing seed and are spread by planting infected seed.

Loss range: From .3 to 7 percent (in one particularly bad year losses were 40%.)

Loss average: 2%

Control:

1. Plant certified seed of resistant varieties.
 2. Use an appropriate seed treatment.
- (RPD no. 112)

Common Name: Mycotoxins

Mycotoxins are produced under conditions of high relative humidity and temperatures by fungi commonly found colonizing grain.

These fungal metabolites cause a number of diseases (mycotoxicoses) in animals and man brought about by consuming food and feed that have been invaded by toxin-producing fungi.

Some of the effects of mycotoxins can be fatal, while others may lower an animals resistance to other disease agents.

Once the grain has the toxin, it is extremely durable and difficult to remove.

Mycotoxins found in grain fed to dairy animals may be excreted in the milk.

(RPD no. 119)

Common Name: Powdery Mildew

Aggravating factors: High humidity, heavy rains and prolonged dews. Dense stands which have had high rates of nitrogen applied.

How disease is spread: Wind and rain.

Loss range: Losses can exceed 20% of the crop.

Loss average: Less than 0.1%.

Control:

1. Use resistant varieties.
2. Plant certified seed.
3. Use foliar fungicides as needed.
4. Use recommended seed treatment.

(RPD no. 104)

Common Name: Pythium Root Rot, Damping Off, and Seedling Blight

Aggravating factors: Worsened by nematodes feeding on the roots, drought, and winter or chemical injury.

Control:

1. Sow thoroughly cleaned, certified seed.
2. Use effective seed treatment.
3. Maintain balanced soil fertility.
4. Rotating cereal crops with non-grass species.

(RPD no. 113)

Common Name: Rhizoctonia Root Rot, Seedling Blight, and Sharp Eyespot

Scientific Name: (*Rhizoctonia solani*, and *Rhizoctonia cerealis*.)

Aggravating factors: Worsened by nematodes feeding on the roots, drought, and winter or chemical injury.

Control:

1. Sow thoroughly cleaned, certified seed.
2. Use effective seed treatment.
3. Maintain balanced soil fertility.
4. Rotating cereal crops with non-grass species.

(RPD no. 113)

Common Name: Rots and Germ damage of stored wheat

Aggravating factors: Favored by high storage moisture and temperatures.

Comments: Each fungal organism has a specific range of temperatures under which growth is most favorable. As temperatures continue to rise in moist stored grain, the grain will be colonized by each organism successively. The production of mycotoxins is a special concern for stored grains, and the presence of molds and mycotoxins can lower or eliminate milling value.

Control:

1. Insure minimal damage to grain during the harvest process.
2. Remove as much debris and chaff prior to storage as possible.
3. Dry the grain to less than 13% moisture.
4. Store at a temperature below 50°.
5. Aerate high moisture grain to provide a 35-50° temperature.
6. Take probe samples weekly using the highest moisture content as indicator.
7. Remove rotting grain from storage facilities.

(RPD no. 119)

Common Name: Scab

Distribution: Losses tend to be widespread due to the impact of weather on disease progression.

Aggravating factors:

-Infections can be serious when a susceptible crop is grown after another host crop such as wheat, barley, or corn.

-When heads emerge during warm, moist weather.

How disease is spread:

-Air currents and rainsplash carry spores from residue and soil to heads.

Comments:

-Fusarium produces mycotoxins.

Loss average: 5 % annually.

Control:

1. Rotate with non-host crops.
2. Use certified seed.
3. Use tolerant varieties.
4. Delay the sowing until temperatures are below 60 dF.
5. Store grain at less than 14% moisture.

(RPD : no. 103)

Common Name: Septoria Glume Blotch and Leaf Blight

Aggravating factors:

- High humidity, heavy rains and prolonged dews.
- Worse in dense stands which have had high rates of nitrogen applied.

How disease is spread:

-Wind and rain.

Loss range: Losses can exceed 20% of the crop.

Loss average: 13%.

Control:

1. Use resistant varieties.
2. Plant certified seed.
3. Use recommended seed treatment.

(RPD no. 104)

Common Name: Soilborne Mosaic Virus and Yellow Mosaic Virus (Spindle Streak Mosaic)

Scientific Name: (*SBMV*)

Aggravating factors:

-Varies from year to year depending on crop management, environmental conditions, and variety.

How disease is spread:

-Caused by a soil borne virus infecting the roots.

Loss range:

-From little loss to total crop failure.

Loss average: 1 % annually.

Control:

1. Plant resistant or tolerant cultivars.
2. Select fields with low incidence of the disease.
3. Insure high soil fertility.

(RPD: no 102)

Common Name: Stem Rust

Aggravating factors:

-The severity depends primarily upon the weather and the amount of inoculum blown into the state by southern winds.

How disease is spread:

-Wind and rain.

Loss range: Can be as high as 12%

Loss average: 1%

Control:

1. Plant resistant varieties.
1. Eradication of barberry bushes near fields
2. Use foliar fungicides if needed.

(RPD no 108)

Common Name: Stinking Smut or Common Bunt

Aggravating factors:

-Determined by soil temperature and moisture during wheat germination.

Comments:

-These smuts cause a stinking odor to the grain reducing milling value.

Loss range: As high as 50% in individual fields.

Loss average: 3% annually.

Control:

1. Plant certified seed.

2. Use effective seed treatment
3. Plant wheat after the fly-free date.

(RPD no. 121)

Common Name: Take-All Root and Crown Rot

Scientific Name: (*Gaeumannomyces graminis* (Syn. *Ophiobolus graminis*))

Aggravating factors:

-Worsened by nematodes feeding on the roots, drought, and winter or chemical injury.

Loss Average: 3% annually

Control:

1. Sow thoroughly cleaned, certified seed.
2. Plant resistant or tolerant cultivars.
3. Use effective seed treatment.
4. Rotating cereal crops with non-grass species.
5. Maintain balanced soil fertility.

(RPD no. 113)

Common Name: Tan Spot

Aggravating factors:

-High humidity, heavy rains and prolonged dews.

-Worse in dense stands which have had high rates of nitrogen applied.

How disease is spread:

-Wind and rain.

Loss range: Losses can exceed 20% of the crop.

Control:

1. Use resistant varieties.
2. Plant certified seed.
3. Use recommended foliar fungicides.

(RPD no. 104)

Common Name: Wheat Streak Mosaic Virus

Scientific Name: (*WSMV*)

Aggravating factors:

- Double cropping.
- Presence of volunteer wheat in adjacent fields.

How disease is spread:

- The virus is vectored by mites, particularly the **wheat curl mite** (*Aceria (Eriophyes) tulipae*).

Loss range: 0-30%

Loss average: 2% annually

Comments:

- Losses tend to be worse in the southwestern portion of the state.

Control:

1. Destroy all volunteer cereals and plow under stubble in adjacent fields.

2. Sow winter wheat as late as possible.

3. Plant tolerant varieties.

(RPD no. 120)

Fungicide Rates, Units, PHI, and Primary Targets

Trade Name	Common Name	Rate		Unit	REI	PHI	Primary Target
		low	high				
Bayleton	Triadimefon					N/A	Septoria leaf and glume blotch, helminthosporium leaf blight and pyrenophora tan spot / Leaf and stem rust / powdery mildew
Baytan	Triadimenol					N/A	Seed rots, seedling blights, loose smut, and bunt
Benlate	Benomyl	0	48	oz	24	N/A	Septoria leaf and glume blotch, helminthosporium leaf blight and pyrenophora tan spot
Dithan M-45 Manzate 200, Penncozeb	Mancozeb				24	N/A	Septoria leaf and glume blotch, helminthosporium leaf blight and pyrenophora tan spot
Dividend	Difenaconazole	1/2	1	(CWT) fl oz		N/A	Seed rots, seedling blights, loose smut, and bunt
Quadris						N/A	Septoria leaf and glume blotch, helminthosporium leaf blight and pyrenophora tan spot/ Leaf and stem rust

Raxil+thiram	Tebuconazole+Thiram					N/A	Seed rots, seedling blights, loose smut, and bunt
Tilt	Propicanazole	0	4	fl oz	24	40	Septoria leaf and glume blotch, helminthosporium leaf blight and pyrenophora tan spot/ Leaf and stem rust
TBZ	Thibendazole					N/A	Seed rots, seedling blights, loose smut, and bunt
various	Captan				4	N/A	Seed rots, seedling blights, loose smut, and bunt
various	PCNB					N/A	Seed rots, seedling blights, loose smut, and bunt
various	Thiram					N/A	Seed rots, seedling blights, loose smut, and bunt
Vitavax	Carboxin				48	N/A	Seed rots, seedling blights, loose smut, and bunt

In 1998, fungicide use, except as a seed treatment, was insufficient to report. (Less than 1 percent of acres treated).

Weeds

There are a number of weeds that can cause significant yield reductions in wheat within Illinois. The average losses in winter wheat to all weeds is approximately 8 percent per year. Weed competition, and therefore crop losses, are greater in years which favor the growth of weeds in the fall (winter annual weeds) and early spring. Because some fields are abandoned and replanted to row crops if sufficiently weedy, not all losses can be figured into a 'yield reduction' figure. Wild garlic, wild onion, and the seeds from various other weeds, reduce the milling quality and wheat market value. In addition, the presence

of weeds at harvest increases the difficulty with which the crop is harvested, increases kernel moisture, and harbors insects and diseases that further weaken the crop.

Avg. Crop Loss and % Crop Area Infested by Weeds

Common Name	Scientific Name	Avg. Acres Infested*	Avg. % Crop Loss*
Annual Mustards	<i>Brassica spp.</i>		
Canada Thistle	<i>Cirsium arvense</i>	643,106	4.7%
Common Chickweed	<i>Stellaria media</i>	182,670	3.7%
Common Lambsquarters	<i>Chenopodium album</i>	731,837	3.1%
Common Ragweed	<i>Ambrosia artemisiifolia</i>		
Dandelion	<i>Taraxacum officinale</i>		
Field Pennycress	<i>Thlapsi arvense</i>	1,339,791	1.8%
Giant Ragweed	<i>Ambrosia trifida</i>		
Henbit	<i>Lamium amplexicaule</i>	176,562	4.2%
Horseweed (marestail)	<i>Conyza canadensis</i>	278,409	0.6%
Pennsylvania Smartweed	<i>Polygonum pennsylvanicum</i>		
Pigweeds	<i>Amaranthus spp.</i>	1,055,142	2.4%
Prickly Lettuce	<i>Lactuca serriola</i>	278,409	1.3%
Shepherd's Purse	<i>Capsella bursa-pastoris</i>	749,829	4.7%
Wild Buckwheat	<i>Polygonum convolvulus</i>	1,764,034	1.9%
Wild Garlic	<i>Allium vineale</i>	172,897	12.8%

*Based on U.S. Averages

Annual Mustards Includes a number of plants from the Cruciferae family such as **yellow rocket** (*Barbarea vulgaris*) , **Indian mustard** (*Brassica juncea*) , **Black mustard** (*Brassica nigra*) , **wild mustard** (*Brassica kaber*) , and **tansy mustard** (*Descurainia pinnata*) . Winter annuals or biennials. These plants are typically from 1 to 3 feet in height. Populations of these weeds usually compete with the crop during grain filling and may result in lower grain weight. Populations of these weeds are usually scattered but can be dense where seed reservoir is high.

Canada thistle Perennial. From 18 to 36 inches tall. Usually found growing in dense localized stands. Competes for light and moisture and can significantly reduce yields of cereal crops. Where stands are dense, mowing or cutting off the plants near the soil surface a number of times during the season can improve control.

Common Chickweed Winter annual. Often very robust and dense in growth and becoming a serious competitor for light, water, and nutrients.

Common Lambsquarters Annual. Occurs throughout the state in moderate to dense populations. From one to five feet tall. High populations of this weed in cereal crops can compete for light and moisture during grain fill and reduce yield and test weights.

Common Ragweed Annual Occurs throughout the state in low to moderate populations. From one to five feet tall. Competitive with cereal crops and can result in lower yields and grain weights wherever patches of this weed occur.

Dandelion Perennial Low growing plant typically found in low to moderate populations. Can compete for soil moisture and result in poor stands.

Field Pennycress Winter annual. Common to Illinois fields in scattered populations. From 4 to 20 inches tall. Dairy animals which consume this weed will have a bitter, garlicky flavor and odor to their milk.

Giant Ragweed Annual. From 3 to 9 feet in height. Found throughout the state in moderate to dense populations. Most aggressive in deep, river bottom soils. Extremely competitive with small grains.

Henbit Annual. Appears in early spring. Low growing but aggressive plant often crowding out seedling stands of cereals.

Horseweed (Marestail) Annual. Appears in early spring in Illinois. Grows from 2 to 4 feet tall. Typically plants are scattered. Populations of horseweed can compete for soil moisture and light.

Pennsylvania Smartweed Annual From 1 to 3 feet in height. Found throughout the state in low to moderate populations but usually more serious in damp soils.

Pigweeds Annuals. Occurs throughout the state in moderate to dense populations. From one to five feet tall. Very competitive with cereal crops and can compete for light and moisture during grain filling and result in lower yields and grain weights.

Prickly Lettuce Biennial or winter annual. Grows from 2 to 4 feet tall. Although usually scattered, dense populations of this weed can compete with the crop for moisture and light.

Shepherd's Purse Winter annual. Common throughout Illinois fields in scattered populations. 12 to 18 inches tall.

Wild Buckwheat Annual. Grows by vining about the crop. Seeds of this plant are difficult to separate from cereals when present at harvest.

Wild Garlic Wild garlic is a cool season perennial that reproduces mainly from aerial bulblets and some underground bulblets. Sprouting from bulblets occurs in the spring and fall. Plants mature during late May and early June and go dormant in early July. Infestations of wild garlic in grain may produce an off flavor in milk produced from animals feeding on that grain. As a result, grain contaminated with garlic may not be marketable.

Herbicides

The use of herbicides on wheat in Illinois has grown steadily in the last 10 years. The principal product used, which is known by the tradename of Harmony Extra, is a combination of Thifensulfuron plus Tribenuron. This product has a broad spectrum of activity and, of the weeds mentioned above, is ineffective only on giant ragweed, dandelion and garlic. Other products are used regularly but in much small amounts and for a specific targeted weed. While the loss of any one product or active ingredient would not significantly change wheat production in the state, the loss of all herbicides would result in reduced yields and major increases in the costs of wheat production.

1998 Herbicide Applications

Active Ingredient	Acres Treated (%)	Amount Applied Lb/Acre	Ave Rate Lbs/acre	Total Lbs Applied
Thifensulfuron + Tribenuron-methyl	47	0.02	0.02	10,000
		.008	.008	5,000

Herbicide Rates, REI, PHI, and Primary Targets

Trade Name	Common name	Rate	Unit	REI	PHI	Primary Target
Ally 60DF	metsulfuron	0.1-0.3	oz	N/A	4	Broadleaves
Amine (or Ester)	2,4-D	2.0-4.0	pts	N/A	48	Broadleaf

Banvel (4lb a.e.)	dicamba	0.5-4.0	pts	37	24	Broadleaves
Crossbow	triclopyr + 2,4-D	1.0-6.0	qts	N/A	N/A	Broadleaves
Harmony Extra 75DF	thifensulfuron + tribenuron-methyl	0.3-0.4	oz	N/A	12	Broadleaves
MCPA	MCPA amine	1/4-1.5	pts	N/A	48	Broadleaves
Peak 57WG	prosulfuron	.38-0.5	oz	N/A	12	Broadleaves
Roundup Ultra	glyphosate			7	4	Broadleaves (spot treatment)
Stinger (3lb a.e.)	clopyralid	1/4-1/3	pts	N/A	12	Broadleaves

Contacts

David Pike	Kevin Steffey	Mohammed Babadoost	Wayne Pedersen
S-310 Turner Hall	S-322 Turner Hall	N-533A Turner Hall	68 NSRC
University of Illinois	University of Illinois	University of Illinois	Univ Of Illinois
1102 S. Goodwin	1102 S. Goodwin	1102 S. Goodwin	
Urbana, IL. 61801	Urbana, IL. 61801	Urbana, IL. 61801	Urbana, IL. 61801
(217) 333-4424	(217) 333-4424	(217) 333-4424	(217) 333 3847

References

1. Illinois Department of Agriculture Overview of Illinois Agriculture 1997
2. United States Department of Agriculture Crop Production 1997 Summary National Agricultural Statistics Service Pr 2-1(98), February 1998 .
3. 1997 Illinois Agricultural Pest Management Handbook, Chapter 2: Alternatives in Insect Pest Management: Field and Forage Crops
4. Illinois Pest Profiles, Illinois Natural History Survey, University of Illinois Cooperative

Extension Service. 1992

5. United States Department of Agriculture Agricultural Chemical Usage, 1997 Field Crops Summary
6. United States Department of Agriculture Crop Values 1997 Summary. National Agricultural Statistics Service. Pr 2-1(98) February 1998.
7. [UC Davis Pest Management Guidelines](#)

Database and web development by the [NSF Center for Integrated Pest Management](#) located at North Carolina State University. All materials may be used freely with credit to the USDA.