Insects of Indiana for 1947

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Abnormal weather prevailed during 1947, as shown by the accompanying table of weather conditions, which was favorable for some insects, but on the whole unfavorable to some of our more major pests. April, May, and June were abnormally wet, while the remainder of the season was nearly normal. May, June, and July were abnormally cool, with above normal temperatures prevailing thereafter. The early wet and cool weather interferred with crop planting and this had a definite bearing on insect infestations.

Field Crop Insects

Grasshoppers (*Melanoplus differentialis* Thos. and *M. femur rubrum* DeG.) were more abundant the past season than for many years and there is evidence that they may be even more abundant in 1948. They occurred throughout the state. Infestations developed in clover and alfalfa fields and in weedy areas. Because of the high temperatures during August, the weedy areas became unattractive to the developing hoppers, and this, with the cutting of alfalfa and clover, drove immature hoppers to greener vegetation, including corn, soybeans, vegetables and flower gardens, and orchards and nurseries. Poison bran bait, the usual recommendation, was ineffective because with the hot weather in August the grasshoppers stayed high on the plants. Tests with several of the new organic chemicals, including chlordane and benzene hexachloride, proved highly efficient. Two other new chemicals "Toxaphene" and parathion were also very effective controls.

The European corn borer (*Pyrausta nubilalis* Hbn.) shows the lowest population in several years. The past four years have been definitely unfavorable to the corn borer. A major control operation has been the delaying of corn planting until after May 20. Weather conditions have been such that little corn could be planted before that date for several years. Thus, weather conditions have automatically taken care of the date of planting, unfavorable to the corn borer. At the same time it should be remembered that the corn borer can build up rapidly with favorable conditions and if conditions another year are favorable for early planting of corn and if growers do not heed delayed planting recommendations, the borer may immediately become a serious problem.

Chinch bugs (*Blissus leucopterus* Say) show a very low population and there is little likelihood they will cause any trouble in 1948.

The Hessian fly (*Phytophaga destructor* Say), one of the major field crop pests, is not abundant and is unlikely to be a pest problem during the coming season. Adoption of the practice of sowing wheat after the "fly-free" date is recommended as a regular practice and its

TABLE I. Comparative Monthly Weather Data for Indiana, 1947

Month		Temperature		Precipitation		Number of Days		
		State Mean °F	Departure from Normal °F	State Average Inches	Departure from Normal Inches	Clear	Partly Cloudy	Cloudy
1946	Normal	42.5		3.06		11	7	12
November	1946	46.8	+4.3	3.74	+0.68	11	6	13
	Normal	32.2		2.72		9	7	15
December	1946	36.8	+4.6	2.87	+0.15	10	7	14
1947	Normal	29.1		2.97		9	7	15
January	1947	33.8	+4.7	3.80	+0.83	6	8	17
	Normal	30.6		2.41		9	7	12
February	1947	24.2	—6.4	0.34	—2.07	10	8	10
	Normal	40.9		3.74		10	8	12
March	1947	33.8	—7.1	2.17	—1.57	10	10	11
	Normal	51.9		3.63		11	9	10
April	1947	52.0	+0.1	7.03	+3.40	8	8	14
	Normal	62.2		4.11		12	10	9
May	1947	59.0	—3.2	5.17	+1.06	10	12	9
	Normal	71.6		3.93		13	11	6
June	1947	69.0	—2.6	5.21	+1.28	11	10	9
	Normal	75.6		3.31		16	10	5
July	1947	71.2	—4.4	3.12	—0.19	14	12	5
	Normal	73.7		3.34		15	10	6
August	1947	79.8	+6.1	3.44	+0.10	17	10	4
	Normal	67.2		3.30		15	8	7
September	1947	67.6	+0.4	3.98	+0.68	17	8	5

adoption is doubtless responsible for the low Hessian fly population over a period of years.

Corn flea beetle (*Chaetocnema pulicaria* Melsh.) was destructively abundant in several central Indiana localities.

Sweet clover weevil (*Sitona cylindricollis* Fahr.) is a pest of recent occurrence in Indiana, having been found only a few years ago, first in northern Indiana. This insect has been working southward rather rapidly and already has caused notable losses. Apparently it is already in the southern third of the state from reports of typical injury received although actual specimens have not been seen. The weevil is especially destructive to new plantings and is becoming increasingly important because more and more farmers are recognizing sweet clover

as a valuable soil improvement crop. Plans are under way to make an intensive study of this pest next year.

Army worms (*Cirphus unipuncta* Haw.) were noticeably abundant in a few scattered localities throughout the state, especially in northern Indiana.

The Fall Army worm (*Laphygma frugiperda* S. & A.) was destructively abundant in several localities in both northern and southern Indiana.

The alfalfa or garden webworm (*Loxostege similalis* Gn.) was responsible for the destruction of many newly planted alfalfa fields. Most of the inquiries came from the southern half of the state and the damage was noticeable from the last of August into September.

The common stalk borer (*Papaipema nebris* Gn.) was a common pest in many localities during the period from the last half of May into July. Many crops were attacked, the more common ones including corn, pepper, tomato and miscellaneous vegetable and flower garden plants.

The spittle bug (*Philaenus lineatus* L.) was again very common over the northern two thirds of the state, attacking almost every kind of plant, as in 1946.

Corn rootworm adults (*Diabrotica longicornis* Say) were unusually abundant in the southwestern part of the state, especially Posey County, along the Wabash and Ohio rivers. They cut off the silks of corn, thus preventing fertilization of the grains.

Vegetable Insects

The potato leafhopper *Empoasca fabae* Harr. was common and destructive to potatoes and beans throughout the state.

Blister beetles (especially *Epicauta pennsylvanica* DeG. and *E. vittata* Fab.) were common throughout the state, attacking all kinds of garden crops.

Scavenger beetles (*Ips quadriguttatus* Fab.) have been common for the past four or five years, and especially in the burrows of the corn ear worm and the European corn borer. They are also common on such fruits as strawberries and melons where decay starts, especially when the fruits are in contact with the soil.

Orchard Insects

Codling moth (*Carpocapsa pomonella* L.) was not as serious as usual. Furthermore the insecticide DDT has proven to be an unusually effective control and was rather generally used by fruit growers, especially those in the southern half of the state.

Oriental fruit moth (*Laspeyresia molesta* Busck) infestations were spotty and injury was less than usual.

Apple maggot (*Rhagoletis pomonella* Walsh) was less abundant than for several years, only a few reports of noticeable infestations being reported.

The plum curculio (*Conotrachelus nenuphar* Herbst) shows a very definite increase and for the first time in many years it is a real threat to the fruit industry of the state.

Shade Tree and Shrub Insects

Cottony maple scale (*Pulvinaria vitis* L.) has been the subject of many inquiries from the northern third of the state. This scale has been on the increase for the past two or three years and it is believed that further increase may be anticipated for 1948.

Bagworms (*Thyridopteryx ephemeraeformis* Haw.) was unusually abundant and was destructive as far north as Kokomo and Peru. The fact that this insect feeds on evergreens, especially arbor vitae, but also pines and junipers, makes it an especially serious pest. The bagworm is easily controlled with arsenate of lead if treatment is applied before the larvae are half grown. Unfortunately, in spite of publicity, the infestation is not usually recognized until it has partly or completely defoliated the evergreens.

The spring canker worm (*Paleacrita vernata* Peck) is on the decline, although a few reports of defoliation were received as far south as Scottsburg.

The bronze birch borer (*Agrilus anxius* Gory) has been more destructive than usual. Observations show that specimen trees are more often attacked but that where such trees are kept adequately watered and fertilized, the bronze birch borer does not become destructive.

Willow aphids (*Melanoxantherium smithiae* Monl.) were reported from many localities. Reports did not refer to damage to willow but where infested trees were near buildings or outdoor furniture, the blood red stain produced when crushed were very objectionable.

The locust leaf miner (*Chalepus dorsalis* Thumb) was noticeably abundant through central and southern Indiana.

The twig girdler (*Onicideras cingulata* Say) was frequently reported attacking persimmon, hickory and oak, especially in the south-western part of the state.

Household Insects

Cockroaches are still the major household pests and many inquiries are received each year. Although the German roach (*Blattella germanica*) is the species most often reported, the American roach (*Periplaneta americana*) and the Oriental roach (*Blatta orientalis*) are also very common.

Powder post beetles (*Lyctus* spp.) are an increasingly important problem and an unusually large number of inquiries are being received. Perhaps this may be attributed, in part, to the large amount of poorly seasoned lumber being used in building construction.

Psocids or book lice (Corrodentia) are the subject of many inquiries and here again this increase may be attributed to the use of unseasoned lumber.

Ants of various species continue to be major pests, in the lawn, as annoying pests in the home, and destructive to construction timbers. Many species of ants swarm in the fall of the year which leads the public to suspect termites. It should be noted that termites very rarely swarm after June in Indiana.

The cluster fly (*Pollenia rudis*) has been an annoying problem for housewives in the fall and spring. This fly is a parasite of earth-worms and passes the winter in the adult stage. It gains entrance to homes and there seeks cool places, such as the attic, unheated basement areas and in window casings. In the spring it becomes active and as in the fall, may be quite annoying, although it does no damage.

It is noteworthy that house flies (*Musca domestica*) have been rather scarce the past two years. I think this can be attributed more to the weather than to the use of DDT.

Termites (*Reticulitermes flavipes*) continue as a major building pest in Indiana.

Miscellaneous Pests

Annoying mites. During the course of a year frequent reports are received of mites invading buildings. In some cases they are plant mites occurring on vines; in other cases the tropical rat mite (*Liponyssus bacoti* Hirst) is the annoying species; but quite frequently the common poultry mite (*Dermanyssus gallinae* DeG.), which infests birds, especially the mourning dove, which nests on window ledges or in vines, eaves, etc.

Mites (*Tarsonemus confusus* Ewing, E. W. Baker det.) were the cause of trouble in a major tomato canning plant near Indianapolis. During the latter half of September, weather conditions caused the fruit stems of tomatoes to brown and show decay or a moldy condition. This was responsible, apparently, for a notable abundance of the above mite, especially just below the calyx lobes and this resulted in mite fragments contaminating the tomato pulp. In other words the presence of the mites had no harmful effect on the plants or fruits, but did present a serious hazard by contaminating the product with mite fragments, which might be considered adulteration by the U. S. Food and Drug Administration, thus subjecting the product to confiscation.

Bran beetles (cadelle, *Tenebroides mauritanicus* L.; confused flour beetle, *Tribolium confusum* Duval; and saw-toothed grain beetle, *Orzaephilus surinamensis* L.) have been serious pests in stored grains during the past year.