

INSECT HAZARD TO ILLINOIS FIELD CROPS

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In insuring a residence or other building against fire, the company selling the insurance will charge a certain rate based on data which they have compiled on the occurrence of fires in other buildings similarly located, and showing the approximate fire hazard of the property in question. This hazard varies with the location of the property, the fire fighting apparatus of the town in which it is located, the construction of the building, the water supply, and other factors. These tables compiled by the insurance companies enable them to put a valuation on all of these factors, and to tell with a fair degree of accuracy what are the chances of the building burning during a given period of time.

The paper here presented is an attempt to show in somewhat the same way the insect hazard to which the field crops most generally grown in Illinois are subjected during the growing season. The data available do not always permit stating this hazard as accurately as desired, but are sufficient to give an approximation of the hazard. The following tables are compiled from data gathered by the State Entomologist's office covering a period of over sixty years, and by the Entomological Section of the Natural History Survey, which during the last five years has conducted the work formerly carried on by the State Entomologist; also from publications of the Experiment Stations in adjoining states where agricultural conditions are much the same as in Illinois. The insects listed are those which are sufficiently abundant from year to year to cause commercial damage to Illinois field crops. In listing the insect hazard, the state was divided into three sections, Northern, Central, and Southern, the division being based in part on the type of agriculture, and in part on the occurrence or abundance of the different species of insects. With some crops, the insect hazard does not change greatly from north to south, or on different types of soil. Other insects, however, vary greatly in their abundance and the amount of injury which they cause in the different sections of the state. Some are of no importance, or are scarcely ever

seen in Northern Illinois, while they are very abundant in the south, and vice versa.

The attempt is made to estimate the hazard from a given insect for an average year under average farm conditions. The hazard is based not on what would occur if no attempt was made to combat insects, nor on what does occur where the best known methods for insect control are put in practice. The stage of the plant when the insect attacks occurs, the point of attack, and duration of feeding have been taken into account. In some cases the damage resulting from diseases and fungi which gain access to the plant where the insect has fed is greater than the direct injury by the insect. Such damage is ascribed to the insect as being primarily responsible.

While no claims are made for the accuracy of the following tables, they are the best that the writer could compile from the data available. It is hoped that any one interested in this subject will help in making these tables more accurate by criticism of any statements which do not seem correct. Such tables are of importance to the farmer or land owner, not only because they attempt to show the insect hazard to a given crop for a normal year, but because if the type of land is such that any one particular species is known to be abundant, it will help him to determine the amount of risk he is running from that species. If in a certain year a certain insect is known to be unusually abundant, he may determine before hand the chance of securing a good crop under conditions of heavy infestation by this insect.

The importance of an insect may change greatly from one year to another, or the insect hazard may increase with the introduction of some new pest. Similar tables for cotton compiled thirty years ago would not have mentioned the Cotton Boll Weevil, where at present the hazard from this insect alone amounts to approximately fifty percent. It is quite likely that in ten or fifteen years, a similar condition may exist in regard to the Illinois corn crop in connection with the chance of injury by the European Corn Borer.

INSECT HAZARD TO CORN.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Northern Corn Root Worm.....	1.	1.	.5
White Grubs	1.5	.5	.2
Wire Worms .....	.1	.1	.1
Chinch-bug .....	.05	1.	3.
Corn Ear Worm.....	1.5	2.	2.5
Southern Corn Root Worm.....	.2	.5	1.
Corn Root Aphis.....	.5	.5	.5
Army Worm .....	.01	.01	.01
Grasshoppers .....	.02	.02	.02
Cutworms	1.	1.	1.
Corn Seed Maggot.....	.2	.1	.05
Common Stalk Borer.....	.02	.01	.02
Sod Web Worms.....	.1	.05	.05
Bill Bugs .....	.05	.05	.1
Morning Glory Flea Beetles.....	.05	.05	.1
Corn Seed Beetle.....	.01	.....	.....
Clover Root Worm.....	.....	.05	.01
Pale Striped Flea Beetle.....	.5	.2	.1
Other Insects	1.	1.	1.5
Total	7.61	8.14	10.86

WHEAT

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Hessian Fly	4.5	5.	5.
Chinch-bugs .....	.....	.3	1.
Wheat Joint Worm.....	1.	1.	1.
Wheat Stem Maggot.....	.5	.5	.5
Wire Worms .....	.05	.02	.02
Grasshoppers .....	.1	.1	.1
Army Worms .....	.05	.05	.05
Wheat Head Midge.....	.05	.....	.....
Bill Bugs .....	.05	.05	.05
Wheat Head Army Worm.....	.002	.....	.....
English Grain Louse.....	.01	.1	.1
Green Bug .....	.05	.05	.05
White Grub .....	.5	.1	.1
Angoumois Grain Moth.....	...	.02	.02
Southern Corn Root Worm.....	.05	.1	.1
Other Insects	1.5	1.5	1.5
Total	8.91	8.89	9.59

RYE

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Chinch-bug .....	.....	.2	.3
Hessian Fly .....	.05	.05	.05
Army Worm	1.	1.	1.
Grasshoppers .....	.2	.2	.2
Wheat Stem Maggot.....	.05	.05	.05
English Grain Louse.....	.01	.1	.1
Green Bug .....	.2	.5	.5
Other insects	2.	2.5	2.5
Total	3.51	4.60	4.70

OATS.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Chinch-bug .....	.001	.3	.5
Army Worm	1.	1.	1.
Green Bug .....	.5	1.	1.
Grasshoppers .....	.05	.05	.05
Common Stalk Borer.....	.001	.001	.001
English Grain Louse	1.	1.	1.
Oat Thrips .....	.2	.2	.2
Other Insects	1.5	2.	2.
Total	4.261	5.35	5.551

BARLEY.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Chinch-bug .....	.05	1.	.....
Army Worm .....	.5	.5	.....
Wheat Stem Maggot.....	.1	.1	.....
Hessian Fly .....	.1	.1	.....
English Grain Louse.....	.5	.5	.....
Green Bug .....	.2	.5	.....
Other Insects	2.	2.5	.....
Total	3.46	4.35	.....

SUDAN GRASS.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Chinch-bug .....	.01	1.	2.5
Grasshoppers	1.	1.0	1.0
Army Worm .....	.1	.1	.1
Aphis .....	.2	.5	.5
Other Insects	1.5	2.	2.5
Total	2.81	4.6	6.6

TIMOTHY.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Grasshoppers	1.5	1.5	2.
White Grubs	2.	2.	1.5
Cutworms	1.	1.	1.
Bill Bugs .....	.2	.2	.2
Wire Worms .....	.1	.1	.1
Leafhoppers	1.	1.	1.
Army Worms .....	.5	.5	.5
Capsids .....	.1	.1	.1
Sod Webworms .....	.05	.02	.02
Chinch-bugs .....	.....	.1	.2
Wheat Head Army Worm.....	.02	.01	.....
Other Insects	1.	1.	1.
Total	7.47	7.53	7.62

BLUE GRASS

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
White Grubs	3.5	3.	2.5
Cut Worms	1.	1.	1.
Grasshoppers	2.	2.	2.5
Capsids .....	.1	.1	.1
Wireworms .....	.5	.5	.5
Sod Webworms	1.	1.	1.5
Jassids	1.5	1.5	2.
Army Worms .....	.5	.5	.5
Other Insects	1.5	1.5	2.
Total	11.60	11.10	12.60

ALFALFA.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Sitones .....	.5	.5	.5
Pea Aphis	1.	1.	1.
Garden Webworms	1.5	1.5	1.5
Grasshoppers	1.5	1.5	2.
Clover Leaf Weevil.....	.01	.01	.01
Leafhoppers .....	.5	.5	.5
Cutworms	1.	1.5	2.
Clover Root Borer.....	.01	.01	.01
Green Clover Worms.....	.01	.01	.01
Alfalfa Caterpillar .....	.02	.02	.05
Blister Beetles .....	.02	.02	.02
Other Insects	1.5	1.5	2.
Total	7.57	8.07	9.60

RED CLOVER PLANT.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Clover Seed Caterpillar.....	.01	.01	.01
Clover Bud Weevil.....	5.	5.5	5.5
Clover Leaf Weevil.....	.5	.5	.5
Grasshopper	2.	2.	2.
Sitones .....	.2	.2	.2
Pea Aphis	1.5	1.5	1.5
Variegated Cutworm .....	.5	.5	1.
Green Clover Worm.....	.01	.01	.....
Clover Leaf Tyer.....	.01	.01	.01
Army Worm, Cutworms.....	1.5	1.5	1.5
Clover Root Borer.....	.02	.02	.02
Clover Stem Borer.....	.001	.005	.005
Leafhopper .....	.1	.1	.1
Other Insects	1.5	1.5	1.5
Total	12.85	13.36	13.84

RED CLOVER SEED.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Clover Bud Weevil.....	20.	20.	25.
Clover Seed Chalcid.....	3.	3.	3.5
Clover Seed Caterpillar.....	2.	2.	2.
Clover Seed Midge.....	2.	1.5	1.5
Other Insects .....	.5	.5	.5
Total	27.5	27.0	32.5

SOYBEANS.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Sitones .....	.002	.002	.002
Grasshoppers	2.	2.	2.5
Green Clover Worm.....	.01	.01	.02
Clover Colaspis .....	.02	.02	.01
Other Insects	2.5	2.5	2.
Total	4.532	4.532	4.53

SWEET CLOVER.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Grasshoppers	2.	2.5	3.
Clover Stem Borer.....	.1	.1	.1
Pea Aphis	1.	1.	1.
Other Insects	2.5	3.	3.5
Total	5.6	6.6	7.6

POTATO.

Insect.	Percent of Damage.		
	Northern Ill.	Central Ill.	Southern Ill.
Colorado Potato Beetle.....	3.	3.	3.
Potato Leafhopper	10.	10.	10.
Potato Flea Beetle.....	.5	.5	1.
White Grub	1.	.5	.5
Blister Beetles .....	.02	.02	.02
Potato Aphis .....	.001	.001	.01
Wireworms .....	.02	.02	.02
Other Insects .....	.5	1.	1.
Total	15.04	15.04	14.55

