AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

JAN 10 1977

ENTOMOLOGY DEPT.

entomology

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T.N.H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

COTTON

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Estimated losses plus cost of controlling boll weevils continued to decline during 1976, even though acreage increased 13,000 acres from 1975. Estimated loss plus cost of control on 68,000 acres of cotton harvested in 1976 was $1.3 million compared to $3 million on 55,000 acres during 1975. (Bacheler, Robertson, Ext.)

BOLLWORM (Heliothis zea and H. virescens) - NORTH CAROLINA - Estimated losses plus cost of controlling bollworms on cotton totaled $4.6 million on 68,000 acres in 1976 compared to $1.2 million on 55,000 during 1975. (Bacheler, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

FEB 28 1977

ENTOMOLOGY DEPT.

entomology

February 28, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T.N.H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

PEANUTS

Estimated losses plus cost of controlling insects in peanuts was greater in 1976 than in 1975. Greatest increases occurred in the twospotted spider mite and the defoliating caterpillars (primarily corn earworm) estimates. A comparison of 1975 and 1976 is given below:

INSECT	1975 LOSS + COST OF CONTROL	1976 LOSS + COST OF CONTROL
Thrips and leafhoppers	862,500	892,500
Southern corn rootworm	860,000	612,500
Spider mite	900,000	1,125,000
Corn earworm and other defoliating caterpillars	87,500	187,500

*Approximately 175,000 acres each year.

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

RECEIVED

MAR 21 1977

ENTOMOLOGY DEPT.

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March 21, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

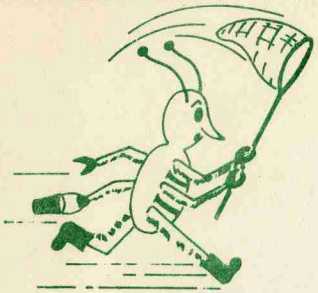
Raleigh, North Carolina

ORNAMENTALS

BALSAM WOOLLY APHID (Adelges piceae) - NORTH CAROLINA - Severe damage observed in Jackson County Christmas tree plantations. Twig dieback and stunted needles reported from Fraser fir plantings in all areas of the county. However, heaviest infestations occur near Blue Ridge Parkway east of Sylva. Limited availability of labeled insecticides of much concern to growers. Damage to naturally growing Fraser fir has been occurring for many years in this area. (McGraw, Ext.; Perry, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

AGRICULTURAL EXTENSION SERVICE



INSECT SURVEY NOTES

entomology

April 1, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist JNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - NORTH CAROLINA - Reports and samples from Piedmont counties reveal low weevil populations. Spot checks in 3 Wake County fields revealed an average of 10 larvae per 100 sweeps, or 1 larvae per 100 tips. Compared to 1976, these same fields averaged 1 larvae per 10 tips. Usually 100% of the fields in the Piedmont require an annual treatment. Many fields will not require an insecticide this year.

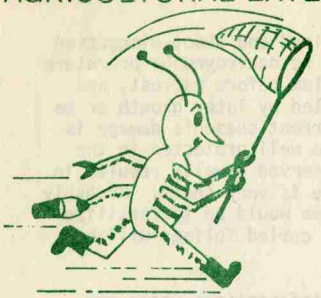
FOREST AND SHADE

EASTERN TENT CATERPILLAR (Malacosoma americanum) - NORTH CAROLINA - First observation of the year was made on wild cherry, March 7 in Wake County. Webs ranged in size from 2-6 square inches.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

April 4, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

ORNAMENTALS (CHRISTMAS TREES)

SPRUCE SPIDER MITE (Oligonychus ununguis)- NORTH CAROLINA - On March 15th and 16th, 13 Fraser fir plantations in Ashe County were surveyed for overwintering eggs. Evidence of adults and very few eggs were found, even in plantations that were known to have high populations last fall. This is probably due to the hard winter and the heavy rains in early March. Spring or early summer control operations should be contemplated only after a close inspection of the trees to affirm the continued presence of spider mites at high levels. The poor over-wintering egg survival does not necessarily mean there will be no mite problem this year. Mites reproduce rapidly and could build up to high levels by late summer or early fall. Hot,dry weather conditions are particularly conducive for this. (Fred Hain, Research Ent.)

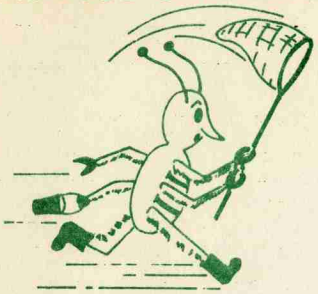
BALSAM TWIG APHID (Mindarus abietinus) - NORTH CAROLINA - On March 31st, one Fraser fir plantation in Ashe County and one in Watauga County were sampled for overwintering eggs. In both plantations, egg hatch had occurred and was almost complete. From now until bud break is the proper time for controls. Spraying should only be done under the following 3 conditions: 1) there is substantial permanent damage from last year, 2) this is the last growing season before harvest, and 3) current-season shoot elongation and aphid damage (curled needles) has not occurred. There is little point in spraying before the final growing season because: 1) much of the damage straightens out during the growing

season (especially if the trees have been well fertilized and shoot elongation has not been restricted), 2) beneficial organisms may be destroyed by premature spraying and natural controls may eliminate your problem before harvest, and 3) most of the early, permanent damage will be concealed by later growth or be removed by shearing. Attempting control after the current season's damage is observed could be of little value since the aphids are well protected in the curled foliage. Sprays applied after leaf curl is observed usually results in treating the nonsusceptible eggs since the adult stage is very short. Probably the best action for preharvest plantations at this time would be to fertilize so that shoot elongation and the straightening of the curled foliage will be enhanced.

Controls should be applied to plantations with known infestations which are in the final year of the harvest cycle. (Fred Hain, Research Ent.)

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

April 19, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

FORAGE

ALFALFA WEEVIL (Hypera postica) - NORTH CAROLINA - Sweeping and tip sampling indicate less damage for 1977 than occurred to date in 1976. Less than 10% of the tips suffering economic injury in 5 Piedmont fields surveyed April 7-14. Approximately 45% of the larvae observed in 1 Wake County field 8 April had reached third instar. For the 5 fields examined, 25% of the larvae had reached third instar. (Hunt, Ext.)

FRUITS

A SCOLYTID (Xyleborus sp.) - NORTH CAROLINA - A scolytid was collected by Thurman Weaver at Castle Hayne Research Station, Castle Hayne, N. C., on Tuesday, April 5, 1977. Damage appeared as a cavity and exuding sap to 15% of the muscadine grape vines in a 2-acre plot. Growers in the area are experiencing similar problems. (Sorensen, Ext.)

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

April 29, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist THH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SMALL GRAIN

ARMYWORM (Pseudaletia unipuncta) - NORTH CAROLINA - Armyworm larvae reaching damaging numbers in localized Coastal Plain wheat fields. Infestations to 5 (mixed instars) per square ft. of surface area observed this week in a Johnston and a Jones County field. (Hunt, Ext.)

VEGETABLES

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Flights are underway in eastern Irish potato growing counties. Counts from light traps have reached higher numbers than 1976 with catches of 100+ in Beaufort County area. First collection was April 12. Egg masses have been observed and spray should commence about April 28. (Potato Pest Alert, April 21, 1977)

NOTE

We are required by law to revise our names list. If you desire to continue receiving the Insect Survey Report and have not indicated so on our earlier request, please send us your name and address requesting survey reports for 1977. (This does not apply to County Extension Chairmen.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

Dr. Knight K

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

May 6, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T. N. H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

MAIZE BILLBUG (Sphenophorus maidis) - NORTH CAROLINA - Observation and collections in 10 infested Johnston County corn fields (75 acres) near Selma revealed 70% of the plants damaged in the 5-7 border rows. Damage to 30% was scattered over all the fields with approximately 5 acres planned for replanting. Distribution of this pest in damaging numbers continues westward annually. (Hunt, Ext.; Weaver, Dept. of Ent.)

SMALL FRUITS AND VEGETABLES

BLUEBERRY BUD MITE (Acalitus vaccinii) - NORTH CAROLINA - Spot checks in Bladen and Duplin counties revealed low bud mite infestations in 8 fields examined (200 acres). The ratio of potential berries to optimum berries in these fields averaged 1/1.9 compared to a ratio in 1976 of 1/2.8. The % damaged buds averaged less than 5% in fields observed. A cool period during peak pollination reduced berry set in some localities.

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Light trap collections have declined probably due to lower night temperatures and precipitation. However, egg masses remain abundant on dock and continue to hatch. Hatching will likely continue through May 13. (Pest Alert Potato 1977)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

MAN AND ANIMALS

ROCKY MOUNTAIN SPOTTED FEVER (Primary vector is American Dog Tick, Dermacentor variabilis) - NORTH CAROLINA - The number of confirmed cases of Rocky Mountain spotted fever continues to climb annually. In 1976, 192 cases and 9 fatalities were reported and represent an all-time high. Reports as of April 1, 1977, reveal 6 confirmations with 3 infections occurring in March. Higher numbers of infections are expected in April and May. Early diagnosis is extremely important in treatment. (Div. of Health Services, N. C. Dept. of Human Resources)

FEDERAL AND STATE PROGRAMS

IMPORTED FIRE ANT (Solenopsis invicta) - Severe winter killing of mounds observed in Robeson, Brunswick, Onslow, Craven and Pamlico counties. Percentage of inactive mounds ~85-90%. Most mounds less than 12 inches in diameter inactive. The cold snap following a warming trend in March seemed to kill many mounds. Unfortunately, enough active mounds remain to replenish normal populations by this fall or next spring--provided we don't have another severe winter this year. (Hillmann, Ext.)

LATE NOTES

CORN

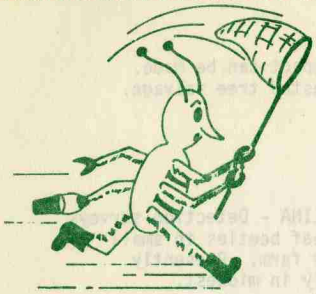
BLACK CUTWORM (Agrotis ipsilon) - NORTH CAROLINA - Heavy damage reported this week from central Piedmont. Reports ranged downward from 30% plants cut off in a 30-acre Stanley County field. Five % of the plants cut is a general threshold guideline. (Blackmore, Ext.)

VEGETABLES

SEEDCORN MAGGOT (Hylemya platura) - NORTH CAROLINA - Seed damage in commercial and home garden vegetable plantings severe in western Piedmont and Mountains. Reports of 30% stand reduction common in beans, corn, cucumbers, etc. Dead flies attached to weeds and standing debris indicate that majority of egg laying over for spring generation. (Sorensen, Hunt, Ext.)

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

May 13, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TN. H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

BILLBUGS (Sphenophorus maidis and S. callosus) - NORTH CAROLINA - Severe adult damage occurring over large acreages in central and southern Coastal Plain. Damaged plant estimates to 50% were received from 250 acres in Pender, 200 acres in Bladen and 100 acres in Johnston counties 9-12 May. Postemergence treatments for this insect are very poor in reducing damage. (Morris, Wynn, Hunt, Ext.)

ARMYWORM (Pseudaletia unipuncta) - NORTH CAROLINA - Damage was scattered over 80 acres of corn on 1 Montgomery County farm. Approximately 15 acres of this had 30% of the plants damaged. Larvae were 2nd and 3rd instar. Other reports have been received from Piedmont no-till corn indicating farmers should scout corn in this area of the state (Reece, Ext.)

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - NORTH CAROLINA - Surveys conducted by the N. C. Forest Service revealed surviving beetles in most previously infested areas. Generally, the population is low with greatest winter survival occurring in Moore and Chatham County areas. It will be

mid-June before an accurate appraisal of the winter's impact can be made. Therefore, the Forest Service recommends continuing infested tree salvage. (Forest Pest Newsletter, N. C. Forest Service)

STATE AND FEDERAL PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (Oulema melanopus) - NORTH CAROLINA - Detection surveys by A.P.H.I.S. and N.C.D.A. inspectors revealed cereal leaf beetles in small grain on 3 Caswell County farms and 1 Northampton County farm. Presently known distribution is Virginia northward and particularly in midwest.

Determinations were made by local A.P.H.I.S. taxonomists and a state record will be announced pending confirmation from Hyattsville lab, A.P.H.I.S. headquarters. If you find any beetles in small grains which have black wings with forward portion of body an orange-red, please report to the survey entomologist. (Wescott, Johnson, A.P.H.I.S.; Hoffman, Roberts, N.C.D.A.)

BENEFICIAL

HONEY BEES (Apis mellifera) - NORTH CAROLINA - Severe winter kill has been reported by apiculturists over the Piedmont and Mountains. Dr. John Ambrose estimates generally a 20% colony loss for N. C. with a 50% loss in some areas. (Ambrose, Ext.)

SPECIAL FORESTRY AND SHADE TREE NOTE

A SCALE INSECT (prob. Lecanium corni) - NORTH CAROLINA - Both this spring and last, the Plant Disease and Insect Clinic and Extension Forest Resources have received a number of inquiries about scale insects on oak shade trees, particularly large willow and water oaks. The scale in question is probably the European fruit Lecanium scale and reports have been received from the coast to the mountains.

The scales are usually first noticed during April when large amounts of honeydew "rains" from infested trees. Also, large numbers of ants and bees may be present feeding on the honeydew.

It is not known to what extent these scales will damage trees. However, if scales become numerous, they can kill individual branches.

You should refer to page 105 in Eastern Forest Insects (USDA Forest Service, Miscellaneous Publication No. 1175) (the hardback yellow book) for more details about this Lecanium scale. Scale crawlers appear during May in eastern North Carolina.

In other areas, Lecanium scale populations have been reported to rapidly increase and decline. This natural decline has been credited to the action of predators and parasites. Extension Folder No. 166 entitled Scale Insects and Their Control discusses the chemical controls for scales. (McGraw, Ext. For.)

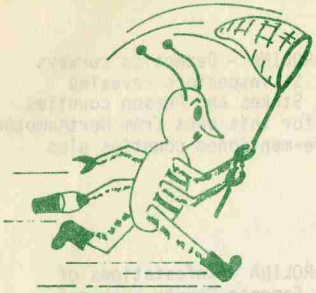
SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING WEEK.

	Week of May 5-11, 1977
Man and Animals	1
Southern Field Crops	--
Grain, Soybeans and Forages	9
Forestry, Ornamentals and Turf	28
Fruit	1
Vegetables	2
Wood Destroying Insects	--
Household and Industrial Insects	--
Miscellaneous & Accidental Household	2
Miscellaneous	9
	52

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

May 20, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T.N.H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

ARMYWORM (Pseudaletia unipuncta) - NORTH CAROLINA - Armyworms continue to damage slow-growing corn, particularly in Piedmont of N. C. Reports received this week from Lee, Chatham, and Montgomery counties. Approximately 150 acres were treated. Damage ranged from 15 to 50% of the plants with damaged whorls and blades. (Hunt, Ext.)

BILLBUG (Sphenophorus callosus, S. maidis) - NORTH CAROLINA - Damage reports continue from late-planted or small corn (10" or less) in Johnston, Bladen, Pender, and Jones counties. Infestations of 75% have been observed in fields of 25 acres. Value of a postemergence treatment is very limited. Rotation of large acreages or entire fields is best line of defense. (Hunt, Ext.)

SMALL GRAIN

ARMYWORM (Pseudaletia unipuncta) - NORTH CAROLINA - Armyworms observed cutting the heads from maturing wheat in Tidewater area of N. C. Total damage reported was approximately 2500 acres of wheat in Camden, Washington, Beaufort, Pasquotank and Pamlico counties. (Sawyer, Hunt, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

CEREAL LEAF BEETLE (Oulema melanopus) - NORTH CAROLINA - Detection surveys conducted this week by N.C.D.A. and U.S.D.A., A.P.H.I.S. inspectors revealed cereal leaf beetle infestations in Rockingham, Surry, Stokes and Person counties. May 13 Insect Survey Notes reported the state record for this pest from Northampton County. To date, detection has been made in the above-mentioned counties plus Caswell County. (Planer, APHIS).

TOBACCO

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Infestations of budworms above threshold level in 3 fields sampled in Sampson County averaged 20-25% plants infested. Infestation in northern Coastal Plain fields observed this week have averaged 1% damaged plants. (Reagan, Ext.)

VEGETABLES AND FRUITS

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Larvae are entering Irish potato stems in Tidewater area. An untreated research plot at Plymouth, Washington County, averaged 51 borers per 25 plants. Tyrrell, Currituck, Camden, and Pasquotank counties report damaged stems in commercially treated fields. Adult ECB light trap collections have decreased indicating first flight over. Egg masses expected to hatch through May 20. (Sorensen, Ext.)

BLUEBERRY MAGGOT (Rhagoletis mendax) - NORTH CAROLINA - Adults trapped in Pender County blueberry field. This is approximately 2 weeks earlier than average, and populations are expected to be higher than usual. (Best, Sorensen, Ext.)

THRIPS (Prob. Hercothrips sp.) - NORTH CAROLINA - Thirps injury to snap beans was reported from Sampson County. Damage was observed in several commercial plantings. One 20-acre field averaged 50 nymphs per leaf. Visual symptoms are yellow foliage, leaf drop and dead plants. These insects are very small and close observation is required to detect their presence. (Westerbeek, Sorensen, Ext.)

ANIMAL AND PLANT HEALTH INSPECTION SERVICE (APHIS)

CEREAL LEAF BEETLE (Oulema melanopus) - NORTH CAROLINA - See note under Small Grain.

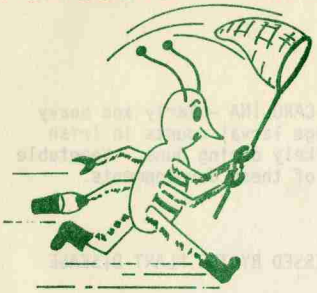
COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of May 5-11, 1977	Week of May 12-18, 1977
Man and Animals	1	5
Southern Field Crops	--	--
Grain, Soybeans and Forages	9	35
Forestry, Ornamentals and Turf	28	25
Fruit	1	7
Vegetables	2	--
Wood Destroying Insects	--	2
Household and Industrial Insects	--	2
Miscellaneous & Accidental Household	2	3
Miscellaneous	9	10
	52	89

Dr. Knight K

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

May 27, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Reports of 50% larval damaged plants received this week from Piedmont and Coastal Plain counties. Damage estimates received from approximately 800 acres of corn in Anson, Bladen and Halifax counties. Damage by this insect is deep in whorl and produces a wet, sticky, brown excrement. (Potter, Sweeney, Morris, Ext.)

BLACK CUTWORM (Agrotis ipsilon) - NORTH CAROLINA - Damage reports continue this week from mountain couties in corn seedlings (8 inches or less). Damage generally less than 1%; however, isolated fields reported with spots exceeding 15% of the plants cut. With recent rains, most corn will outgrow susceptibility to cutworm injury. (Ramseur, Miller, Hunt, Ext.)

TOBACCO

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - The percent of fields reaching threshold level continued to rise in southern and central Coastal Plain. Infestations observed this week in Duplin, Sampson and Columbus counties with 15 to 25% of the plants damaged. Damage remains light in most Piedmont fields. Scouting of tobacco fields should be initiated immediately in all Coastal Plain areas. (Hunt, Reagan, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

VEGETABLES AND FRUITS

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Early and heavy light trap collections in combination with above average larval counts in Irish potato fields indicate a heavy second generation is likely during June. Vegetable producers, especially pepper farmers, should be aware of these developments. (Sorensen, Ext.)

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of May 12-18, 1977	Week of May 19-25, 1977
Man and Animals	5	1
Southern Field Crops	--	2
Grain, Soybeans and Forages	35	26
Forestry, Ornamentals and Turf	25	20
Fruit	7	8
Vegetables	--	7
Wood Destroying Insects	2	3
Household and Industrial Insects	2	1
Miscellaneous & Accidental Household	3	7
Miscellaneous	10	11
	89	86

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

June 3, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Infestation levels continue high over the entire Coastal Plain and Piedmont. Reports received this week from 15 counties with estimates reaching 80% of the plants infested. Counts in Bladen and Sampson counties revealed most infestations about 30%. Pupation has begun in many fields and will be complete in about a week. Caution producers that treatment after larvae are 1-2 inches long is wasted. See June 1 memo from Entomology Extension concerning recommendations for this problem. (Morris, McNeely, Reese, Baker, Ext.)

TOBACCO

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Budworm infestations approaching 100% in a few early-planted southern Coastal Plain fields. Damage reaching threshold level in most southern coastal counties. When using insecticides against heavy infestations, growers should not expect to reduce populations below threshold levels, since maximum control expected is 75-80%. (Reagan, Ext.)

COTTON

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Weevil collections from sex traps very light to 26 May. Collections from 247 traps scattered over all the major cotton-producing counties revealed a collection range from 0 weevils/trap/week in Nash County to 0.47 weevils/trap/week in Robeson County. Forest

litter surveys in overwintering areas conducted in southern states indicate high winter mortality. (Bacheler, Ext.)

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CEREAL LEAF BEETLE (Oulema melanopus) - NORTH CAROLINA - Detection surveys conducted to date in small grains by N.C.D.A. and U.S.D.A., A.P.H.I.S. inspectors reveal cereal leaf beetle infestations along the Virginia border from Alleghany County in the west to Northampton County in the east. Collections and identification have been made in about 15 counties. (Lanier, A.P.H.I.S.)

VEGETABLES AND FRUITS

BLUEBERRY MAGGOT (Rhagoletis mendax) - NORTH CAROLINA - Collections from traps in blueberry fields continue in Pender County. Four adults collected in 1 field last week. (Bost, Ext.)

CORRECTION

Insect Survey Note, May 20, 1977, Thrips (prob. Herothrips sp.) should be Thrips (Sericothrips variabilis).

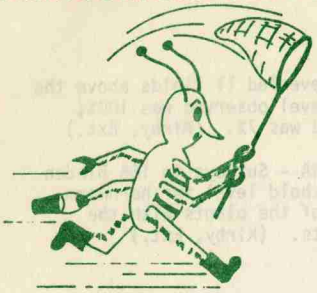
COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of May 19-25, 1977	Week of May 26-June 1, 1977
Man and Animals	1	5
Southern Field Crops	2	3
Grain, Soybeans and Forages	26	18
Forestry, Ornamentals and Turf	20	24
Fruit	8	6
Vegetables	7	6
Wood Destroying Insects	3	2
Household and Industrial Insects	1	1
Miscellaneous & Accidental Household	7	3
Miscellaneous	11	7
	86	75

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

June 10, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist
Raleigh, North Carolina

CORN

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Earworms continue to damage late corn fields scattered over entire Coastal Plain and Piedmont. However, heaviest infestations are subsiding. Damage reports of 50% plants damaged were received this week from Piedmont and Coastal Plain fields, but pupation is occurring in all areas. Farmers should be cautioned against treating damage. If worms are 1-2 inches long, any benefits from spraying with insecticides are very limited. (Hunt, Ext.)

COTTON

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Weevil catches in sex traps remain low in all cotton-producing counties. Collections average less than 1 weevil/trap/week. (Hunt, Ext.)

TOBACCO

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Surveys in 200 Lenoir County tobacco fields revealed only 5 infestations above threshold. The average infestation level was 7% of the plants with the highest level detected being 30% of the plants. Rains and insecticides have maintained adequate control. (Harper, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

Surveys conducted in 166 Bladen County fields revealed 11 fields above the threshold level for budworms. Highest infestation level observed was 100%; however, the most frequent infestation level observed was 7%. (Kirby, Ext.)

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - Surveys in 166 Bladen County fields revealed 4 fields at or above the threshold level for hornworm larvae. Highest infestation level observed was 50% of the plants with the most frequent infestation level being 3% of the plants. (Kirby, Ext.)

VEGETABLES AND FRUITS

BLUEBERRY MAGGOT (Rhagoletis mendax) - NORTH CAROLINA - Trap catches remain low over the blueberry-producing counties. Dr. Ken Sorensen feels dry weather during summer of 1976 reduced larval development in unharvested berries. (Sorensen, Ext.)

MAN AND ANIMALS

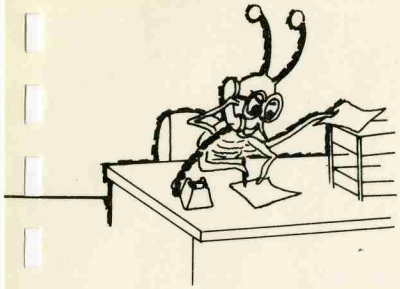
FACE FLY (Musca autumnalis) - NORTH CAROLINA - Adult infestations averaged 35-50 flies per head in Jackson, Macon, Haywood and Buncombe counties. Infestations ranged from 10-90 flies per head in the 15 herds observed scattered over these counties. (Hunt, Ext.)

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of May 26-June 1, 1977	Week of June 2-8, 1977
Man and Animals	5	2
Southern Field Crops	3	1
Grain, Soybeans and Forages	18	21
Forestry, Ornamentals and Turf	24	23
Fruit	6	9
Vegetables	6	14
Wood Destroying Insects	2	2
Household and Industrial Insects	1	2
Miscellaneous & Accidental Household	3	1
Miscellaneous	7	10
	75	85

AGRICULTURAL EXTENSION SERVICE

memo



Entomology

June 10, 1977

MEMO TO: Agricultural Extension Agents with Corn Responsibility

FROM: Thomas N. Hunt, Extension Entomology Specialist TN.H.

SUBJECT: News and Observer Article Concerning Corn Earworm, Saturday, June 4, 1977

The Raleigh News and Observer newspaper article concerning corn earworms in corn which appeared Saturday, June 4, was written with no input from me, written or oral.

There were several gross errors which I would like to rectify.

1) Neither I nor any other person in Extension Entomology at N. C. State University recommended a treatment in corn to prevent future damage in other crops.

2) Tassel loss was grossly in error as most agronomists feel that excellent pollination can be achieved with a 70% loss of tassels, not 35-40% as reported.

3) I did not recommend methomyl (even though it is labeled for this use) because of its harmful effect on beneficial insects.

4) It is true that 70% of the plants have been infested in some fields scattered over the Coastal Plain and Piedmont. It is not true that 70% of the cornfields are being severely damaged as implied by the article.

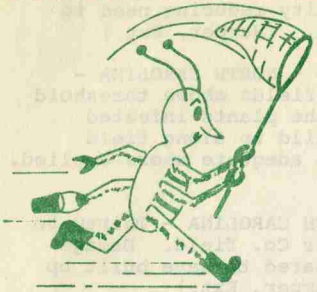
My recommendations concerning corn earworms in corn whorls were sent in memo form to agricultural extension agents with corn responsibilities on June 1, 1977. Please refer to that memo or call my office. Please share this memo with your co-workers.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

June 17, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Larval damage subsiding in all fields of Piedmont and Coastal Plain. Reports received this week of 15-25% plants damaged in Mountain and late-planted western Piedmont fields. Pupation complete in 15 fields sampled in central Coastal Plain. The currently developing 2nd generation will occur in corn ears. Chemical control is not economical for this generation in field corn. (Hunt, Ext.)

SUGARCANE BEETLE (Euetheola rugiceps) - NORTH CAROLINA - Damage from this insect is sporadic in N. C. However, scattered fields receive injury annually. Stanly Co. reports 80-90% stand loss on 3 acres of corn. The pattern associated with damage from this pest is usually pastures converted to corn. (Blackmore, Ext.)

WIREWORM (Prob. Conoderus sp.) - NORTH CAROLINA - Wireworm injury continues to be a problem in late corn. Alleghany Co. reports about 6 acres of silage corn with 50% of the plants damaged. Mortality expected to exceed 25%. Postemergence controls of wireworms in corn are usually unsatisfactory. (Washington, Ext.)

TOBACCO (See Late Note)

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Surveys in 240 Lenoir Co. tobacco fields revealed 3 fields above threshold with highest infestation observed being 12.5% of the plants infested.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

The average % infestation was 1%. Crop maturity reducing need to control budworms in some Coastal Plain fields. (Harper, Ext.)

PROB. GREEN PEACH APHID (Myzus persicae) - NORTH CAROLINA - Surveys in 240 Lenoir Co. fields revealed 23 fields above threshold for aphids. Highest infestation was 40% of the plants infested with a 15% average. Populations appear to build up along field margins and expand into field. Controls were adequate where applied. (Harper, Ext.)

BEET ARMYWORM (Spodoptera exigua) - NORTH CAROLINA - Thirty to 40% of the tobacco plants infested in a Lenoir Co. field. Damage severe on lower 2-5 leaves. Infestation appeared to have built up on lamb's-quarters and moved to tobacco. (Harper, Ext.)

COTTON

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Damage to date very minor due to the very low boll weevil populations. Sex lure trap (247 in state) catches were generally very low this year, averaging less than 1 weevil/trap/week. Any population buildup during the remainder of this season will likely be controlled by insecticide applications for bollworms. (Bacheler, Ext.)

MAN AND ANIMALS

ROCKY MOUNTAIN SPOTTED FEVER (Primary vector is American Dog Tick, Dermacentor variabilis) - NORTH CAROLINA - Through May, 39 cases of Rocky Mountain spotted fever have been reported to state officials. This compares to 24 for 1976. The average for the first five months of previous years in which records have been kept is 20 cases. During 1976, 192 cases were reported with 9 fatalities. (MacCormack, Div. of Health Services, Dept. of Human Resources)

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of June 2-8, 1977	Week of June 9-15, 1977
Man and Animals	2	3
Southern Field Crops	1	2
Grain, Soybeans and Forages	21	27
Forestry, Ornamentals and Turf	23	26
Fruit	9	2
Vegetables	14	17
Wood Destroying Insects	2	1
Household and Industrial Insects	2	--
Miscellaneous & Accidental Household	1	2
Miscellaneous	10	11
	85	91

LATE NOTE

TOBACCO - OLD BELT

BUDWORMS AND HORNWORMS (H. virescens and Manduca sexta)- NORTH CAROLINA - Surveys in 23 Granville, 5 Vance, 5 Person and 2 northern Wake County fields indicate 0 fields at threshold for budworms and hornworms. Highest infestation level was 4% for budworms. Highest infestation was 10% (many larvae parasitized) for hornworms.

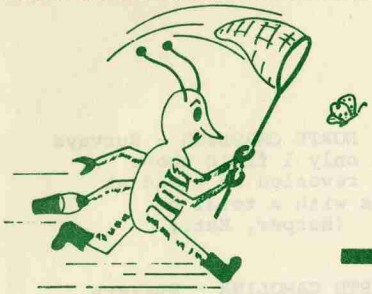
BENEFICIALS

Stilt bugs and Campoletis sp. activity high in all fields sampled. Insecticide application in fields sampled would be unjustified. (Baumhover, ARS, USDA)

AGRICULTURAL EXTENSION SERVICE

D.D. Knight 15

INSECT SURVEY NOTES



entomology

June 24, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T.N.H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Reports received this week from 4 Piedmont counties with European corn borer larval damage to tassels and whorls of late corn. Approximately 40% of the tassels were damaged in a Cleveland County field. Damage was also reported from Rockingham, Moore and Richmond counties. This generation rarely warrants treatment in pretassel corn. (Shoulars, Spencer, Ext.)

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Observations in 6 corn fields in the central Coastal Plain reveal egg laying has not begun in silking field corn. This indicates the pupae remain in the soil in this area. Samples 27-30 June in the southern Coastal Plain will be conducted and will indicate the stage of development in the southern area. (Hunt, Ext.)

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - NORTH CAROLINA - No spider mites have been detected to date in corn. Samples have been taken near heavy 1976 infestations in Halifax and Edgecombe counties with negative results. (Wells, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

TOBACCO

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Surveys in 266 Lenoir County tobacco fields revealed only 1 field above threshold. Surveys in 36 Middle Belt fields revealed no field at threshold, 4 fields had 2% infestation levels with a total of 14 larvae observed in 3,600 plants examined. (Harper, Ext.; Baumhover, ARS)

GREEN PEACH APHID (Myzus persicae) - NORTH CAROLINA - Surveys in 266 Lenoir County tobacco fields revealed 69 fields at threshold for aphids. Highest infestation observed was 75% of the plants; however, most infested fields averaged 15.2% of the plants.

Increased aphid activity was also observed in the Granville-Person County area. (Harper, Ext.; Baumhover, ARS)

BENEFICIALS

STILT BUG (Jalysus spinosus) - NORTH CAROLINA - Stilt bugs remain active (5 or more observed per 100 plants examined) in 32 of 36 tobacco fields scouted in Granville, Vance, Person and northern Wake counties. (Baumhover, ARS)

SERPHID (prob. Allograpta obliquua) and LADY BEETLE (prob. Hippodamia convergens) activity increasing in most Middle Belt tobacco fields with the expanding aphid population. (Baumhover, ARS)

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

Dr. Knight

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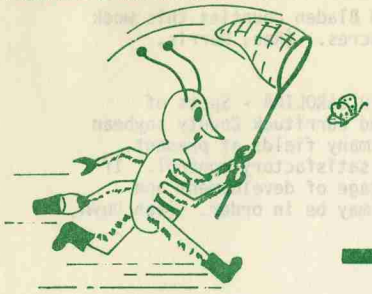


entomology

July 8, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist JNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

ARMYWORMS (Pseudaletia unipuncta) - NORTH CAROLINA - A heavy moth flight occurred during mid-June in the Coastal Plain counties. The resulting larvae began appearing in lush grass during early July. To date reports of damage to corn have been received from Sampson, Jones, Lenoir, Wayne, Hyde, Moore, Scotland, Bladen and Robeson counties. Approximately 5,000 acres with some feeding injury have been observed in Lenoir County. Infestations of 8 per corn plant have been observed in Coastal Plain fields to 15 acres in size. When grass was eaten prior to completing their developmental period, the insects moved to the adjacent corn. Reports and observations to date indicate that grassy fields and grassy spots have a much higher infestation level than grass-free fields. (Harper, Van Duyn, Carter, Baker, Hunt, Ext.)

SOUTHERN CORN BILLBUG (Sphenophorus callosus) - NORTH CAROLINA - Southern corn billbug adults have been identified from a Haywood County corn field. Damage had occurred to 50% of the plants. Infestations of this insect are primarily in the Coastal Plain counties. Damage this severe had not been reported from the mountains prior to this detection. (Krenzer, Ext.)

SOYBEANS

BEET ARMYWORMS (Spodoptera exigua) - NORTH CAROLINA - Damage continues this week primarily in late soybeans, particularly beans following small grain.

Extensive damage was reported from Pamlico, Lenoir and Bladen counties this week with treatments being applied to approximately 1,100 acres. (Rea, Morris, Buchanan, Ext.)

MEXICAN BEAN BEETLE (Epilachna varivestis) - NORTH CAROLINA - Spots of 30% defoliation have been observed in Lenoir, Jones and Currituck County soybean fields. Pupation on the lower leaves is occurring in many fields at present. Chemical controls applied during pupation do not give satisfactory control. If controls are being considered, be sure to determine stage of development and population level. A delay until pupation is complete may be in order. (Van Duyn, Ext.)

COTTON

BOLLWORM (Primarily Heliothis zea) - NORTH CAROLINA - Approximately 1/2 of the 25-30 thousand acres in the Scotland-Robeson County area have been sprayed for bollworms. The vast majority of the larvae collected in this area are H. zea, particularly in unsprayed fields, although some H. virescens have been found. Surveys reveal wide variation in damage, ranging from 1% to an occasional field with 50% squares damaged.

Eggs and larvae generally light in northern and far western cotton areas. (Bacheler, Ext.)

FORAGE

COASTAL BERMUDA

ARMYWORM (Pseudaletia unipuncta) - NORTH CAROLINA - Severe damage has been observed in Bladen, Scotland, Moore, and Wayne counties to date. General infestations in 15-50 acre fields have been observed with 30-40 larvae (2nd - 4th instar) per sq. ft. of soil surface. Generally these insects feed at night and hide under litter on the soil during the day. See corn armyworm in this note. (Baker, Hunt, Van Duyn, Ext.)

TOBACCO

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Surveys conducted 27-30 June in 36 Middle Belt tobacco fields revealed very low infestation levels. The highest infestation detected was 2%. Surveys 4-7 July continue to reveal infestation levels below threshold. (Baumhover, ARS)

APHIDS - NORTH CAROLINA - Surveys conducted 27-30 June in 36 Middle Belt (Granville County area) tobacco fields revealed only 5 with detectable aphid infestations. Most frequent infestation level was less than 2%. Surveys 4-7 July revealed further decline in infestation levels.

Surveys in 262 Lenoir County fields revealed 33 aphid infestations. The highest infestation level detected was 75% of the plants with an average infestation of 10%. Controls adequate. (Harper, Ext.; Baumhover, ARS)

ORNAMENTALS

FRASER FIR (CHRISTMAS TREES)

SPRUCE SPIDER MITE (Oligonychus ununguis) - NORTH CAROLINA - Surveys in Ashe County have shown little spider mite activity until recently. Apparently

the hot, dry weather has allowed populations to increase. Chemical control may be necessary in certain plantations. Now is the time to be checking your fields for mite presence. The following plantations in Ashe County have blocks with high mite populations: Plot 1, Block 3 (14 of 22 trees inspected needed treatment); Plot 44, Block 3 (14 of 22 trees inspected needed treatment); Plot 22, Block 2 (11 of 14 trees inspected needed treatment). Each block contains 1,000 trees. (Hain, Dept. of Ent.)

BENEFICIALS

STILT BUGS (Jalysus spinosus) - NORTH CAROLINA - Surveys in 36 fields revealed increasing populations. Populations increased from 20/100 plants 27-30 June to 60/100 plants 4-7 July. (Baumhover, ARS)

Apanteles congregatus - NORTH CAROLINA - Infestations increased during past 2 weeks from approximately 50% of the hornworms collected infested to 90+% of the hornworms infested 4-7 July. (Baumhover, ARS).

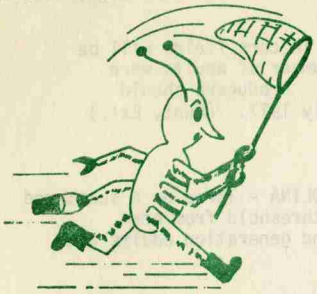
COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING THREE WEEKS.

	Week of June 16-22, 1977	Week of June 23-29, 1977	Week of June 30-July 6, 1977
Man and Animals	--	--	--
Southern Field Crops	--	--	2
Grain, Soybeans and Forages	5	5	14
Forestry, Ornamentals and Turf	19	33	17
Fruit	1	2	6
Vegetables	10	15	7
Wood Destroying Insects	--	1	--
Household and Industrial Insects	5	2	2
Miscellaneous & Accidental Household	2	5	3
Miscellaneous	10	6	9
	52	69	60

Dr. Knight K

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

JUL 15 1977

ENTOMOLOGY DEPT.

July 15, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T.N. Hunt

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

ARMYWORM (Pseudaletia unipuncta) - NORTH CAROLINA - Reports of armyworm damage to corn in all stages of development continue from southern and central Coastal Plain. Observations this week by entomologists reveal that grassy (particularly crab grass and wire grass) fields are most likely to have heavy armyworm populations. More than 3,000 acres of damaged corn were reported from Columbus-Robeson County area to Washington County area, 11-15 July. (Williford, Waddel, Simpson, Jernigan, Ext.)

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Fall armyworms active in pretassel corn in at least 3 Bladen and 2 Columbus County fields. Drought increased problems of control due to twisted blades and the worm's habit of feeding in the whorl. Approximately 600 acres are known to be infested by this pest to date. (Hunt, Ext.)

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Surveys were conducted in 23 Coastal Plain corn fields from Robeson County to Halifax County. Sixty-five percent of the 600 ears examined were infested. In the southern coastal counties, an additional 10% of the ears had been infested; but pupation is occurring and the worms have left the ears. The range of infestation levels was 2% to 96% of the ears infested per field. The average infestation level in the coastal counties ranged from 17% to 85% depending upon silking date.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

Eggs from surviving adults of this generation presently in corn fields will be laid on soybeans, cotton, sorghum, etc. A very light number of adults were observed in 3 Bladen County soybean fields 14 July 1977. Producers should initiate soybean scouting for corn earworms about 25 July 1977. (Hunt, Ext.)

SOYBEANS

BEAN LEAF BEETLE (Cerotoma trifurcata) - NORTH CAROLINA - Three or 4 scattered fields are known to be approaching the 35% defoliation threshold from bean leaf beetle adults in the Washington County area. Second generation adults are presently emerging. (Pleasants, Ext. Pest Mgt.)

TOBACCO

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - Surveys conducted in 256 Lenoir County tobacco fields and 36 Middle Belt fields continue to reveal low levels of damage in both areas. Two fields sampled in Lenoir County reached threshold of 10% and none in the Granville County area. Second generation larvae beginning to appear in Middle Belt. (Harper, Ext.; Baumhover, ARS)

GREEN PEACH APHID (Myzus persicae) - NORTH CAROLINA - Aphid problems have begun to subside in all areas reporting. However, populations above the threshold remain in scattered fields of the northern Coastal Plain. (Baumhover, ARS; Pleasants, Harper, Ext.)

PASTURES

ARMYWORM (Pseudaletia unipuncta) - NORTH CAROLINA - Damage reports continued this week from Robeson, Sampson, and Richmond County pastures and hay fields (primarily coastal bermuda). Approximately, 2,000 acres are known to have been treated in the state to date for this pest in pastures. The infestation appears to be subsiding in most areas. See Corn Note. (Flynt, Hunt, Ext.)

FEDERAL AND STATE PROGRAMS

GYPSY MOTH (Porthetria dispar) - NORTH CAROLINA - Two male gypsy moths have been collected from sex traps to date: 1 male, Beaufort, Carteret counties; 1 male, Duck, Dare County. Approximately, 5,200 traps are being operated in the state for gypsy moth detection. (Planer, APHIS)

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of June 30-July 6, 1977	Week of July 7-13, 1977
Man and Animals	--	1
Southern Field Crops	2	5
Grain, Soybeans and Forages	14	14
Forestry, Ornamentals and Turf	17	27
Fruit	6	4
Vegetables	7	10
Wood Destroying Insects	--	3
Household and Industrial Insects	2	1
Miscellaneous & Accidental Household	3	1
Miscellaneous	9	8
	60	74

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

July 22, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Damage severe to scattered late-maturing corn and sorghum. Reports received from Granville, Anson, Moore and Washington counties 18-21 July with infestations reaching 80% of the plants. Granville and Washington counties each reported heavy damage to a 40+ acre field. Other infestations observed averaged 1-10 acres. This insect often attacks deep in the whorl. Controls very difficult in drought-stressed fields. (Murfree, Van Duyn, Hunt, Ext.)

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - NORTH CAROLINA - Infestations of spider mites have increased greatly during the past three weeks (July 1-July 21). In Chowan and several surrounding counties, many acres of field corn show considerable damage. Melons, peanuts, and cotton show some signs of minor infestations. As the field corn begins to dry, there exists the possibility of these mites moving into other crops. (Bradenburg, Ent. Dept.)

ARMYWORM (Pseudaletia unipuncta) - NORTH CAROLINA - Damage continues to occur in the Piedmont and mountains. Controls were known to be applied to approximately 50 acres in the Anson and Stanly County area and a small Macon County field (15 acres or less). Problem appears to have subsided in Coastal Plain area. (Rollins, Fedoronko, APHIS)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Larvae pupating at a rapid rate in corn. Estimates from 15 southern Piedmont fields and 4 southern Coastal Plain fields indicated 40-50% of the ears continue to harbor larvae 18-21 July. This is compared to 65% of the ears harboring earworms 11-15 July. (Wells, Buchanan, Ext.)

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Observations in 20 soybean fields revealed the presence of many moths. This is approximately 7 days earlier than first observations the preceding 8 years. Early blooming varieties (Essex, Forrest, York, Dare, Group V) usually escape threshold level populations; however, oviposition is occurring in these varieties in the Piedmont and Coastal Plain. Weekly scouting (beat cloth) should be initiated in all open canopy fields within 7 days. The potential for severe earworm attack exists in many Coastal Plain and Piedmont soybean fields because drought stress has left many open canopy fields. Oviposition appears to be going to occur over a longer period of time than usual. Weekly conditions will be reported in this newsletter. (Hunt, Ext.)

BEET ARMYWORM (Spodoptera exigua) - NORTH CAROLINA - Reports of 60+ acres infested in Robeson-Columbus County area on small soybeans (12 inches or less in height). Approximately 400 acres infested in Washington-Tyrrell County area with counts ranging from 10-43 per row ft. Young soybeans with pigweed, lamb's-quarters, etc., appear more likely to receive beet armyworm defoliation. Recommended methods of control have been successful. (Carter, Van Duyn, Ext.; Bradley, Ent. Dept.)

BEAN LEAF BEETLE (Cerotoma trifurcata) - NORTH CAROLINA - Threshold level (35% foliage loss prior to bloom) continues to be met in scattered soybeans in Martin-Washington County area. Entomologists feel that the 2nd generation (1st after overwintering) has reached peak levels. Number of fields reaching threshold should begin to decline. (Van Duyn, Ext.)

TOBACCO

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - Surveys conducted in 109 Lenoir Co. fields and 36 Middle Belt fields continue to reveal low levels of damage in both areas. Six fields sampled in Lenoir Co. and none in the Granville Co. area reached threshold level (10%). Highest infestation detected in Lenoir Co. was 33% of the plants infested with an average infestation level for all Lenoir Co. fields sampled being 2.5%. Egg counts in Granville Co. area indicate a potential problem in 5 of 36 fields. Counts reached 1.8 eggs/plant in 1 field. (Harper, Ext.; Baumhover, ARS)

SMALL FRUITS (BLUEBERRY)

SHARPNOSED LEAFHOPPER (Scaphytopius magdalensis) - NORTH CAROLINA - Vector of Blueberry Stunt - First collections of the summer were made 15 July from commercial blueberry fields in Duplin County. Eight specimens collected with positive identification made on 4. (Only males can be identified.) (Wells, Ext.)

BENEFICIALS

STILT BUGS (Jalysus spinosus) - NORTH CAROLINA - Stilt bugs continue to be very active in Middle Belt tobacco fields untreated with insecticides. Fifteen of 36 fields sampled had 100+ per 150 plants. Where insecticides were applied preplant or postemergence, counts averaged about 6 per 150 plants. (Baumhover, ARS)

FOREST AND SHADE

FALL CANKERWORM (Alsophila pometaria) - NORTH CAROLINA - Fall cankerworm larvae heavily defoliated hardwood forests in Macon, Clay and Madison counties. Both National Forest and private land were damaged. Since only 1 generation occurs per year, damage for 1977 is complete. Undoubtedly some growth loss occurred, but no dieback or mortality has been attributed to the infestation. (Doggett, N. C. Forest Service)

FRASER FIR (CHRISTMAS TREES)

SPRUCE SPIDER MITE (Oligonychus ununguis) - NORTH CAROLINA - Surveys in Ashe County on July 12 found the following blocks with populations approaching damage thresholds: Plot 1, Block 3 (13 of 19 trees were infested); Plot 10, Block 1 (22 of 42 trees were infested). On July 19 the following blocks were found with high populations: Plot 13, Block 3 (6 of 9 trees were infested); Plot 22, Block 2 (7 of 14 trees were infested); Plot 23, Block 2 (5 of 6 trees were infested); Plot 26, Block 2 (6 of 7 trees were infested); and Plot 44, Blocks 1 (6 of 7 trees were infested), 2 (6 of 8 trees were infested), and 3 (6 of 9 trees were infested). Present conditions favor mite buildup in most production areas. (Nettleton, Ent.)

LIGHT TRAP

Light Trap Collections Corn Earworm, Heliothis zea, 1977

Location	July						
	15	16	17	18	19	20	21
Goldsboro	21	20	65	82	118	170	46
Plymouth	--	--	--	100	600	1100	97
Gaston, Northampton Co.	61	--	--	200	--	--	--

Light trap catches of corn earworm moths have increased in all areas 18-22 July. Reports of 300-500 per night were received from Robeson and Scotland County area.

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of July 7-13, 1977	Week of July 14-20, 1977
Man and Animals	1	2
Southern Field Crops	5	1
Grain, Soybeans and Forages	14	5
Forestry, Ornamentals and Turf	27	20
Fruit	4	3
Vegetables	10	7
Wood Destroying Insects	3	6
Household and Industrial Insects	1	4
Miscellaneous & Accidental Household	1	4
Miscellaneous	8	4
	74	56

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

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ENTOMOLOGY DEPT.

July 29, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T.N.H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN AND SORGHUM

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Infestations in late corn very severe over entire state. Infestations averaging 3 larvae per plant over fields 30 acres in size have been observed 25-29 July. Counties reporting damage this week were Buncombe, Franklin, Wayne, Johnston, Tyrrell, Edgecombe, Person and Alamance counties. In drought-stricken areas, farmers are reluctant to spend more money for insect control. Observation in 8 Franklin Co. fields 28 July revealed 100% of the late corn fields infested. Infestations ranged from approximately 5% of the plants infested to 3 larvae per plant. (Hardison, Peek, Rivers, Hunt, Ext.)

SOYBEANS

BEET ARMYWORMS (Spodoptera exigua) - NORTH CAROLINA - Extensive damage continues in soybeans 2 feet tall and less across entire Coastal Plain. Reports received this week from Craven, Lenoir, Tyrrell, Wayne, and Robeson counties. Defoliation reports this week ranged from 20% foliage loss in a 40-acre Robeson Co. field to 10% in 5 acres of 8-inch beans. (Simpson, Baker, Buchanan, Williford, Ext.)

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - The movement of adults from corn to soybeans is building toward the peak. Egg laying is in progress over the entire state in soybeans. Most activity is in fields with open canopies and at peak bloom. However, egg laying is so intense this year, economic threshold

levels may occur in any field. Drought stress has caused most fields to have open canopies. Hatching has begun in southern and eastern Coastal Plains. Scouting should commence the 1st week of August. Fields sprayed earlier for defoliators should be sampled thoroughly because of reduction in the numbers of beneficials. (Wells, Hunt, Ext.)

VEGETABLES

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Collection of adults heavy in light traps during July. Anticipate extensive damage to fall Irish potatoes, sweet corn, and peppers. (Sorensen, Ext.)

TOBACCO

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - Surveys conducted in 259 Lenoir County fields revealed 22 at threshold. The highest infestation level was 33% of the plants. The average infestation was 5%. Surveys conducted in 144 Bladen County fields revealed 29 at the threshold level. The highest infestation level was 20% of the plants infested. (Harper, Kirby, Ext.)

TOMATO HORNWORM (Manduca quinquemaculata) - NORTH CAROLINA - In the Granville Co. area (Middle Belt), 36 tobacco fields were sampled (100-plant count) revealing 5 fields at threshold. Heaviest infestation observed was 146 4th and 5th instar larvae per 100 plants. (Baumhover, ARS)

BEET ARMYWORM (Spodoptera exigua) - NORTH CAROLINA - Larval damage occurring to midstalk in a 6-acre Wake Co. tobacco field and a 10-acre Sampson Co. field 25-29 July. Limited control was achieved by air with 1 application of methomyl in Sampson Co. (Reagan, Hunt, Ext.)

COTTON

BOLLWORM (Heliothis zea) - NORTH CAROLINA - Most spray programs have been initiated over the entire state. Observations in Franklin, Edgecombe and Harnett Co. cotton reveal very heavy egg laying in progress. Cotton producers not in a spray group should initiate spray program immediately. (Hunt, Ext.)

BENEFICIALS

STILT BUGS (Jalysus spinosus) - NORTH CAROLINA - These predators active in all but 10 tobacco fields scouted 26-29 July in Granville Co. area. Eight of these 10 fields are known to have been treated with insecticides. (Baumhover, ARS)

BLACK LIGHT TRAP

Catches of corn earworm adults remain high in Coastal Plains from Robeson to Northampton counties. One night collections of 990 were recorded in Robeson Co. and 1300 in Washington Co. 22-29 July. Peak has likely not been reached yet as flight continues heavy in all reporting areas. (Van Duyn, Hunt, Ext.)

Corn Earworm, Heliothis zea

Location		Total Collections 20-27 July		
Rocky Mount		2000		
Kinston		2000		
Clinton		1000		
Lewiston		250		
Reidsville		250		
Jackson Springs		500		
Bladen Co. (2 trap avg.)		3000+		
		July		
		22	25	27
McAllister	Robeson	990	1470	1150
Malloy		843	1340	550

(Baumhover, ARS; Williford, Ext.)

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of July 14-20, 1977	Week of July 21-27, 1977
Man and Animals	2	2
Southern Field Crops	1	4
Grain, Soybeans and Forages	5	11
Forestry, Ornamentals and Turf	20	26
Fruit	3	4
Vegetables	7	15
Wood Destroying Insects	6	2
Household and Industrial Insects	4	3
Miscellaneous & Accidental Household	4	--
Miscellaneous	4	9
	56	76

Dr. Knight

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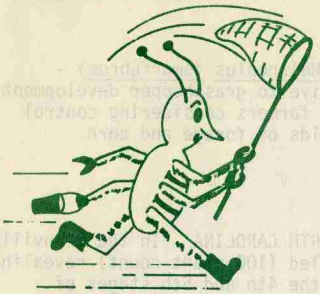
INSECT SURVEY NOTES



entomology

August 5, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist JNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Larvae are hatching in fields over the entire Coastal Plain and Piedmont. The potential for loss is very high in more fields than usual. Small larvae have been reported from Robeson, Jones, Lenoir, Pitt, Wilson, Johnston, Montgomery and Chatham counties. Populations to 9 per ft. of row have been observed in open canopy, past bloom or blooming fields. About 80% of the soybeans (compared to 50% in 1975) have open canopies because of drought stress. Since egg laying continues heavy over the entire state, many of these fields will reach the threshold level (2 per ft. of row) for corn earworms. (Wells, Ext.; Buchanan, Hays, APHIS)

BEET ARMYWORM (Spodoptera exigua) - NORTH CAROLINA - Larval damage continues primarily in late-maturing soybeans. However, scattered larvae exist in older beans. Double crop beans appear to be most heavily infested at present. (Hunt, Ext.)

CORN AND SORGHUM

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Damage continues to late-maturing corn (grain and silage) and sorghum in northern Coastal Plain and entire Piedmont. Infestations reported 1-4 August in five 50-acre fields with 80% of the plants infested with an average of 2 larvae per plant. (Cooper, Swann, Wright, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

PASTURES AND FORAGE

GRASSHOPPERS PRIMARILY REDLEGGED GRASSHOPPER (Melanoplus femurrubrum) - NORTH CAROLINA - Dry conditions appear to be conducive to grasshopper development. Numbers in forage crops higher than usual with some farmers considering control applications in scattered Piedmont and Mountain fields of forage and corn. (Falter, Lynn, Ext.)

TOBACCO

TOMATO HORNWORM (Manduca quinquemaculata) - NORTH CAROLINA - In the Granville Co. area (Middle Belt), 36 tobacco fields were sampled (100-plant count) revealing 9 fields at threshold. Most of the larvae were in the 4th and 5th stages of development, indicating peak population has been reached. Treatments have given 90-95% control. (Baumhover, ARS)

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - In Lenoir County, 241 fields sampled with 3 fields reaching threshold of 10% of the plants infested. Average infestation was 1% of the plants infested. (Harper, Ext.)

BENEFICIALS

HORNWORM PARASITE (Apanteles congregatus) - NORTH CAROLINA - Thirty-four % of the 5th stage tomato hornworm larvae were infested. However, this percentage is too low to offer adequate control. (Baumhover, ARS)

BLACK LIGHT TRAP COLLECTIONS

Catches of corn earworm adults remain high over entire Coastal Plain. There does appear to be a slight decline in the flight to date. However, heavy egg laying continues in open canopy blooming soybeans, sorghum, peanuts, cotton and peas.

Corn Earworm, Heliothis zea

	July									Aug.		
Location	18	19	20	21	22	25	26	27	29	1	3	5
Plymouth	100	600	1100	97	97	341	1358	178	258	507	1080	1856

	July												
	18	19	20	21	22	23	24	25	26	27	28	29	30
Goldsboro	82	118	170	46	119	140	266	540	213	170	129	136	124

	July 20-27	July-Aug. 27	3
Rocky Mount	2000	2000	
Kinston	2000	100	
Clinton	1000	50	
Lewiston	250	50	
Reidsville	250	50	
Jackson Springs	500	150	

Robeson Co.	July				Aug.	
	22	25	27	29	1	3
McAllister Farm	990	1470	1150	865	945	1694
Malloy Farm	843	1340	550	430	625	550

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of July 21-27, 1977	Week of July 28-Aug. 3, 1977
Man and Animals	2	2
Southern Field Crops	4	10
Grain, Soybeans and Forages	11	22
Forestry, Ornamentals and Turf	26	34
Fruit	4	4
Vegetables	15	11
Wood Destroying Insects	2	2
Household and Industrial Insects	3	4
Miscellaneous & Accidental Household	--	2
Miscellaneous	9	9
	76	100

A-45. Dr. Knight

AGRICULTURAL EXTENSION SERVICE

NORTH CAROLINA STATE UNIVERSITY | AT RALEIGH

SCHOOL OF AGRICULTURE AND LIFE SCIENCES

ENTOMOLOGY
BOX 5215 ZIP 27607

August 5, 1977

TO: Agricultural Extension Agents with Soybean Responsibility

FROM: Thomas N. Hunt, Extension Entomology Specialist TNH

SUBJECT: Corn Earworms in Soybeans

Needless to say, this is not an average year, and as predicted, the corn earworm is building up in soybeans. Below, I have itemized some factors which may be of benefit to producers in your county.

1) The moth flight is 2 weeks earlier than usual. This means that the early varieties (Essex, Forrest, Coker 136, Group V) which usually escape are being infested. (There could also be reinfestations in soybeans this year.)

2) Drought stress has caused more open canopy fields. Therefore, a higher percentage of the fields than usual will be subject to economic damage.

3) In fields where it has been necessary to treat for defoliators (beet armyworm, bean leaf beetle, etc.), the reduction in parasite and predator numbers will increase the probability for a heavy earworm infestation.

4) The flight of corn earworm moths from corn is likely to persist over a longer period this year than in recent years. This could result in eggs being deposited on plants.

5) Earworms do insignificant injury when small (less than 3/4 of an inch long).

In fields where insecticides can be applied within 36 hours of a decision to treat, the treatment threshold is an average of 2 earworms 3/4 inch long per foot of row. To base treatment on 3/4 inch long or longer worms requires every-other-day scouting. The possibility exists that waiting for 3/4 inch worms will not allow enough time for all the eggs to hatch.

6) Scouting should continue until pod kill. The possibility of velvetbean caterpillars and late corn earworm infestations may continue until soybeans mature.

7) With egg laying continuing at the present rate, I suspect there will be a need for 2 or more insecticide applications in some fields.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS. NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

August 12, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN AND SORGHUM

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Damage continues in Piedmont and Mountains with approximately 50 fields reported which exceeded 50% of the plants infested. Infestations in 10-20 acres of late corn and sorghum have been observed with an average of 3 worms per plant. Controls moderate when infestations are deep in the whorl. Counties reporting damage are: Chatham, Lincoln, Polk, Alamance, Graham, Swain, Granville, McDowell, Forsyth, Yancey, and Lee. (Cobb, Roach, Bledsoe, Bunn, Hall, Bradley, et al., Ext.; Bowers, APHIS)

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Larval infestations are extremely high in many Coastal Plain soybean fields which were blooming during late July and early August. Economic damage was also observed in fields which have just started blooming; however, the number of larvae observed was just above threshold of 2/ft. of row. Infestations in Sampson, Edgecombe, Wilson, Johnston, Harnett, Brunswick, and Chatham counties were observed with 5-25 corn earworms per ft. of row in fields 5-40 acres. (Hunt, Ext.)

PEANUTS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Larval infestations critical on peanuts in Sampson, Bladen, Edgecombe, and Northampton counties. Infestations to 10 worms per ft. have been reported with corn earworm being the major defoliator. Accurate evaluation is impossible without a sampling sheet when larvae are small. (Hunt, Robertson, Ext.)

TOBACCO

TOMATO HORNWORM (Manduca quinquemaculata) - NORTH CAROLINA - In the Granville Co. area (Middle Belt), 4 of 36 fields sampled reached threshold for tomato hornworm. Control excellent in all fields treated. (Baumhover, ARS)

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - Surveys in 146 Bladen Co. fields revealed 30% of the fields at threshold (10% plants infested) with the highest infestation level being 30% of the plants. The most frequent infestation level was 5% of the plants. (Fields, Ext.)

COTTON

BOLLWORM (Heliothis zea) - NORTH CAROLINA - Bollworms are under control in many areas with conventional insecticides, especially in drier fields. Damage by bollworms in a few scattered fields is over 50% on squares and 20% of the medium to large bolls. A few extremely drought-stressed fields have so few set bolls (and no squares or blooms) that the cost of continued insecticide treatment is not justified.

All N. C. cotton counties have now been declared eligible for use of the new bollworm-budworm compounds. (Bacheler, Ext.)

FOREST AND SHADE

FRASER FIR (CHRISTMAS TREES)

SPRUCE SPIDER MITE (Oligonychus ununguis) - NORTH CAROLINA - Surveys in Ashe Co. on August 3 and August 10 found the following blocks with populations approaching damage thresholds: Plot 17, Block 1 (16 of 26 trees were infested); Plot 14, Block 1 (10 of 11 trees were infested); Plot 46, Block 1 (14 of 22 trees were infested); Plot 44, Blocks 1 (10 of 11 trees were infested), 2 (11 of 13 trees were infested), 3 (11 of 13 trees were infested); Plot 26, Blocks 2 (12 of 16 trees were infested) and 3 (12 of 16 trees were infested). Present conditions favor mite buildup in most production areas. (Nettleton, Dept. of Ent.)

BENEFICIAL

HORNWORM PARASITE (Apanteles congregatus) - NORTH CAROLINA - Twenty-five % of the 5th instar tomato hornworm larvae were infested. This percentage is too low to provide adequate control in the short run. (Baumhover, ARS)

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GYPSY MOTH (Porthetria dispar) - NORTH CAROLINA - Collection of male moths from sex traps continues, with the most recent in the western half of the state. One male was collected 26 July in Avery Co. by Charles Clark and another in Guilford Co. 1 August by Ted Hoffman. To date, 14 males have been collected in 10 locations. Identifications were made by James S. Greene. (Singletary, N.C.D.A.)

BLACK LIGHT TRAP COLLECTIONS

Catches of corn earworm adults remain high compared to an average year over entire Coastal Plains. There does appear to be a decline in the flight. However, heavy egg laying continues in open canopy blooming soybeans, sorghum, peanuts, cotton and peas.

Corn Earworm, Heliothis zea

	July								Aug.			
Location	21	22	25	26	27	29	1	3	5	8	10	12
Plymouth	97	97	341	1358	178	258	507	1080	1856	2442	2182	2775

	July								Aug.					
	24	25	26	27	28	29	30	31	1	2	3	4	5	6
Goldsboro	266	540	213	170	129	136	124	219	118	234	189	325	298	447

	July 20-27	July-Aug. 27 - 3	Aug. 3-10
Rocky Mount	2000	2000	1500
Kinston	2000	100	25
Clinton	1000	50	200
Lewiston	250	50	50
Reidsville	250	50	50
Jackson Springs	500	150	50

Robeson Co.	July					Aug.			
	22	25	27	29	1	3	5	8	10
McAllister Farm	990	1470	1150	865	945	1694	880	1400	384
Malloy Farm	843	1340	550	430	625	550	530	710	143

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of July 28-Aug. 3, 1977	Week of Aug. 4-10, 1977
Man and Animals	2	4
Southern Field Crops	10	8
Grain, Soybeans and Forages	22	24
Forestry, Ornamentals and Turf	34	29
Fruit	4	3
Vegetables	11	18
Wood Destroying Insects	2	--
Household and Industrial Insects	4	6
Miscellaneous & Accidental Household	2	5
Miscellaneous	9	12
	100	109

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

August 19, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN AND SORGHUM

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Damage continues in the whorls and heads of late corn and sorghum in Piedmont and Mountains. Observations this week revealed that egg laying is continuing on tender grass crops (corn, sorghum, bermuda, etc.). Infestations averaging 3 larvae per plant were observed in a 10 acre Buncombe Co. cornfield and a 20 acre Alamance Co. sorghum field. (Hunt, Krenzer, Ext.)

CORN EARWORM (Heliothis zea) and SORGHUM WEBWORM (Celama sorghiella) - NORTH CAROLINA - Severe sorghum head damage is occurring from a combination of caterpillars over the entire Coastal Plains and Piedmont. Corn earworm and sorghum webworm are the predominant species attacking sorghum heads. Infestations of 5+ larvae per head have been observed in Carteret, Chatham, Wake, and Alamance counties. (Hunt, Bunce, Ext.)

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Effective controls are being applied over the entire state. However, some fields are currently being stripped (100% defoliation). Defoliation is rapidly occurring in untreated infested fields. Infestations of 15-20 per foot of row were observed 17-18 Aug. in Wilson, Johnston, Chatham and Wayne counties. Pupation is occurring in many fields; however, earworms of all stages occurred in most fields examined. The extremely long egg laying period this year has created a situation where adequate control cannot be achieved in all fields with 1 treatment. This is not a result of insecticide failure because eggs which were there hatched or were laid after the treatment had been applied. (Hunt, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

SOYBEAN LOOPERS (Pseudoplusia includens) - NORTH CAROLINA - Loopers (most farmers call green cloverworms loopers) have been detected in a Brunswick Co. soybean field. These defoliators are not annual problems in our state; however, when economic infestations occur, control may be difficult. Remember, loopers have only 3 pairs of abdominal legs and taper from back to front. (Bowen, APHIS, Hunt, Ext.)

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - NORTH CAROLINA - Detection of this defoliator has been made near Bolivia, Brunswick Co., and Williamston, Martin Co. No damage was observed; however, this defoliator could become a problem on late soybeans. Scouting should continue until pod fill. Please report detection of this insect to survey entomologist. (Bowen, APHIS, Hunt, Ext.)

PEANUTS

SPIDER MITES (Tetranychus urticae) - NORTH CAROLINA - Mite infestations are increasing and severe damage to peanuts is resulting. Surveys in Chowan Co. on 16 Aug. found 15% of the fields to contain high infestations of mites. Another 30% of the fields contained low populations of mites, but no damage was observed. (Brandenburg, Ent. Dept.)

TOBACCO

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - Surveys in 86 Bladen Co. tobacco fields revealed 34 fields at threshold for hornworms. The highest infestation observed was 50% of the plants infested and 0% infested was the most frequent condition observed. (Kirby, Reagan, Tobacco Pest Mgt., Ext.)

BLACK LIGHT TRAP COLLECTIONS

Catches of corn earworm moths remain very high compared to previous years over the entire Coastal Plains. In the Robeson Co. and Plymouth locations no decline at all is evident. In fact, Robeson Co. appears to be increasing after a drop 10-15 Aug. This long sustained egg laying period has made it impossible to control economic infestations of corn earworms in some fields with 1 application this year. (Hunt, Williford, Ext.)

Corn Earworm, Heliothis zea

	Aug.							
Location	1	3	5	8	10	12	15	17
Plymouth	507	1080	1856	2442	2182	2775	1138	1834

	Aug.													
	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Goldsboro	325	298	447	223	182	194	81	121	123	103	78	88	219	125

	Aug.							
Robeson Co.	1	3	5	8	10	12	15	17
McAllister Farm	945	1694	880	1400	384	296	650	1230
Malloy Farm	625	550	530	710	143	203	620	1064

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENTS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS

	Week of Aug. 4-10, 1977	Week of Aug. 11-17, 1977
Man and Animals	4	1
Southern Field Crops	8	2
Grain, Soybeans and Forages	24	10
Forestry, Ornamentals and Turf	29	35
Fruit	3	--
Vegetables	18	8
Wood Destroying Insects	--	--
Household and Industrial Insects	6	11
Miscellaneous & Accidental Household	5	5
Miscellaneous	12	10
	109	82

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

August 26, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN AND SORGHUM

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Fall armyworm infestations continue with extremely heavy numbers. Late sorghum observed in Orange, Chatham and Wake counties 22-25 Aug. revealed 6 of 9 fields examined with 3+ larvae per plant. Larvae ranged from 1st-3rd instar in one 25-acre field. (Hunt, Ext.)

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Pupation occurring at rapid rate in 9 of 10 soybean fields examined. Observations this week reveal effective control has occurred where insecticides were properly applied. However, surveys this week revealed some fields still at threshold of 2 per ft. of row.

Scouting is very important prior to application of insecticides to determine larval pressure and numbers. Each year fields are sprayed after the earworms are in the ground.

Adults emerging from soybeans usually don't lay enough eggs to be serious; however, this year the potential exists for damage from this generation also. Scouting should be encouraged until pod fill. (Hunt, Ext.)

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - NORTH CAROLINA - Populations very light in 10 fields sampled in Wake, Wilson, Edgecombe and Halifax counties 22-24 Aug. Samples averaged <1 per 30 ft. of row. (Hunt, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

PEANUTS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Damage continues with 4+ small earworms per ft. of row present on 5 of 10 peanut fields examined in Edgecombe, Halifax and Northampton counties. Controls in this crop appear to have been spotty. (Hunt, Ext.)

TOBACCO

TOMATO HORNWORM (Manduca quinquemaculata) - NORTH CAROLINA - In 36 fields sampled, no fields were at threshold 22-25 Aug. However, black light trap collections week of Aug. 17 revealed adult activity extensive enough to expect larval infestation levels to climb. Scouting in late-maturing fields should continue. (Baumhover, ARS)

VEGETABLES

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Defoliation from earworms observed in Johnston, Harnett, and Wake counties. Sweet potatoes are tolerant of defoliation and yields are usually not reduced. In addition, many fields have few if any worms. However, should earworms be present at time of harvest, considerable damage to exposed and harvested sweet potato roots can result. See memo to sweet potato workers 25 Aug. 1977 from Dr. K. A. Sorensen concerning things to do if worms are present at time of harvest. (Sorensen, Ext.)

PASTURES AND GRASS FORAGES

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Severe infestations of fall armyworms were observed in Wake and Harnett counties. Samples in 40 acres of Wake County coastal bermuda revealed an average of 15 larvae per $ft.^2$, with spots 2 acres in size reaching 40 larvae per $ft.^2$ Control under crisis exemption effective. (Hunt, Ext.)

BENEFICIALS

CARABIDAE (Calosoma sp.) - NORTH CAROLINA - Numerous larvae observed in Wayne County soybean fields. These caterpillar hunters are often effective predators. (Baker, Ext.)

HORNWORM PARASITE (Apanteles congregatus) - NORTH CAROLINA - Seventy-two % of hornworms collected in the Granville County area infested with Apanteles larvae, 22-25 Aug. (Baumhover, ARS)

BLACK LIGHT TRAP COLLECTIONS

Catches of corn earworm moths appear to be declining, however, remain high in general for this late in August. Egg laying for this generation has peaked over the state. Close light trap observation and field scouting is in order in the event of a 4th generation flight which is expected early-mid September. (Van Duyn, Bacheler, Ext.; Baumhover, ARS)

Corn Earworm, Heliothis zea

	Aug.										
Location	1	3	5	8	10	12	15	17	22	24	26
Plymouth	507	1080	1856	2442	2182	2775	1138	1834	--	239	258

	Aug.													
	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Goldsboro	325	298	447	223	182	194	81	121	123	103	78	88	219	125

	July 20-27	July-Aug. 27 - 3	Aug. 3-10	Aug. 10-17	Aug. 17-24
Rocky Mount	2000	2000	1500	1000	500
Kinston	2000	100	25	--	--
Clinton	1000	50	200	100	25
Lewiston	250	50	50	25	50
Reidsville	250	50	50	25	25
Jackson Springs	500	150	50	500	250

Robeson Co.	Aug.										
	1	3	5	8	10	12	15	17	19	22	24
McAllister Farm	945	1694	880	1400	384	296	650	1230	935	832	540
Malloy Farm	625	550	530	710	143	203	620	1064	710	965	608

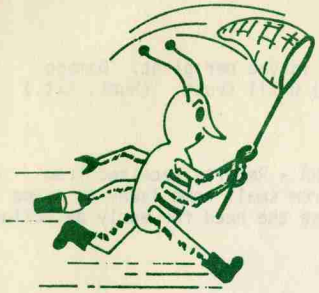
COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of Aug. 11-17, 1977	Week of Aug. 18-24, 1977
Man and Animals	1	--
Southern Field Crops	2	8
Grain, Soybeans and Forages	10	16
Forestry, Ornamentals and Turf	35	17
Fruit	--	2
Vegetables	8	14
Wood Destroying Insects	--	2
Household and Industrial Insects	11	7
Miscellaneous & Accidental Household	5	2
Miscellaneous	10	15
	82	83

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

September 2, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Larval damage to the shanks and stalks of dry field corn have resulted in ear drops in at least 1 Piedmont county. Observations in Anson County revealed potentially serious loss in at least 2 fields. This damage is the result of weakened ear shanks and stalks plus wind and rot. Early harvest is the only way to reduce yield loss. (Potter, Ext.)

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Pupation is complete in most early and mid-season varieties in the Coastal Plain and Piedmont. Economic numbers remain in scattered late fields in Piedmont, central and northern Coastal Plain. Scouting should continue until pod fill, especially in late-planted and late-maturing varieties for earworms and late defoliators.

Major damage from earworms to soybeans has passed for this crop year. The positive and timely reaction of the extension agents, farmers, and pesticide applicators saved 50+% of North Carolina's 1.4 million acres of soybeans. We have endured the worst year of record for earworms in North Carolina soybeans. (Hunt, Ext.)

FORAGE AND PASTURES

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Damage continues to tender grass crops such as sorghum, sudex grass, and pastures. Twenty acres of sorghum were

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

observed 31 August in Iredell County with an average of 3 larvae per plant. Damage expected to tender grass crops (cover crops, silage, etc.) until frost. (Hunt, Ext.)

LAWNS AND GOLF COURSES

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Reports received from 6 Piedmont and 3 Coastal Plain counties. Damage ranged from small home lawns to acres on a golf course. Insecticide shortages greatly increase the need for early detection. (Robertson, Hunt, Ext.)

MAN AND ANIMALS

FACE FLY (Musca autumnalis) - NORTH CAROLINA - Observations of 15 herds from Wake to Macon counties, North Carolina, revealed face fly infestations in all herds. Infestatio levels ranged from 5 to 10 per head to 70+ per head. Heaviest infestations remain in Mountain and western Piedmont counties. (Hunt, Ext.)

BLACK LIGHT TRAP COLLECTIONS

Corn Earworm, Heliothis zea

	Aug.												Sept.	
Location	1	3	5	8	10	12	15	17	22	24	26	29	1	2
Plymouth	507	1080	1856	2442	2182	2775	1138	1834	--	239	258	239	689	368

	Aug.													
	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Goldsboro	78	88	219	125	103	68	75	70	60	44	15	30	24	34

	July 20-27	July-Aug. 27 - 3	Aug. 3-10	Aug. 10-17	Aug. 17-24
Rocky Mount	2000	2000	1500	1000	500
Kinston	2000	100	25	--	--
Clinton	1000	50	200	100	25
Lewiston	250	50	50	25	50
Reidsville	250	50	50	25	25
Jackson Springs	500	150	50	500	250

Robeson Co.

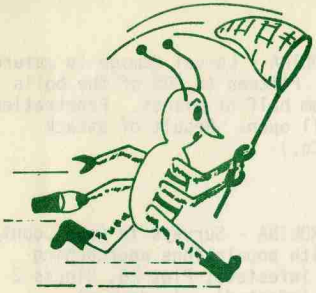
	Aug.										
	8	10	12	15	17	19	22	24	26	29	31
McAllister Farm	1400	384	296	650	1230	935	832	540	625	450	265
Malloy Farm	710	143	203	620	1064	710	965	608	550	505	385

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of Aug. 18-24, 1977	Week of Aug. 25-31, 1977
Man and Animals	--	2
Southern Field Crops	8	--
Grain, Soybeans and Forages	16	6
Forestry, Ornamentals and Turf	17	27
Fruit	2	6
Vegetables	14	5
Wood Destroying Insects	2	1
Household and Industrial Insects	7	4
Miscellaneous & Accidental Household	2	1
Miscellaneous	15	30
	83	82

Dr. Knight

AGRICULTURAL EXTENSION SERVICE



INSECT SURVEY NOTES

entomology

September 9, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TN. H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Moths are emerging from soybeans and other crops over Coastal Plains and Piedmont. Larval counts in Johnston, Edgecombe and Wilson counties indicate some late fields have reached threshold of 2 earworms/ft. of row. Two of ten fields observed had 3 larvae per ft. This generation is usually insignificant to the soybean crop. However, the potential is certainly present this year for damage in fields which have tender foliage and/or blooms. These are primarily the late-planted or very late-maturing fields. I feel that the major earworm problem is over, but this generation has the potential for doing more damage than we usually experience. Growers should be made aware that this problem exists and that continued beat sheet sampling is imperative to achieve optimum timing and efficient utilization of our insecticide supplies. (Hunt, Van Duyn, Ext.)

BEET ARMYWORM (Spodoptera exigua) - NORTH CAROLINA - All stages of larvae were observed 6-9 September on soybeans in Johnston, Edgecombe and Wilson County area. Damage had not reached the 15% defoliation threshold. (Hunt, Ext.)

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - NORTH CAROLINA - Larval numbers appear to be on increase in southern Coastal Plains. Larvae defoliating soybeans in Robeson and Hoke County area. Defoliation on 1 Hoke County field was estimated to be 25%. (Baxley, APHIS)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

COTTON

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Larval damage to mature bolls observed in 6-7 acre Wayne County cotton test plot. Fifteen to 20% of the bolls were infested with heaviest infestation occurring to bottom half of plants. Penetration occurs near bracts and is difficult to see without the boll open. Result of attack appears to be premature opening. (Hawkins, ICI Chemical Co.)

FRASER FIR (CHRISTMAS TREES)

SPRUCE SPIDER MITE (Oligonychus ununguis) - NORTH CAROLINA - Surveys in Ashe County on August 31 and September 7 found the following blocks with populations approaching damage thresholds: Plot 46, Block 1 (16 of 26 trees were infested); Plot 26, Blocks 2 (12 of 16 trees were infested) and 3 (10 of 11 trees were infested). In general conditions seem to be improving due to the fact that many growers have sprayed and the occurrence of several hard rains. (Nettleton, Ent.)

BLACK LIGHT TRAP COLLECTIONS

Corn Earworm, Heliothis zea

	Aug.										Sept.			
Location	10	12	15	17	22	24	26	29	1	2	3	6	7	8
Plymouth	2182	2775	1138	1834	--	239	258	239	689	368	--	2915	244	785

	Aug.								Sept.					
	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7
Goldsboro	15	30	24	34	758	55	71	133	133	133	192	180	65	73	143

FORAGE AND PASTURES

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Infestations remain extremely heavy from mountains to coast in tender sorghum, sudex grasses, road shoulders, fescue pastures, etc. All stages of this insect were observed this week in Wake, Durham, Harnett and Franklin counties. Pastures have been reported from 5 Piedmont counties with 20-30 larvae/sq. ft. of soil surface. Ten acres of late sorghum for silage were observed with 5 larvae per plant. Observations of 15 late sorghum fields from Wake to Macon counties 3 September indicated 100% with fall armyworm damage. Ten of these fields had 70+% infestations. Damage expected from this insect to tender grass (small grain, silage, etc.) until frost. (Hunt, Hodges, Ext.)

LATE BLACK LIGHT TRAP COLLECTIONS NOTE

	Aug. 24	Aug. 26	Aug. 31	Sept. 2	Sept. 6	Sept. 7
Battleboro	750	625	375	425	1500	110
Enfield	150	175	325	380	525	75
Weldon	550	180	350	725	1925	425
Gaston	1050	675	775	800	4450	850
Rich Square	550	250	775	600	1500	410
Scotland Neck	500	465	425	550	2150	300
Robeson Co.						
McAllister Farm	540	625	265	509		1115
Malloy Farm	608	550	385	419		825

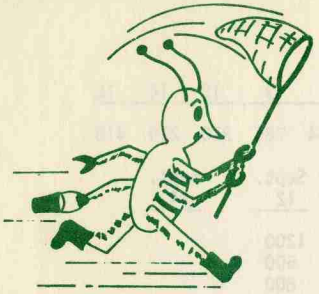
COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of Aug. 25-31, 1977	Week of Sept. 1-7, 1977
Man and Animals	2	--
Southern Field Crops	--	--
Grain, Soybeans and Forages	6	2
Forestry, Ornamentals and Turf	27	25
Fruit	6	6
Vegetables	5	9
Wood Destroying Insects	1	--
Household and Industrial Insects	4	5
Miscellaneous & Accidnetal Household	1	--
Miscellaneous	30	6
	82	53

Dr. Knight

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

September 15, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SOYBEANS

SOYBEAN LOOPER (Pseudoplusia includens) - NORTH CAROLINA - Soybean defoliation to threshold level of 15% foliage loss was observed in 4 Sampson County fields 12-15 September. Beat sheet samples in approximately 60 acres revealed 15-50 larvae per 6 ft. of row. Larvae were present in all instars. Insecticides had been applied with unsatisfactory results. Early detection of this insect greatly increases success of control. (Glover, Hunt, Ext.)

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Damage from the 4th generation of earworms (2nd on soybeans) is occurring in scattered fields over Piedmont and Coastal Plains. Fields observed 12-15 September were late-maturing with tender foliage, and often blooms were still present. Large acreages continue to require earworm control. Reports of earworm damage were received this week from Iredell (175 acres), Edgecombe (30 acres), Wilson (12 acres), and Wake counties (8 acres). All stages of development were observed, which indicates injury is likely to occur for approximately 2 weeks unless controls are applied. (Hunt, Anderson, Ext.)

LAWNS AND PASTURES

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Fall armyworms continue to damage fescue pastures 12-15 September, particularly in Piedmont counties. In addition, damage to lawns in Wake, Orange, and Durham counties has been reported. When detected early, damage has been light; however, late detection has resulted in 50 to 75% of the grass eaten in scattered lawns. Well-established turf will grow out; the roots were not damaged by the armyworms. (Hunt, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

BLACK LIGHT TRAP COLLECTIONS

Corn Earworm, Heliothis zea

Location	17	22	24	26	29	1	2	3	6	7	9	12	14	16
Plymouth	1834	--	239	258	239	689	368	--	2915	244	785	370	215	415

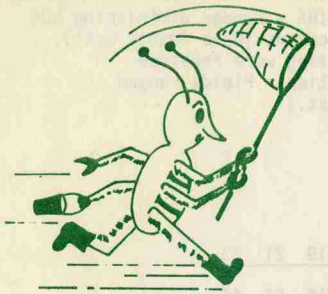
	Sept. 2	Sept. 6	Sept. 7	Sept. 9	Sept. 12	Sept. 14
Battleboro	425	1500	110	110	1200	
Enfield	380	525	75	--	600	
Weldon	725	1925	425	450	800	
Gaston	800	4450	850	400	550	
Rich Square	600	1500	410	500	750	
Scotland Neck	550	2150	300	325	450	
Robeson Co.						
McAllister Farm	509		1115	1070	1120	138
Malloy Farm	419		825	650	865	107

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of Sept. 1-7, 1977	Week of Sept. 8-14, 1977
Man and Animals	--	3
Southern Field Crops	--	1
Grain, Soybeans and Forages	2	8
Forestry, Ornamentals and Turf	25	39
Fruit	6	6
Vegetables	9	8
Wood Destroying Insects	--	--
Household and Industrial Insects	5	5
Miscellaneous & Accidental Household	--	1
Miscellaneous	6	19
	53	90

Dr. Knight

AGRICULTURAL EXTENSION SERVICE



INSECT SURVEY NOTES

entomology

September 23, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Reports and observations indicate severe ear drop in scattered fields of southern Coastal Plains and southern Piedmont. Ten % ear drop and 15-20% stalk lodging were observed in Sampson, Johnston and Richmond counties. Borers and stalk rot combine for this damage and early harvest is imperative to save for grain. Gleaning with hogs or cattle should be considered in some fields. Harvesting losses exceed 35% in some fields. (Hunt, Ext.)

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Infestations appear to be below the 15% threshold level in most late fields. Observations in 15 late-maturing soybean fields in Chatham, Moore, Lee, Randolph and Anson counties revealed levels below threshold in 12 fields. Damage continues in some late Piedmont fields, and scouting for earworms should continue until no small larvae are present. Weekly observations should be made for defoliators until pod fill. (Hunt, Ext.)

SOYBEAN LOOPER (Pseudoplusia includens) - NORTH CAROLINA - Localized field and spot infestations of loopers continue over Coastal Plains. Reports received this week of spot infestations in Johnston, Craven, Harnett counties, and Washington-Martin County area. Largest infestation reported was 10 acres. (Hunt, Pleasants, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

LAWNS AND PASTURES

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Damage diminishing but reports continue from scattered lawns and fields over Piedmont (Wake County west). Reports of damaged small grain for cover crop and/or grazing were received 19-22 Sept. from Rowan, Iredell, Surry and Alamance counties. Fields ranged from 1-15 acres in size and totaled 150 acres. (Hunt, Ext.)

BLACK LIGHT TRAP COLLECTIONS

Corn Earworm, Heliothis zea

Location	Sept. 1	2	3	6	7	9	12	14	16	19	21	23
Plymouth	689	368	--	2915	244	785	370	215	415	219	57	46

	Sept. 9	Sept. 12	Sept. 14	Sept. 16	Sept. 19	Sept. 21
Battleboro	110	1200	50	200		
Enfield	--	600	25	--		
Weldon	450	800	80	275		
Gaston	400	550	110	210		
Rich Square	500	750				
Scotland Neck	325	450	165	225		
Robeson Co.						
McAllister Farm	1070	1200	138	325	728	115
Malloy Farm	650	865	107	165	110	132

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of Sept. 8-14, 1977	Week of Sept. 15-21, 1977
Man and Animals	3	--
Southern Field Crops	1	2
Grain, Soybeans and Forages	8	10
Forestry, Ornamentals and Turf	39	37
Fruit	6	2
Vegetables	8	6
Wood Destroying Insects	--	4
Household and Industrial Insects	5	12
Miscellaneous & Accidental Household	1	6
Miscellaneous	19	11
	90	90

Dr. Knight

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AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

September 30, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

CORN

EUROPEAN CORN BORER (Ostrinia nubilalis) and FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Ear drop resulting from shank damage appears severe in scattered Piedmont, western and southern coastal counties. Counts in Burke and Wake counties plus reports from 8 Piedmont and Coastal Plains fields indicate that shank damage of 25-40% is common. Ear drop in excess of 10% has been observed in scattered fields. Early harvest will greatly reduce loss. (Miller, Hunt, Ext.)

SOYBEANS

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Injury levels below threshold in all late soybeans sampled. Only scattered, subeconomic infestations observed in 20 late fields sampled in Chatham, Iredell, Rowan, Davidson and Davie counties. Economic damage from earworms is over for 95% of North Carolina's 1977 soybean crop. (Hunt, Ext.)

FORAGES

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Approximately 275 acres of small grains for grazing were reported destroyed 26-29 September in the Piedmont

counties of Rowan, Iredell, Davidson, Alamance, Franklin and Davie. Damaged fields ranged from 3-25 acres. (Bradley, Ent. Dept.; Hunt, Ext.)

SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda)-NORTH CAROLINA-Damage severe on early-planted small grains in Piedmont and Mountains. Approximately 500 acres have been reported damaged 22-29 September. This year farmers would be well advised to plant during latter half of the recommended dates. (Hunt, Ext.)

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of Sept. 15-21, 1977	Week of Sept. 22-28, 1977
Man and Animals	--	6
Southern Field Crops	2	--
Grain, Soybeans and Forages	10	--
Forestry, Ornamentals and Turf	37	28
Fruit	2	2
Vegetables	6	9
Wood Destroying Insects	4	2
Household and Industrial Insects	12	7
Miscellaneous & Accidental Household	6	3
Miscellaneous	11	17
	90	74

Dr. Knight

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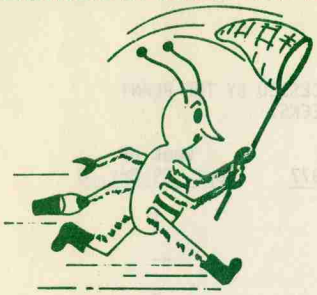
AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

October 7, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist THH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SMALL GRAIN COVER CROPS

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Larval damage continues to be reported from Coastal Plains and Piedmont. Observations this week revealed 10+ acres each heavily defoliated in Edgecombe, Johnston, Wake, and Durham counties. Larval counts to 15 per square foot of soil surface are common. Cool weather will slow down feeding, but damage is likely until hard frost. (Hunt, Sweeting, Ext.)

This will be the last regular report of the season for the general mailing list. I hope that this report has been of value in keeping you up to date with the insect situation for this year. Let's hope that the worm year of 1977 will be remembered; forbid a repeat.

Your reports and continued interest which I have received this year are the ingredients which are so important to the success of this endeavor. Thanks and I am looking forward to working with each of you in the future.

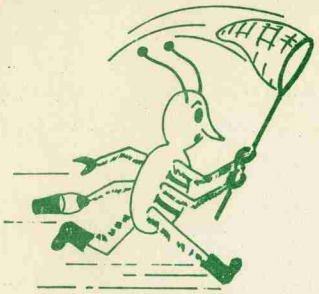
COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

COMPARISON SUMMARY OF NUMBER OF INSECT SPECIMENS PROCESSED BY THE PLANT DISEASE AND INSECT CLINIC, NCSU, FOR PRECEDING TWO WEEKS.

	Week of Sept. 22-28, 1977	Week of Sept. 29-Oct. 5
Man and Animals	6	1
Southern Field Crops	--	--
Grain, Soybeans and Forages	--	7
Forestry, Ornamentals and Turf	28	26
Fruit	2	1
Vegetables	9	6
Wood-Destroying Insects	2	--
Household and Industrial Insects	7	9
Miscellaneous & Accidental Household	3	6
Miscellaneous	17	7
	74	63

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



entomology

October 14, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist THH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

Raleigh, North Carolina

SMALL GRAIN

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Damage reports this week from small grain plantings revealed approximately 1,000 acres completely defoliated. Infestations ranged from 1/4-acre spots to 15 acres destroyed. Infestations appear heaviest and most numerous in central and northern Piedmont. (Hunt, Ext.)

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

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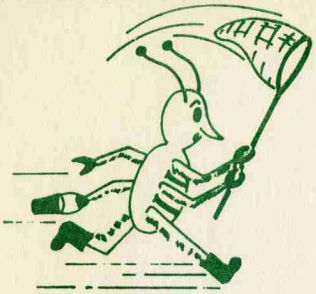

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October 21, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist J.N.H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

FORAGE AND COVER CROPS

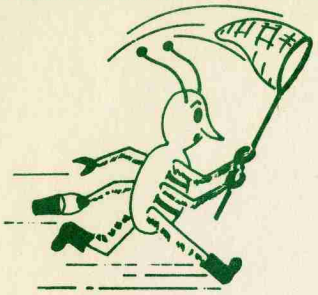
FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Damage reports continue despite light frost in western Coastal Plains and Piedmont. Third - fifth instar larvae damage reported from 500+ acres of rye oats and barley in 10 Coastal Plains and Piedmont counties 17-21 October. Reports were received from Chatham, Wake, Harnett, Lee, Alamance, Stanly, Johnston, Warren, Granville, and Franklin counties. No oviposition is expected during the remainder of 1977. (Hunt, Ext.)

SMALL GRAIN

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Early planted small grains continue to receive damage 17-21 October. Injury totals an estimated 2,000 acres and ranges from 1/4-acre spots to 30 acres destroyed and replanted. Area of heaviest infestation appears to be in Piedmont, since planting is 2-3 weeks earlier than in Coastal Plains. No oviposition is expected during the remainder of 1977. (Hunt, Ext.)

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES



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October 28, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T.N.H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SMALL GRAIN

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Larval damage continues in scattered spots over the Piedmont, but observation and reports are subsiding. Only 5 counties reported economic injury from this insect 25-28 October. Egg laying and subsequent larval damage very unlikely for remainder of 1977. Risk of damage from established larvae will continue to decrease for this year. (Hunt, Ext.)

HOUSEHOLDS AND BUILDINGS

BOXELDER BUG (Leptocoris trivittatus) - NORTH CAROLINA - Inquiries concerning large numbers of adults in buildings began 17-21 October. This is an annual occurrence which often occurs after the first frost. Frost occurred in Piedmont and spots in Coastal Plain 17 October. Requests for information concerning these insects appear about average (3-5 contacts per week). (Hunt, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

entomology

November 4, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

FOREST AND SHADE

AN OAK SAWFLY (Caliroa quercuscoccineae) - NORTH CAROLINA - Results of a late summer aerial survey reveal an increase in defoliated acreage from 1976. Infestation is most intense in an area 2 by 4 miles along Cane River, northwest of Burnsville in Yancey County. (N. C. Forest Service).

BOXELDER BUGS (Leptocoris trivittatus) - NORTH CAROLINA - Requests for identification and inquiries increased October 10 - November 3 approximately three-fold from 1977. The insect identification clinic has responded to approximately 10 identification requests per week during this period. (Stephan, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

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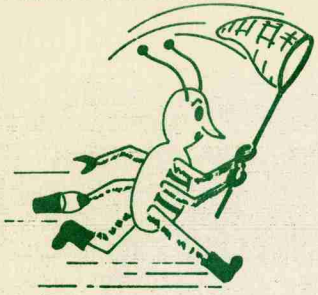


INSECT SURVEY NOTES

entomology

November 12, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist THH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

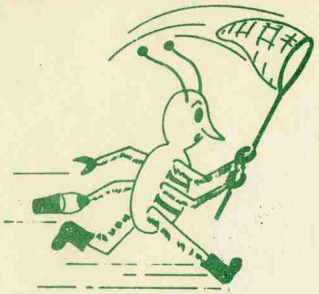
This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SMALL GRAIN

FALL ARMYWORM (Spodoptera frugiperda) - NORTH CAROLINA - Very light damage continued 7-10 November in scattered Piedmont rye and wheat fields. Feeding activity occurred only during warmest periods of the day. Should the cold weather predicted for November 11 materialize, the possibility for economic loss will be removed. (Hunt, Spencer, Ext.)

AGRICULTURAL EXTENSION SERVICE



INSECT SURVEY NOTES

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November 18, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SMALL GRAIN

ENGLISH GRAIN APHID (Macrosiphum avenae) - NORTH CAROLINA - Observations in Wake and Durham counties revealed light infestations (less than 1 per sweep) in the 10 wheat and 8 rye fields sampled. Growth appeared good in 25 fields observed with no yellow dwarf disease apparent. (Hunt, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

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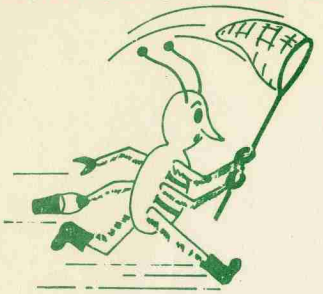

INSECT SURVEY NOTES

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December 2, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist TNH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SMALL GRAIN

ENGLISH GRAIN APHID (Macrosiphum avenae) - NORTH CAROLINA - Spot infestations of 5 aphids per sweep were reported 28 November - 1 December in northern Piedmont rye and wheat fields. General infestation light. Very little yellow dwarf disease has been observed to date. (Hunt, Ext.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

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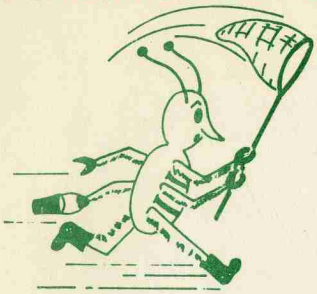
INSECT SURVEY NOTES



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December 9, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist T.N.H.

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, Nroth Carolina

FOREST AND SHADE

GYPSY MOTH (Porthetria dispar) - NORTH CAROLINA - The final count from sex lure traps was 18 male gypsy moths trapped from 13 locations. Eleven were collected in northeastern counties near Elizabeth City, 1 in Halifax County, 1 in Carteret County, 2 in Guilford County, 1 in Davie County, 1 in Avery County and 1 in Haywood County. (Forest Pest Newsletter, N. C. Forest Serv.)

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, NORTH CAROLINA STATE UNIVERSITY AT RALEIGH, 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

AGRICULTURAL EXTENSION SERVICE

INSECT SURVEY NOTES

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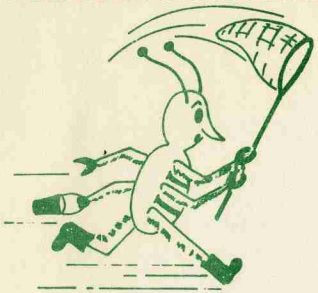

December 16, 1977

TO: County Extension Chairmen and Other Interested Persons

FROM: Thomas N. Hunt, Survey Entomologist THH

SUBJECT: Insect Survey Report

NORTH CAROLINA COOPERATIVE ECONOMIC INSECT SURVEY AND DETECTION REPORT

This report is compiled by: Thomas N. Hunt, Survey Entomologist

Raleigh, North Carolina

SOYBEANS

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Reports received from central and southern Coastal Plains of numerous European corn borer larvae in soybean combine hoppers. Estimates to 1 per bushel have been reported. Larvae likely coming from infested weeds in field; no damage will result. (Hunt, Ext.)