

Georgia Entomological Society Arthropod Survey

2023

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CONTENTS

Commodity	Page
Apple.....	1
Blueberry.....	1
Corn	2
Cotton	3
Forest: No report submitted.....	4
Livestock, Poultry, and Pets.....	4
Peach	7
Peanut.....	8
Pecan	8
Sorghum.....	9
Soybean	9
Turfgrass	9
Urban and Structural: No report submitted	9
Vegetables: No report submitted	10
Wheat	10

Contributors: Mark Abney (peanut), Apurba Barman (pecan), Brett Blaauw (apple, peach), David Buntin (field corn, sorghum, wheat), Nancy Hinkle (livestock, poultry and pets), William Hudson (pecan), Shimat Joseph (turfgrass), Phillip Roberts (cotton, soybean), Ash Sial (blueberry)

Apple

Apple insect and mite IPM in GA remains quite stable. In most GA apple orchards insecticide applications timed by temperature-driven developmental models continue provide excellent control of codling moth (*Cydia pomonella*) and Oriental fruit moth (*Grapholita molesta*), our key fruit feeding lepidopterans. Unfortunately, significant GA apple acreage exhibits signs of resistance to phosmet (Imidan) and methoxyfenozide (Intrepid). Fortunately, orchards experiencing declining insecticide performance continue to get good to excellent codling moth and Oriental fruit moth control with pheromonal mating disruption.

Brown marmorated stink bug (*Halyomorpha halys*) is readily observed in GA's mountain counties. Population numbers have tapered off over the past couple of years, but the insect is still commonly found in landscapes surrounding orchards. Fortunately, to date there has only been marginal issues due to BMSB in North GA apple and peach production.

Woolly apple aphid (*Eriosoma lanigerum*) is generally well managed throughout the apple industry. Beneficial insect monitoring has revealed that predaceous hoverfly species are commonly found in GA apple orchards throughout the season. In addition, with lacewing larvae and the aphid parasitoid, *Aphelinus mali* (Haldeman), most orchards did not need to be treated for aphids in 2023. However, there were a few isolated areas in North GA that had outbreaks in 2023, but those were cleared up with targeted insecticide applications.

A complex of ambrosia beetles (subfamily Scolytinae) has been associated with rapid apple decline, and has been observed in surrounding states, such as North Carolina. These small beetles excavate tunnels in stressed trees and inoculate the bored-out galleries with a fungus. The resulting injury, fungal infection, and secondary infections can rapidly kill trees. We have continuously monitored ambrosia beetles and tree injury since 2020 to better understand the incidence of this pest. Several species of ambrosia beetles and bark beetles have continued to be recorded, with the black stem borer (*Xylosandrus germanus*) the most abundant species. However, there were no reports of major ambrosia beetle attacks or losses of trees due to rapid apple decline in North GA during 2023.

Blueberry

Spotted-wing drosophila (SWD) remains the key pest of blueberries in Georgia. SWD populations were lower early in the season, but they built up as the harvest season progressed. Most of the growers followed management programs developed by the UGA Blueberry Entomology program and didn't experience any issues related to SWD infestation in their fruit during the earlier part of the harvest. As the season progressed, SWD populations built up. The increase in SWD population densities combined with several rain events during the harvest lead to several growers reporting SWD infestations. Several growers who failed to implement UGA recommended season-long SWD management programs couldn't harvest the second half of the blueberry crop during 2023 due to high SWD infestations. Consequently, crop losses due to SWD infestations were high. To improve biological control of SWD, after 10 years of sustained efforts, the national SWD SCRI project team members were able get permits to release the exotic parasitoid, *Ganaspis brasiliensis*. We have started field releases in GA. Thus far, we have

released over 15,000 exotic parasitoids, *G. brasiliensis*, and will continue to release more parasitoids as they become available with the long-term goal of getting them established in blueberry production systems in Georgia. Overall, SWD management costs ranged from \$100-150 per acre.

Secondary pest problems were on the rise. During 2023, gall midge and flower thrips populations were reported by several growers. Other pests reported in the 2023 field season included scales, mealybugs, and bud mites. Whiteflies were also reported and seem to occur at more farms and at higher population densities than ever before. During the 2023 field season, growers again reported a rather unique issue where in some fields a large proportion of berries remained at the pink stage for several weeks and didn't ripen, and consequently farmers were not able to harvest those fields. Blueberry growers were very concerned about this issue. All members of the UGA Blueberry Team including the entomologist, plant pathologist, and horticulturist joined forces to address grower concerns related to this issue. No direct correlation with insect infestation was found. Samples were analyzed for various nutrients and pathogens, and data are still being analyzed to determine the cause.

During the 2023 field season, a new invasive pest, chilli thrips (*Scirtothrips dorsalis* Hood) was confirmed in eight (8) counties in South Georgia and is likely to expand its range even further in the future. Over the past couple of years, chilli thrips have caused serious problems in Florida blueberries where farmers had to spray 9-12 times to control them. While the economic impact of chilli thrips in Georgia blueberries remains to be determined, we plan to continue to monitor chilli thrips populations in collaborations with UGA County Extension Agents and update blueberry growers on the distribution and economic impact of the insect. Other insect pests reported during 2023 included cherry fruit-worm, cranberry fruit-worm, leafhoppers, whiteflies, flat headed borers, blueberry leaf beetles, and slugs. Statewide, a significant proportion of the blueberry acreage was treated with 1-3 insecticide applications to control these secondary insect pests.

Corn

Corn acreage in Georgia was 485,000 acres planted and 440,000 acres harvested which was higher than in 2022. Growing conditions generally were cooler and wet to start but hot and dry in June during pollination which reduced grain yields. Average grain yield was 174 bushel/acre, which was about the same as the year before, but many irrigated fields yielded 250 or more bu/acre. The average corn grain price received was \$5.75 per bushel which was lower than in 2022. An additional 30,000 acres were harvested as silage with a yield of 20 tons per acre. All corn seed is treated with a neonicotinoid insecticide (mostly clothianidin or thiamethoxam), so soil insect damage was minimal. Stink bugs are the most important foliar pest of corn. Stink bug infestations were moderate to high in most areas, but preventive sprays of pyrethroid insecticides were still widely used. Fall armyworm had a major outbreak in 2021 later in the season, but infestations were low in on-time planted corn in 2023. All commercially available Bt corn products are still effective in preventing fall armyworm whorl infestations. Bt products also continue to provide good control of stalk borers. Corn earworm infestations were low to moderate in on-time planted corn but increased to damaging levels in late-planted corn. Bt

corn adoption is about 90% in the state. Cost of Bt technology was about \$16 to \$28 per acre depending on trait package. Significantly more ear/kernel damage by corn earworm was observed in Bt corn with older products with Cry type Bt toxins than a few years earlier suggesting that field-evolved resistance is occurring to Cry Bt toxins in Georgia. Studies in 2021 indicate resistance in corn earworm populations to the Cry1A and Cry1A.105 genes is now widespread in the southern U.S. The Vip3Aa Bt trait in pyramided Bt products was still highly effective against corn earworm.

Cotton

2023 was a good year overall for cotton producers. Timely rains during the growing season and good harvest weather in the fall allowed cotton growers to harvest the third highest yield per acre on record. Cotton was harvested on 1.1 million acres with an average yield of 982 lbs. lint per acre. Average insecticide applications were 2.86 per acre, average yield loss due to insects was 3.1 percent, and the total costs associated with insect pests (losses plus control costs) totaled \$108.64 per acre.

Thrips infestations were generally higher on April planted cotton compared with May and June planting dates. Most acres received an at-plant insecticide; however, 20 percent of the acres received a supplemental foliar application. Yield loss from thrips was minimal.

Tarnished plant bugs infested 75 percent of Georgia cotton, and 39 percent of the acres were treated for this pest. We continue to see a disturbing trend for increased numbers of tarnished plant bugs in cotton. This is the highest percentage of Georgia cotton acres treated for tarnished plant bugs in modern history, and cost of control and yield loss attributed to tarnished plant bugs exceeded \$17 million. Clouded plant bugs infested 30 percent of the acres and were treated on about 2 percent of the acres. Plant bugs tended to be more of a problem on early planted cotton, especially in central and southwest Georgia. However, growers in east Georgia also exceeded threshold for this pest. Good moisture conditions during May and June may have contributed to above average plant bug populations (environmental conditions were similar in 2021 and 2023, and we had high plant bug infestations). Spider mites infested 50 percent of acres and 10 percent of acres were treated. Increased infestations and treatment of spider mites are likely associated with increased plant bug sprays which disrupt natural controls. Although cotton aphid infests most acres each year, this sucking pest rarely causes economic loss. Nevertheless, growers treated 8 percent of acres for cotton aphid. Since the initial detection of Cotton leafroll dwarf virus (CLRDV) in Georgia during 2018, this virus which is vectored by cotton aphid has been observed in all cotton production regions in Georgia. CLRDV infections were less common in 2023 compared with previous years, and little if any yield loss occurred.

Over 99 percent of cotton planted in Georgia is Bt cotton. The industry continues to transition to 3-gene Bt cottons which were planted on 82 percent of the acres. This transition needs to continue since laboratory bioassays suggest high levels of resistance to Cry1Ac (the first Bt trait introduced in 1996) and decreased susceptibility to the second trait Cry2Ab. The third Bt trait, Vip3A continues to be very active on CEW. In spite of these concerns, only 10 percent of the 2-

gene Bt cotton acreage was treated for corn earworm. Stink bugs continue to be the most common insect requiring treatment. Approximately 85 percent of acres were treated for stink bugs. Cost of control and yield loss attributed to stink bugs exceeded \$46 million.

Winter and early spring temperatures were above average which favors silverleaf whitefly (SLWF) survival and reproduction. Fortunately, abundant rainfall during May and June suppressed SLWF populations resulting in only 40 percent of the acreage infested and 12 percent of the acreage treated for SLWF.

Forest: No report submitted

Livestock, Poultry, and Pets

Among Georgia's Top 10 agricultural commodities, three are animal agriculture – broilers (#1), egg-laying hens (#3), and beef cattle (#6). Combined, the farm gate value of these three commodities totals over half the state's entire agricultural farm gate income, illustrating the significance of animal agriculture in the state.

Beef Cattle

Beef ranks 6th in the Top Ten Georgia commodities, and Georgia ranks 20th nationally in cattle production, with over a half million cows on pasture annually, amounting to a farm gate value of over \$663 million. Horn flies (*Haematobia irritans*) are the main pest of pastured cattle, causing cattle irritation and aggravation by their blood-feeding habit. More significantly, the cow's avoidance behaviors disrupt calf nursing, meaning calf weaning weights may be reduced by 18 pounds per calf compared with calves on mother cows with good horn fly control. Due to recent mild winters, cattlemen in South Georgia have had horn flies on their animals continuously, with some treating for flies as early as February. Statewide, annual losses to horn flies on Georgia cow-calf operations were over **\$15.4 million**. Horn fly suppression is dependent on insecticides, although widespread insecticide resistance means there are few options that effectively reduce horn fly numbers for more than a few days. Stable flies, another bloodsucking fly attacking cattle, account for over **\$15 million** in losses for Georgia cattle herds. To control horn flies and stable flies (as well as other ectoparasites such as face flies, lice, etc.), Georgia cattlemen invest ca. **\$6.1 million** annually.

While the Asian Longhorned Tick (*Haemaphysalis longicornis*) was first reported in Georgia in September 2021, on a cow-calf operation in Pickens County, spread has been slower than anticipated, with only four counties (Hall, Habersham, and White added to Pickens) confirmed. Because it transmits the causative agent of theileriosis in cattle (with 5% of infected animals dying, and currently no preventative and no treatment), this new invasive may significantly impact how pest suppression is practiced on Georgia livestock.

Broilers

Georgia continues to be the nation's number 1 broiler producing state. Broilers rank at the top of Georgia's agricultural commodities, accounting for farm gate value of \$18.3 billion annually, or 42.3% of the state's farm gate value.

Worldwide, darkling beetles (*Alphitobius diaperinus*), whose larvae are known as lesser mealworms, are the primary pest of broiler production. These insects burrow into insulation to pupate, damaging facilities and lowering insulative capacity. Costs of heating during winter and cooling houses in summer significantly increase production costs, and chickens eat more in cold weather to maintain body heat. When litter is removed and applied to pastures or fields as soil amendment, beetles are distributed and may migrate to nearby homes, creating neighborhood friction. Lesser mealworms feed on dead birds and feces, thereby acquiring numerous pathogens which they can transfer to uninfected birds when consumed. They also maintain Salmonella in their guts during pupation, so that newly emerged adult beetles are infectious to chickens. Chickens are predators and prone to eating insects; filling their digestive tracts with indigestible beetles prevents their consuming nutritious feed and gaining weight, as meat birds are intended to do. *Alphitobius* populations worldwide have been shown resistant to most of the pesticides registered for their suppression, so management strategies are extremely limited. Suppression efforts have some effect on beetle numbers, but there are no tactics that significantly reduce beetle populations.

All 13,000 Georgia broiler houses are infested with darkling beetles, and broiler producers spend approximately **\$12.5 million** annually for *Alphitobius* suppression, and statewide losses to the beetles are estimated at **\$4.9 million** annually. The resulting total, ca. **\$17.4 million** annually, probably vastly underestimates the impact of this pest in the state. Again, even the most conscientious and strategic intervention is ineffective at suppressing *Alphitobius* beetles with current products and technology.

Caged Layers

Table eggs are Georgia's third most lucrative commodity, with an annual value to the state of over \$960 million (ranking Georgia 6th nationally). The principal pest in caged layer houses is the house fly (*Musca domestica*), which causes spotting of eggs, degradation of equipment through fecal contamination, and neighborhood aggravation when flies migrate away from the poultry farm to nearby residences. Because of suitable conditions inside layer houses, house flies can be a year-round problem. Producers use manure and water management, trapping, biological control (fly parasitoids and predators), and various pesticides to suppress house flies around caged layer operations. Worldwide, house flies have been shown resistant to most insecticides, so control is seldom adequate. Losses due to flies combined with costs of management are estimated to total over **\$8.1 million** annually.

Bed bugs have recently become a major threat in poultry houses, primarily through transferal from human dwellings. All the challenges that accompany bed bug control in urban entomology (paucity of available suppression options, insecticide resistance, lack of information on basic pest ecology and ethology, etc.) impact their pest status in poultry, as well. Confined birds make excellent bed bug hosts, and workers take the bugs home with them to infest their homes and also bring bed bugs with them to the workplace. With this infinite source, getting a handle on bed bugs in poultry is virtually impossible. There are no effective insecticides registered for use while birds are in the house; bed bugs typically secrete themselves in inaccessible crevices once birds are removed, so are not contacted by insecticide applications during down times;

and residuals rarely persist long enough to affect bed bugs once the house is repopulated. No economic estimates have yet been attempted.

Northern fowl mites (*Ornithonyssus sylviarum*) are the second most significant pest in layer flocks. These mites are bloodsuckers that spend their entire life cycle on the chicken host, causing itching, scabbing, anemia, and general bird discomfort and lack of thriftiness. Workers bothered by mites moving to them, biting and crawling, can be so alarmed that they refuse to work in such conditions. Losses due to reduced feed conversion efficiency and reduced egg production are estimated at **\$1.9 million** annually, while suppression costs (primarily acaricides) are about **\$1.8 million** per year, totaling **\$3.7 million** statewide annually.

Dairy

Georgia's 112 dairy farms currently house over 81,000 dairy cows. Dairy cattle are affected by the same pests that plague beef herds, and stress from ectoparasites can compromise cow health and milk production. Stable flies are more severe on dairy animals, both because there is more larval habitat (spilled feed, decaying hay, etc.) on dairy properties than on pasture and because milk cows are more severely impacted by stable fly feeding than are beef animals. Milk cows are more susceptible to mastitis (caused by *Staphylococcus* associated with horn flies and stable flies). Stable fly feeding interrupts cow feeding; host avoidance behaviors raise animal temperatures and waste energy. House fly emigration from dairies creates neighborhood ill will, so house fly suppression becomes a priority, even though this species has minimal direct impact on the animals. While dairy losses are difficult to assess, combined lost production and costs of control are estimated at about **\$500,000** per year.

Pets

Approximately 2.7 million Georgia households have dogs and/or cats. The three major arthropod pests affecting pets are fleas, ticks, and mosquitoes. Because fleas transmit tapeworms, ticks transmit pathogens such as *Ehrlichia*, and mosquitoes carry heartworm, pest suppression is essential for disease prevention and to maintain pet health. Recent advances in ectoparasite control have yielded flea and tick control products with enhanced efficacy and concomitant premium prices. In Georgia, expenditures for ectoparasite control on dogs and cats amount to over **\$135 million** annually. Treatment for mosquito-vectored dog heartworm costs pet-owners over \$1.6 million annually, not including treatment for patent infections and ancillary sequelae. The aforementioned Asian Longhorned Tick will also infest dogs, cats, horses, and other companion animals, greatly affecting how ectoparasites are suppressed.

Future

Arthropods have been demonstrated capable of transmitting Asian Influenza Virus, and the recent discovery of Highly-Pathogenic Avian Influenza (HPAI) infecting dairy cattle in Texas, Kansas, and New Mexico has heightened alarm about inter-species transfer of HPAI. These concerns likely will lead to more intensive efforts to suppress flies and other potential vectors in animal agriculture.

Alpha Gal Syndrome or Tick Bite-Induced Red Meat Allergy, while not demonstrated to affect non-human animals, is growing in prevalence. Because animals (including wildlife) are integral to the associated tick's (*Amblyomma americanum*) life cycle, likely implications and consequences will increase concern in short order. Nothing good ever comes from a tick bite. Currently populations of the exotic invasive Asian Longhorned Tick (*Haemaphysalis longicornis*) have been documented in 17 states, with it being found in Georgia (Pickens, Habersham, Hall, and White counties). Unfortunately the Asian Longhorned Tick prefers cattle (although it has an extensive list of acceptable hosts including most mammals and numerous avians), so it likely will significantly impact Georgia beef production as its range expands. Impacts on dairy, horses, small ungulates, pets, and other animals have not been estimated. The Asian Longhorned Tick has one feature that makes it particularly successful; it is parthenogenetic (meaning female ticks can produce viable eggs without mating), and each individual is able to lay up to 2,000 eggs, leading to rapid population increases (and may hasten acaricide resistance).

Peach

Pest pressure from fruit-attacking insect pests, such as Oriental fruit moth (*Grapholita molesta*), plum curculio (*Conotrachelus nenuphar*), assorted stink bugs, and green June beetles in peach orchards across GA was minimal in 2023. This is largely due to disastrous crop loss. As a result of a warm winter, the crop bloomed considerably earlier than in previous years. Then a pair of back-to-back freezes in March killed most of the developing fruit and any remaining flowers. As such, the peach industry in GA lost nearly 90% of the crop in 2023.

While fruit attacking pests were minimal in 2023 following the loss of their primary hosts, premature tree decline associated lesser peachtree borer and peachtree borer continued to cause serious problems in 2023, the first full season since the ban of chlorpyrifos. Cover sprays with pyrethroids during the season do little to control/suppress these key tree pests. Peachtree borer (*Synanthedon exitiosa*) infestations continue to worsen. Peachtree borer populations (univoltine) are showing the same upward population trends previously seen with the multivoltine lesser peachtree borer (*Synanthedon pictipes*). Mating disruption utilizing the female sex pheromone of peachtree borer and lesser peachtree borer is now an effective management strategy in the Southeast with the Southeastern-formulated mating disruption pheromone, Isomate-LPTB Plus. However, adoption of mating disruption in Georgia peach production waned in 2021 and remained low in 2023. As such, reported injury from peachtree borer and lesser peachtree borer was higher in many orchards than in previous years.

Scale insects, particularly San Jose scale (*Comstockaspis perniciosus*), have become a perennial problem for peach production in middle Georgia, however in 2022 and 2023 populations were significantly reduced compared to recent years. Growers that applied two dormant oil applications at higher volumes, 150-175 gal/acre, and included an insect growth regulator, such as pyriproxyfen, experienced excellent management. Similarly, the newly labeled use of bifenthrin in peaches seems to have helped by targeting peak crawler periods. Very few crawlers were collected via monitoring traps, and no fruit was observed to be damaged. However, with the mild winter of the 2023-2024 season, the low San Jose scale population has

the potential to thrive, so if the low numbers go unchecked, by the end of the season we may have another bad scale year.

The invasive brown marmorated stink bug (*Halyomorpha halys*) continues to be observed in considerable numbers in Fort Valley, the key peach growing region of GA, but population numbers continue to be highest post-harvest. There have been no reported crop loss/injury due to this pest.

Peanut

Peanut was planted on 775,000 acres in 2023 with an average state-wide yield of 4,070 pounds per acre. Average yield was the second lowest since 2013. The cultivar GA-06G was planted on over 80% of the state's acres. The 2023 growing season got off to a slow start with cool, wet conditions in early May that delayed planting and slowed seedling emergence and growth. Thrips pressure varied by location and planting date from light to moderately heavy. The average statewide incidence of Tomato Spotted Wilt Disease determined by field surveys conducted by UGA county agents was 11.71%. Lesser cornstalk borer (LCB) was surprisingly abundant early in the season given the cool, wet conditions; most fields where LCB thresholds were exceeded were treated with either chlorantraniliprole or novaluron with good results. A UGA grower survey conducted at harvest showed that 27.6% of surveyed acres were treated for LCB in 2023. Hot, dry conditions were common in July and August, and these conditions further delayed crop development. Irrigated fields in areas with historically high rootworm pressure continued to be affected by banded cucumber beetle and to a lesser extent by southern corn rootworm. No effective management tool for rootworm in peanut was available in 2023, and yield loss in infested fields was estimated to range between 250 and 1000 pounds per acre. Foliage feeding caterpillars were present at levels consistent with previous years, though velvetbean caterpillar populations were generally higher and infestations continued later into the season than what is typical. A cool, dry harvest season resulted in additional delayed maturity and contributed to lower than expected grades for harvested peanut.

Pecan

Overall, 2023 was a light year for most pecan insects. Frequent rain events in June did not help the establishment of aphid populations early on, and as a result, both yellow and black pecan aphid pressure was lower than average. Black pecan aphids were low throughout the state, except in some areas in the southwestern part of the pecan growing region. Population pressure of the two early season caterpillar pests, bud moth and pecan nut casebearer, was also low, and growers made applications in most cases targeting these two insect pests. Phylloxera pressure was higher than average, which might have led to the increased population of hickory shuckworms. Heavy infestation of pecan leafminers was observed in a few pecan orchards, mostly limited to the southwestern part of the state, which made the growers take control measures for this pest. A number of pecan growers reported the loss of young trees to ambrosia beetle attack, but the overall incidence level appears to be low owing to active trapping and protective application of pyrethroid insecticides in young trees. Pecan leaf scorch mites were heavy in some orchards but were not widespread. It is estimated that less than 1% of pecan acreage received applications for mites.

Sorghum

Sorghum yield estimates in 2023 were not available at the time of this writing. Sorghum acreage was about 30,000 acres for grain production and 12,000 acres for forage/silage production. Grain yield probably averaged about 50 bushel/acre. Price received also is not available for 2023 but was probably similar to corn at about \$6.00 per bushel. Acreage was stable as compared to a few years ago but continues to be limited by low commodity prices and cost of controlling the sorghum aphid (SA). Anthracnose disease also was damaging in 2022. SA infestations were first detected in late May in southern GA and throughout the state by the end of June. Like 2022, SA infestations were not severe in most fields, although some fields of susceptible hybrids were sprayed for control. Lower SA infestations and damage may be due in part to weather conditions and increased prevalence of natural mortality factors. An increasing number of grain-type hybrids are available with good levels of plant resistance to SA, while silage type hybrids remain mostly susceptible to SA. Control of SA in silage and forage sorghum is problematic. Virtually all grain sorghum hybrids were pretreated with neonicotinoid insecticides (clothianidin, thiamethoxam or imidacloprid) which provided good control for SA for 30-35 days after planting. Sivanto prime and Transform WG are registered and effective for SA control. Estimated cost of insecticide application for SA control was about \$15 to \$20 per acre. Sorghum midge infestations were absent or very low. Some later planted fields were treated for fall armyworm in the whorl or headworms (fall armyworm, corn earworm and/or sorghum webworm) on the grain heads. Loss of chlorpyrifos means late planting of sorghum in hot, dry conditions is at greater risk of damage by lesser cornstalk borer. About 110 acres of sweet sorghum is grown in Georgia for syrup production with a retail value of about \$5,000 per acre. Sivanto prime is now labeled for use on sweet sorghum for syrup production and was used on nearly all acres which prevented severe damage by SA in sweet sorghum fields in 2023.

Soybean

Insect pest problems in soybean were relatively minor during 2023 but higher than recent years. Soybeans were harvested from 155,000 acres with an average yield of 43 bushels per acre. Velvetbean caterpillar, stink bugs, soybean looper, and kudzu bugs were the most common pests treated; 60, 50, 30, and 3 percent of acres treated respectfully. Average insecticide applications per acre was 1.6, yield loss was 4.97 percent, and the total costs associated with insect pests (losses plus control costs) were \$48.24 per acre.

Turfgrass

In 2023, there weren't any major outbreaks of arthropod pests on turfgrass in Georgia. Bermudagrass mite, white grubs, and chinch bug were reported from various parts of the state. The bermudagrass mite issue was noticed in early summer and soon became less problematic through the growing season. White grub-related problems were mostly during spring and fall when vertebrates, such as armadillos, dug holes in lawns. The best management timing for white grubs is from June to July when young larvae are found in the upper soil profile. Chinch bug problems were mostly noticed in St. Augustinegrass, especially during drought events.

Urban and Structural: No report submitted

Vegetables: No report submitted

Wheat

Planted wheat acreage in 2023 was about 195,000 acres with about 85,000 acres harvested for grain. The amount of acreage was a little less than the previous year and remained low by historical standards. Average statewide yield was 55 bu/acre at \$5.75/bu. However, some farmers harvested 80-100 bu/acre under a high-input system. Resistant varieties continue to be the main line of defense against the Hessian fly. There was a substantial outbreak of Hessian fly in late winter and spring of 2023 across most of the coastal plain region. Susceptible varieties and some previously resistant varieties had extensive damage and yield loss. Hessian fly ratings showed that some varieties that were previously resistant are now susceptible indicating a shift in fly virulence to older sources of plant resistance. Infestations and damage were moderate in northern Georgia. Aphids and barley/cereal yellow dwarf disease levels were generally low to moderate in the coastal plain region but caused some damage in northern Georgia. Cereal leaf beetle infestations were low, but some fields were treated in east-central Georgia. In addition, about 200,000 acres of winter rye were planted for winter grazing, and 30,000 acres of winter oats and 500 acres of winter barley were planted in Georgia. Aphids and barley yellow dwarf infection was a problem in some early planted oat fields. Winter barley acreage is increasing due to interest in malting barley for craft beer production.