

WAGING WAR

on Right of Way Weeds



With the extra time and resources realized by the Calhoun County Highway Department's spray program, the crews can complete brush control rounds using boom mowers.

BY JIM BEAN

Right of way vegetation managers in the southeast United States are battling invasive weeds along rights of ways along runways and roadsides. Invasive grasses can create dangerous road conditions for drivers and pilots as some towering grasses can grow up to 10 feet tall, blocking sightlines for drivers and runway lights for pilots. A long growing season with high rainfall has only exacerbated the problem, allowing invasive grasses to thrive and block out more desirable vegetation like shorter Bermuda grass and wildflowers.

In four different areas of the southeast, roadside vegetation managers, university researchers and airport maintenance workers have found new solutions for their invasive grass problems. All four have created integrated vegetation management plans using mowing and selective herbicide treatments. By using integrated techniques, they are spending less time on mowers and more time completing other maintenance essential to protecting the beautiful roadways and runways they have created.

Kentucky Roadsides: Managing Vegetation in the Bluegrass State

At the right time of year, drivers can see why Kentucky is called the Bluegrass State. In the spring, this particular grass species produces bluish-purple buds that cause large areas to appear blue.

Mike Smith, one of three roadside environment consultants for the Kentucky Transportation Cabinet (KTC), says that while bluegrass is welcome in the state, other invasive grasses infiltrating the roadsides are not. "We are battling a number of invasive weeds throughout Kentucky," Smith said. "One of our goals is to replace damaging weeds, such as musk thistle and Johnsongrass, with native wildflowers."

Using selective herbicides from BASF Professional Vegetation Management (ProVM) has helped Smith control unwanted grasses

while protecting and promoting the desirable wildflowers. Unlike previous generations of herbicides, the selective herbicides of today specifically target three enzymes found only in plants – not in birds, fish, people or other mammals. “This herbicide plan was a great choice for our wildflower program because it is so selective,” Smith said. “We knew it would provide postemergence control for the weeds without affecting the flowers.”



Mitch Blair, a research scientist for the Department of Plant and Soil Sciences at the University of Kentucky has helped find the right herbicides for KTC roadsides. He supports the KTC with his research on vegetation management techniques and new herbicide treatments for both existing and encroaching invasives. “Many state transportation departments rely on universities to help manage vegetation control programs, because the departments simply don’t have enough time to keep up with all the new products and ideas in the industry,” said Blair. Blair also acts as a liaison between herbicide manufacturers and the government end users, testing new products in research plots and making recommendations based on his research.

“It’s been a tremendous help to have Mitch evaluate new herbicides and give us unbiased recommendations,” Smith said. “Blair’s research gives us confidence that the products he recommends will actually work, because he tests them on Kentucky soil.”

Smith has a sense of satisfaction when he stands knee-deep in a bed of red, purple and yellow wildflowers, which has replaced weed infestations. He is especially proud when he sees passengers turn their heads to admire the wildflower beds. With the help of the University of Kentucky and BASF experts, Smith is confident that the program will continue to grow. “We’ve planted about 200 acres at this point, and we hope to keep expanding the program, starting with another 100 acres in the fall,” he said.

Calhoun County: Setting the Tone for Cost Savings

Calhoun County in Alabama features the nation’s densest concentration of federally-protected natural areas. Snaking through the abundant scenic outposts are the county’s public roads. The considerable task of maintaining these areas belongs to Brian Conary, a lifetime resident of Calhoun County, and project manager of the Calhoun County Highway Department (CCHD) vegetation management program. When invasive grasses like Johnsongrass started to become a problem on Calhoun County

The Calhoun County Highway Department is pursuing innovation in data gathering and vegetation management along its roadsides.

roadsides, Conary developed an innovative and data-driven strategy to maintain the county roadsides to keep them clear of vegetation and safe for drivers.

“To control Johnsongrass and other invasive plants, mowing was adding up from both a time and cost standpoint. Since it also created a significant safety hazard for our crew, we decided that a combination mowing and herbicide program might provide a safer and more cost-effective solution,” Conary said.

Conary’s initial herbicide program involved a spring and a summer application of herbicides. The program effectively controlled the Johnsongrass, and even created some areas where bermudagrass was released. But it also created a new problem: it released yellow foxtail, giant foxtail and maretail, also called horseweed.

“We thought that controlling Johnsongrass would solve all our weed problems,” Conary said. “Instead, it seemed as though we accidentally started a foxtail and maretail release program, which were also weeds we didn’t want on our roadsides.” Conary needed to address these new threats, so he turned to the BASF specialists for advice.

After the test plots with selective herbicides showed effective control of all the problem species while maintaining native grasses, the department made its first application to roadsides. Finding the right herbicides also saved the county on its annual maintenance costs. “Before, we were doing two full mowings each season, but now we mow only once, with minor touch-ups and spot work when needed,” he said. “Although herbicides are an up-front cost, they actually save the county money over the course of the season.”

To prove this financial gain to the county, Conary collected extensive data points to reinforce the cost savings he achieved using BASF

ProVM herbicides in his spray program. Now, he has several years of data, showing both the seasonal and long-term cost savings. "There are lots of neighboring counties that have similar weed problems, but they may not have the resources to evaluate all the control options like we did," Conary said. "We have a great opportunity to bring people in from all over and show them what an effective spray program can accomplish. If they can use this knowledge in other parts of the state, I'm more than happy to share it."

Iberia Parish, Louisiana: Small Airport Cuts Cost, Time and Mowing

With maintenance needs across the two airport properties, Lawrence Thompson, Maintenance Supervisor of Acadiana and LeMaire Regional Airports, was continually looking for ways to decrease the time spent on maintenance projects, without decreasing the quality of the work or airport safety. One ongoing, time-consuming project that stood out was vegetation management.

Regulated by the Federal Aviation Administration (FAA), grass height along runways and taxiways cannot exceed 12 inches. "When grass grows too high or onto the pavement, it can block the lights lining our runways and taxiways," Thompson said. "This can be extremely dangerous for planes that are landing."

For years, Thompson used mowers to keep grass short. The mowing schedule for the 15 miles and nearly 2,400 acres on the properties was taking up to seven days at least once a month during the eight to nine month growing season. It seemed like every time a cycle was complete, it was time to start again.

Exacerbating the problem was the mix of invasive grasses, such as smutgrass, growing along the runways. "Smutgrass is incredibly thick and slows down our cycle quite a bit," said Thompson. It also poses a real threat for air traffic—planes can easily get stuck in it if they roll even a few inches off the runway, requiring towing and a delay."

Ideally, an airport's turf is more manageable with bermudagrass. However, even where bermudagrass has kept hold against invasive smutgrass, a lot of mowing is required to keep it short. In order to make time for other priority maintenance projects, Thompson needed to adapt his program. In 2001, Thompson met Wayne Ducote, a sales specialist for BASF.

"The maintenance team needed a better solution than mowing, which was clearly impacting their ability to maintain the airport properties," Ducote said. "My goals were to reduce the need for mowing by 50 percent, make their program a lot more effective and show much better results."

Ducote helped Thompson develop test plots to determine how effective herbicides could be, so they applied BASF herbicides to the plots and watched. "It was pretty remarkable to see the grass maintained at a desirable height without additional mowing," Thompson said. "After seeing the effectiveness of the herbicide mix, we decided to implement an application program immediately."

With the herbicide program in place, mowing now takes Thompson a half day and he only needs to complete two herbicide applications per year. The control offered by the herbicide treatments has reduced mowing by 75 percent. "We gained eight weeks back during the growing season," said Thompson. He estimates this new plan is saving the airport an average of \$22,000 per year on maintenance costs. Even with the cost of herbicides, their cost has dropped from \$50 to \$30 per acre.

Thompson also noticed a consistent grass height on every acre, which greatly increased the aesthetic look of the property. "I don't think I can say enough about how much better the treated areas look," he said.

In 2002, Acadiana Regional Airport was awarded with the Outstanding Louisiana Airport Award, honoring the airport's contribution to the enhancement of aviation in Louisiana. "Receiving this award and being able to showcase the work of Thompson and his crew has been an honor for the airport," said Robert Mouton,



Maintenance crews at Acadiana Airport use a tank sprayer attached to a tractor to spray bahiagrass, smutgrass and other problem weeds. Their spray program has reduced the time and money required for mowing each year.

Airport Director. "The vegetation management program has become an integral part of our airport's legacy, and their good work will continue in the future, helping to make this a safe and beautiful facility."

NCDOT: Integrated Plan Means Roadside Vegetation Shines

The North Carolina Department of Transportation (NCDOT) has received hundreds of letters and e-mails praising the beautiful landscaping and multiple-acre flower beds lining the North Carolina roadsides. But the flower beds are just one part of the NCDOT integrated vegetation management plan. Derek Smith, vegetation management section engineer for the NCDOT Roadside Environmental Unit, works with 14 divisions covering that state's three climate zones: coastal, piedmont and mountain. These areas include multiple cool and warm-season grass species, as well as varying soil conditions.

Without herbicides, the NCDOT was spending up to \$21 million annually on mowing operations. In addition, the more time that DOT workers spent mowing, the greater their risk of being involved in a traffic or mowing accident. They found that using herbicides helped to reduce that risk and saved them money. It also helps maintain the beauty of their flower beds and each of the state's 62 rest areas.



Derek Smith and Kevin Clemmer, vegetation management section engineers for NCDOT have been successful in controlling unwanted weeds throughout their roadside ornamental beds.

With the savings of reduced mowing, NCDOT was able to implement a new guardrail vegetation management program. In 1998, as part of North Carolina's Highway Safety Program, NCDOT installed an \$80 million cable rail system along freeways to help prevent motorists from crossing median lines into oncoming traffic. While the cable rails improve safety, it's impossible to get a mower underneath or immediately next to these cable rails.

"Our new median cable guardrails do not block sight distances and they minimize the chance of head-on collisions," Smith said. "We can't let the grasses or broadleaf weeds grow up along these guardrails, or they'll affect visibility and become too thick to maintain efficiently." For these areas, NCDOT uses herbicides from BASF to control the variety of summer annual and winter weed species underneath the guardrails.



To achieve seedhead suppression of cool-season grasses, such as tall fescue, NCDOT uses state-of-the-art application equipment to apply herbicide. This program has saved NCDOT more than \$1 million on mowing expenses.

Another vegetation management activity of the Roadside Environmental Unit is their wetland mitigation program. During construction, if a road or bridge crosses or impacts a body of water, NCDOT lessens this impact by restoring wetland. This activity has a direct positive impact upon the ecosystem and conserves natural resources. "Wherever a construction project of ours leaves a footprint on nature, we buy a plot of historic wetland and work to repair the area back to its native state," Smith said.

By following the lead of these four innovative management plans, airport and roadside managers around the southeast can begin to fight invasive grasses in their areas. They can create safer and less time-consuming mowing cycles and put their savings towards other beneficial management programs. Restoring native grasses and wildflowers makes roadways and runways safer for drivers and pilots and more enjoyable for travelers. ●