

# AGRABILITY QUARTERLY



*Promoting Success in Agriculture for People with Disabilities and Their Families*

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The National Grant Program  
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The USDA Cooperative  
State Research, Education  
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University of Wisconsin-  
Cooperative Extension

Easter Seals, Inc.

## AgrAbility helps a farmer not ready for retirement

For fifty years Wendell Burkes has been farming in Mississippi. Farming was not just something he did, but it was a central part of his life. So when he woke up one summer morning in 2000 realizing that something was seriously wrong, his first concern was not his health. As his wife, Evelyn, drove him to the hospital, all he could think about was his poultry operation.

That morning in August Wendell suffered a brain stem stroke. The stroke, caused by a blood clot, left him with right side paralysis. After the stroke, Wendell could not hold his head up, was nourished through a feeding tube, and was limited in mobility and communication. By December, he had emergency surgery due to a staph infection that developed between his lungs and ribcage. He was discharged from the hospital in February 2001. He began physical therapy at the T.K. Martin Center for Technology and Disability with Cliff Dedeaux shortly thereafter to improve the functioning of his right side.

While Wendell was hospitalized, the Burkes contacted Living Independence for Everyone (LIFE), the Mississippi independent living center, which provided a wheelchair for Wendell when he was discharged. LIFE also referred Wendell to the Mississippi Department of Rehabilitation Services, which then connected the Burkes with the Mississippi AgrAbility Project.

Wendell and Evelyn contacted AgrAbility in 2002 to request assistance. Herb Willcutt, MS AgrAbility Project Director, visited the Burkes in September and conducted an on-site farm assessment. It was determined at that time that Wendell was not physically able to get back to poultry farming. "The Burkes initially contacted AgrAbility in 2002, but after inspection of the poultry houses there wasn't much that could be done," said Jimmy McDaniel,



Wendell Burkes and Herb Willcutt (left) surveying the Burkes farm during an AgrAbility visit.

*Continued on page 2*

Case Study

Wendell Burkes

Mississippi Department of Rehabilitation Services (MDRS) Rehabilitation Technologist and Mississippi AgrAbility staff.

The case was re-opened in the fall of 2005 after Hurricane Katrina damaged the Burkes chicken houses. “Mr. Burkes wanted nothing more, but to get back in his tractor,” commented Jimmy. “There was a lot of work and many issues involving his disability working with poultry,” Jimmy said, “but after Hurricane Katrina Mr. Burkes thought it would be in his best interest to switch to cattle.”

The Burkes 300-acre operation had seen many transitions in Wendell’s fifty years as a farmer. The family farm originally produced row crops and cotton in the 1950s, but in the 1970s Wendell switched to a poultry operation along with some hay and cattle.

Today, Wendell runs about fifty beef cattle in the cow-calf operation. He sells the calves when they reach 400-500 pounds. In addition, Wendell produces about 150 round bales of hay on twenty acres per year to feed his livestock.

In 2005, when AgrAbility staff returned to Wendell’s farm for another farm assessment, they helped him determine what he would need when he switched to a cow-calf operation. Herb and Jimmy learned Wendell needed assistance attaching implements to his tractor and opening gates on his farm. AgrAbility recommended and MDRS purchased a quick hitch and four solar-powered gate openers. The quick hitch aids Wendell in attaching implements so he can rake and bale hay without getting off his tractor. The gate openers improve access around the farmstead and make different areas available to him to check

on his beef cattle. “I never knew this much was out there for people,” said Wendell. “AgrAbility shows us that you can keep going and keep doing.”

In addition to the tractors, Wendell has a Kawasaki Mule and powered scooter to help with mobility. The Burkes purchased the Mule, while MDRS purchased the powered scooter for Wendell. “Those things are wonderful... He can go and check on his cattle with the push of a button and doesn’t need to wait until I get home,” exclaimed Evelyn.

He cuts and rakes hay and tends the family’s horses. In all they have five quarter horses and one mule colt. “He wants to do it all,” Evelyn laughs. “That’s a little more than either of us can do.”

Evelyn and Wendell attribute their success to the help from AgrAbility, the T. K. Martin Center, and MDRS as Wendell has made “miraculous” improvements. While he still has trouble with balance and speaking, he is able to do what he wants. Evelyn jokes, “He will even go shopping with me now.” With the powered scooter provided by MDRS, Wendell and Evelyn are able to go to livestock sales. MDRS provided the funds to make the Burkes’ bathroom accessible with a roll-in shower and rails. T. K. Martin provided Wendell with a treadmill so he can exercise at home.

Wendell continues outpatient physical therapy one day a week. He currently uses a walker, but is working toward the day he can walk with only a cane. He takes Plavix to reduce the risks of blood clots and walks on the home treadmill every day to improve his condition. “I walk a quarter of a mile, faithfully, every day,” said Wendell.

“The Burkes represent Mississippi, AgrAbility, and farmers well as they are hard-working and determined,” said Jimmy. ♦



A close-up of one of the four solar-powered gate openers MDRS purchased to improve access around the farmstead.

## Strokes

Approximately every 45 seconds, someone in America experiences a stroke—that’s 700,000 new or recurring stroke victims annually. Stroke is the third leading cause of death behind heart disease and cancer.<sup>1</sup>

### What is a Stroke?

The right hemisphere of the brain controls body functions on the left side of the body, while the left hemisphere controls functions on the right side. All the cells of the body, including the brain, receive vital nutrients and oxygen to function from circulating blood. When that blood flow to the brain is decreased or completely stopped, the result is a stroke. If cells continue to be deprived of oxygen, brain tissue may die. There are two main categories of strokes—*ischemic* and *hemorrhagic*. Eighty percent of strokes result from a blood clot blocking the flow of blood to the brain. This is known as an *ischemic stroke*. The other 20% are from a ruptured blood vessel and are referred to as a *hemorrhagic stroke*. A hemorrhagic stroke happens when either an *aneurysm* (a bulging, weakened area of the blood vessel) or brain injury causes the vessel to burst, expelling blood into the surrounding area, thereby compressing the surrounding tissue structures.<sup>2</sup>

### Symptoms

A person who has a stroke can experience all, one, or even none of the associated symptoms, depending on which area of the brain is affected and how significantly injured. The following are common symptoms of a stroke:

- Sudden numbness/tingling/weakness to the face, arm, and/or leg—usually on one side of the body
- Sudden slurred speech, difficulty understanding speech, confusion, or disorientation
- One-sided facial droop (corner of the eye or mouth)
- Sudden difficulty seeing in one or both eyes
- Sudden and severe headache
- Sudden loss of balance or coordination

A stroke can occur in any area of the brain, resulting in a range of symptoms from unnoticeable to sudden death, depending on the area affected. Figure 1 highlights areas of the brain responsible for major life functions.

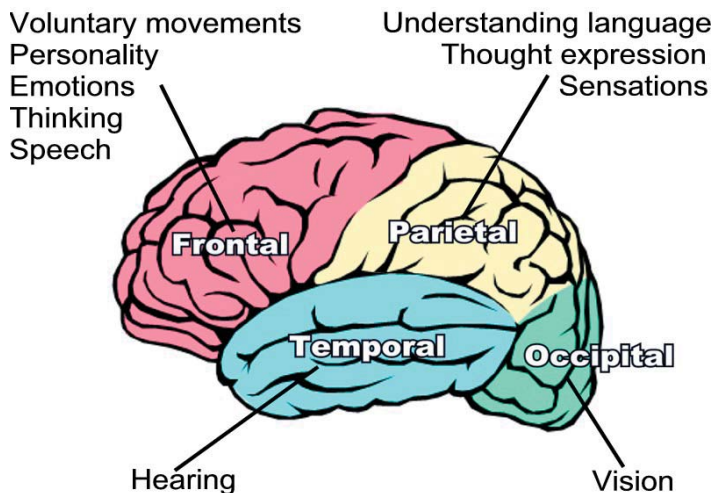


Figure 1: Areas of the brain and their associated functions.

### Risk Factors

Prevention is the best way to reduce the risk of a stroke. If a person eliminates potential risk factors, it can reduce his/her chances of experiencing a stroke.

The risk factors are:

- High blood pressure
- Diabetes
- Tobacco use
- Cardiovascular and heart disease
- High cholesterol
- Certain blood disorders
- Physical inactivity and obesity
- Excessive use of alcohol or drugs

Similarly, risk factors such as age, gender (male), heredity, ethnicity, and previous heart attack or stroke are not controllable and may increase the likelihood of a stroke.<sup>3</sup>

**Treatment**

Immediate recognition and intervention is critical to minimize the effects of a stroke. The longer the brain remains without adequate oxygenation, the more severe and permanent the brain injury is likely to be. Since most strokes result from a blood clot, one of the first medications administered for ischemic strokes is Tissue Plasminogen Activator (t-PA), which dissolves blood clots. Additional medications for stroke treatment and prevention are administered to prevent further clot formation and lower blood pressure.

If the brain injury results from a ruptured vessel (hemorrhagic stroke), surgery may be one alternative to repair the vessel and relieve the internal pressure exerted on the brain by the pooling blood. Generally, the more severe the disability is at onset of the stroke, the more negative the outcome. Many

people recover completely from strokes, while others take months or years to achieve modest gains. Overall, approximately thirty percent of strokes result in death.<sup>4</sup> Rehabilitation and brain retraining methods may include daily medications, physical/occupational/speech therapies, and lifestyle changes. With advances in medicine and vital support from families and friends, stroke survivors are leading more fulfilling lives. ❖

**Figure Credits:**

1. Microsoft Clip Art. HM00302\_.wmf. Available at: <http://office.microsoft.com/clipart/results.aspx?lc=en-us&Scope=MC&Query=brain#24>. Redmond, WA: Microsoft Corporation. Accessed 16 August, 2006.

**Pasture Accessibility**

When animals were first domesticated, their primary source of feed came from grazing the land. As harvesting machines became available, many farmers and ranchers harvested forage as feed, and stored it to feed the animals when pastures did not produce sufficient forage. In the US, climate and seasonal precipitation determine forage availability. Some farmers eliminated pastures and created total confinement systems where all the animal feed is machine harvested or purchased. The animals consume all their feed within a building or confined area.

During the past ten to fifteen years, a new grazing system, intensive rotational grazing, developed. Intensive rotational grazing uses new management methods which have resulted in increases in the productivity of the pasture and livestock. As a result, some farmers and ranchers with mechanical harvesting have returned to pasturing with economic success.<sup>5</sup>

Based on the 2002 USDA data, more than one third of US farmers utilize pastures on more than sixty million acres.<sup>6</sup>

Pasturing systems differ, based on the number of acres per animal (stocking density) and the number of times the animals rotate through the pastures or paddocks. In areas where native grasses are grazed and production is limited due to soil and climate conditions, the stocking density may be twenty acres per animal using one large pasture throughout the growing season. For rotational grazing using planted alfalfa or grasses, the stocking density may be less than an acre per animal, and they are moved to a new pasture or paddock every one to three days.<sup>7,8</sup> To obtain maximum productivity the farmer or rancher must balance optimum forage production with maximum animal production in terms of pounds of meat or milk per day by maintaining the proper stocking density.

The farmer or rancher, also referred to as a grazier, must complete numerous tasks to operate and manage a successful and profitable grazing program. The grazier must check on the animals while in the pasture and provide feed when pasture production drops, as well as repair and maintain the fences.

The grazier with limited mobility will find a pickup truck, utility vehicle, or ATV useful to check the animals. Pickup trucks are best for distances in excess of half a mile to the pasture. For shorter distances, the utility vehicle or ATV is appropriate if the road surface is unpaved. A comparison of utility vehicles is available on the AgrAbility Web site<sup>9</sup> and the Winter 2006 AgrAbility Quarterly contains additional information on assistive technology for limited mobility.<sup>10</sup>

Since pastured animals must be fenced, gates should be selected to meet the needs of the grazier with a disability. Some selection criteria include ease of opening, opener power source (manual, electrical [12 volts or 115 volts] or solar), and cost.<sup>11</sup> Examples of gates useful for people with limited mobility are drive-through and remote control. In rotational grazing

using planted alfalfa or grasses, fences may need to be moved every one to three days and maintained.<sup>12</sup> Poly-wires or tapes and plastic step-into-the ground posts provide light-weight fencing especially useful for people with limited lifting ability.

Supplemental feed will be needed when the pasture production is low or nonexistent. Dry baled hay or other feed can be provided in the pasture area. A description of the equipment for handling hay can be found in the Winter 2003 AgrAbility Quarterly.<sup>11</sup> A round baler and an appropriately equipped tractor with front-end loader may be useful to a person with a disability.

The animals on pasture must have access to water without having to walk large distances. This can be provided by permanent or temporary systems using pipe or plastic hose.<sup>12</sup>

With the correct assistive technology, graziers with disabilities can successfully manage their grazing system. Graziers should contact their local extension educator for the proper stocking density for their climate and situation and for other grazing related information. ❖

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## Strokes and Pasture Accessibility

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## Mississippi AgrAbility Project

The Mississippi AgrAbility Project began nine years ago in the spring of 1997. The current partnership links Mississippi State University (MSU) Extension Service, Mississippi Department of Rehabilitation Services (MRDS), T.K. Martin Center for Technology and Disability, Alcorn State University Extension Program, and Methodist Orthotics and Prosthetics Lab.

This strong partnership, along with exceptional support from the MSU Agricultural and Biological Engineering Department through development of demonstration equipment, has made Mississippi AgrAbility successful. MRDS is the primary source of funding for adaptive equipment and assistive technology for Mississippi clients. It, along with the T.K. Martin Center for Technology and Disability, provides critical evaluations for clients in areas of seating, driving, home modifications, communication, and assistive technology.

New partner organizations, Alcorn State University Extension Program and Methodist Orthotics and Prosthetics, have taken AgrAbility to areas previously underserved. They enrich the program with their services to those in the disability community who deal with diabetes and amputations and to those in

the southern Delta area where Alcorn's Extension Program is active.

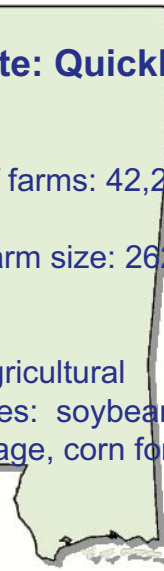
The Mississippi AgrAbility Project staff work well together, and as many as possible (and appropriate) are involved in site visits. This gives the client a complete scope of services in a timely manner. Mississippi AgrAbility site visits also include the client's extension agent and vocational rehabilitation counselor. Clients participate in and have access to the peer support network and are highlighted in the newsletter.

Mississippi's project has also offered mini-grant opportunities to the public to increase awareness of disability issues. One group constructed accessible gardening structures and another constructed accessible hunting sheds at a game reserve.

Mississippi is working with the National AgrAbility Project to host the National AgrAbility Training Workshop (NTW) in Jackson, Mississippi. The NTW will be held November 13-16, 2006 at the Jackson Hilton. Two Mississippi clients are participating as presenters in the 2006 NTW and more clients will be serving on the Farmers' Panel during the Monday night program. ❖

### MS in a Minute: QuickFacts<sup>13</sup>

- Number of farms: 42,200
- Average farm size: 262 acres
- Top five agricultural commodities: soybeans, cotton, forage, corn for grain, and rice.



## Mississippi AgrAbility Project Contact Information

1060 Hwy 13 South  
Columbia, MS 39429

Web site | <http://Msucare.com/safety/agrability>

Phone | 601-736-8251

Email | [emilyk@ext.msstate.edu](mailto:emilyk@ext.msstate.edu)

## Mississippi AgrAbility Staff

### Mississippi State University-Extension

**Herb Willcutt**, project director, provides overall project administration, supervision, and coordination of project activities with partners. Herb coordinates educational events and the development/production of informational/promotional materials. Herb is employed by MSU-Extension Service/Ag Engineering. He has worked for AgrAbility nine years and MSU-Extension twenty-two and a half years. **Emily Knight**, program assistant, manages case files and coordinates client visits. She develops newsletters, staffs the exhibit booth, and makes presentations to various groups. Emily is employed by MSU-Extension Service/Ag Engineering, where she has been working for AgrAbility for nine years. **Mary Riley**, 4-H Therapeutic Riding coordinator, assists with mini-grant projects. She staffs the exhibit booth and presents at workshops. Mary coordinates activities related to the therapeutic riding program. She has been employed by MSU-Extension Service/4-H for nine years. This is Mary's first year working with AgrAbility.

### T.K. Martin Center for Technology and Disability

**Cliff Dedeaux**, occupational therapist (OTR/L), provides assistance with assistive technology evaluations. He participates in statewide and regional educational events. Cliff is employed by the T.K. Martin Center for Technology and Disability, where he has been working with AgrAbility for three years.

### Mississippi Department of Rehabilitation Services

**Kris Geroux**, assistive technology coordinator, coordinates AgrAbility awareness, training, and networking within the Mississippi Department of Rehabilitation Services. He assists in coordinating, scheduling, and evaluating clients. Kris has worked for the Mississippi Department of Rehabilitation Services for seven years and has been working with AgrAbility for six years. **Jimmy McDaniel**, rehabilitation technologist, provides assistive technology evaluations to clients and makes proper recommendations to the Office of Vocational Rehabilitation. Jimmy is employed by Mississippi Department of Rehabilitation Services, where he has been working for thirty-one years and with AgrAbility for four years. **Patsy Galtelli**, special projects officer with Mississippi Department of Rehabilitation Services, assists Kris and Jimmy with budgetary expenses.

### Alcorn State University-Extension

**Anthony Reed**, small farm outreach/farm management specialist, coordinates all AgrAbility efforts for ASU and its employees. He has worked with the Alcorn State University Extension Program for six years and one year with AgrAbility.

### Methodist Orthotics and Prosthetics

**Chris Wallace**, clinical coordinator/director of prosthetics and orthotics, oversees the coordination and implementation of educational in-services, client screenings, consultations, media releases, and other activities relative to AgrAbility. Chris is employed by Methodist Orthotics and Prosthetics, where he has been for five years. Chris joined AgrAbility this year. **Luly Johnson**, outreach representative, coordinates educational in-services, media releases, educational materials, and exhibits at various functions. She has been employed by Methodist Orthotics and Prosthetics for two years. This is her first year with AgrAbility. **Jennifer Long**, clinical manager, educates through in-services, marketing events, trade shows, and one-on-one meetings. She has been employed by Methodist Orthotics and Prosthetics for six years and AgrAbility for one year. **Darby Shook**, clinician, assists with in-services and educational writing for AgrAbility. She is employed by Methodist Orthotics and Prosthetics, where she has been for five years. Darby has been with AgrAbility for one year. ❖

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The AgrAbility Project promotes success in agriculture for individuals with disabilities and their families through on-site assistance and educational resources. For additional information on the National AgrAbility Project or for a current list of state project sites, addresses, and telephone numbers contact:

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460 Henry Mall  
 Madison, WI 53706  
 866-259-6280 or 608-262-5166

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<http://www.agrabilityproject.org>

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