



USER-FRIENDLY TECHNOLOGY FOR FARMING AND GARDENING

In order to adjust to the uncertainty caused by the COVID-19 crisis, many are devoting more time to farm chores or starting gardens as a pastime and a source of food for their families.

The ideas below can help prevent musculoskeletal disorders and relieve pain caused by arthritis, back injuries and other orthopedic disorders.

To be kind to your body, every morning before heading to the field or garden:

- Stretch to bring strength and flexibility to your muscles, joints, ligaments and tendons.
- Practice good posture to avoid sprains and strains.
- Take small breaks during the day to stretch.
- Stay hydrated.

Take stock of your equipment and tools and make sure you are operating them in the safest way possible.

Equipment modifications

If you are working on a tractor, ATV or riding lawnmower, look for a cushioned seat that adjusts to your body and has the proper height. If the seat has a hard surface, or if it's too high or too low for the user, it can create pressure behind the knees or buttocks and create discomfort. A comfortable seat allows for better blood circulation while absorbing some of the vibration caused by the equipment.

When driving a tractor, your back and neck are absorbing the vibration from the machine and the implement. If you add an awkward posture (turning your neck to inspect



the implement's work, for example) the risk of damage to the musculoskeletal system can increase. To solve this issue, install rear view mirrors at different angles for a clear field of vision.

Add on tractor steps. Adding extra steps allows access to the tractor seat while reducing stress on the back and knees.

Seating solutions

Sitting while working conserves energy and reduces stress on the knees and hips and strain on the lower back and legs. Standing can cause legs to swell. The use of a rolling seat is helpful in the farm shop, when feeding livestock or gardening, etc.

Pruning tools

Look for pruners that fit in your hand, fit the shape of your fingers, have a soft handle for better grip, and have a spring return to maintain an open position. These features reduce strain that can inhibit the hand's nerve function and blood flow and can to injury. If your tool doesn't have these features, you can add cylindrical rubber grips to improve the grip.

Digging tools

Ergonomic shovels and spades provide a wider surface with better foot registration than traditional steps, allowing the stress to be distributed rather than concentrated in the back. The added leverage will make digging easier and more efficient. Some tools have large circular handles that provide comfort, allowing for a greater range of natural hand positions and avoiding wrist strain. Ergonomic shovel attachments are also available on the market and will allow you to make an old tool ergonomic. Use tools that are a good fit for you. Ergonomic tools are usually created for an average-size male or female, and some may not fit your specific needs.



N.C. A&T
STATE UNIVERSITY

**COOPERATIVE
EXTENSION**

Hand tools

Four aspects to keep in mind while selecting hand tools are weight, shape, handle size and texture. The weight should be light but strong. The forefinger and thumb should overlap when grasping the handle, providing a “power grip.” Choosing a tool with an ergonomic shape will help keep the wrist in a neutral posture while the tool is in use. Tools with forearm braces help keep the hand aligned with the forearm, helping reduce the stress of repetitive motions by allowing the larger muscles to work. Textured, slip-resistance surfaces will minimize the force needed to use the tool and avoid the need to grip it too strongly.

Long-handled tools

There are some attachments that you can add to the handle of your tool to make it more comfortable. These attachments will add an extra point of support, allowing the user to keep their back straight. Good posture will add comfort, increase leverage and efficiency, and reduce back and shoulder fatigue. If you are tall, try to look for tools with larger handles. Long-handled tools increase leverage and reduce the amount force needed. Excessive force can overload the muscles, creating fatigue and creating the potential for injury.

Back harnesses

The use of a back harness while shearing sheep can help balance the weight of the shearer, reducing the cumulative stress and taking pressure off the back.

Gloves

A wide range of gloves are available to protect against the effects of different stressors. There are gloves that help absorb the vibration produced by electric saws, aerators, augers and other power tools, reducing the incidence of injuries to the



N.C. A&T
STATE UNIVERSITY

**COOPERATIVE
EXTENSION**

nerves of the hand and fingers. Others help relieve aches and pains caused by impact from the use of hammers and other tools. Wearing the appropriate gloves helps improve grip strength and reduce hand fatigue, pain and discomfort from swollen and sore joints due to arthritis. Gloves that help with arthritis provide compression and support, reducing inflammation of the joints and allowing better blood circulation.

Lifting solutions

Using a dolly, wagon or conveyor (if you need to move several bags or boxes) can reduce or eliminate the need for lifting, carrying and dumping loads. This way, the farmer can be more efficient while reducing their risk of musculoskeletal disorders of the back, knees, legs and arms.

Adjust working stations

For gardeners with back injuries or back impairments, the use of raised beds, hanging baskets, towers or a trellis garden can help reduce strain on the back, knees, shoulders and arms.

For more information about where to find ergonomic tools, modified equipment or assistive technology, visit the [National AgrAbility Toolbox](#). Share this information with your family and friends and keep in mind that you are your most important asset!

For more information, contact Beatriz M. Rodriguez, NC AgrAbility project manager, at bmrodrig@ncat.edu.

Distributed in furtherance of the acts of Congress of May 8 and June 30, 1914. Employment and program opportunities are open to all people regardless of race, color, national origin, sex, age or disability. North Carolina A&T State University, North Carolina State University, the U.S. Department of Agriculture and local governments cooperating.

N.C. A&T is accredited by SACSCOC to award baccalaureate, master's and doctoral degrees. | N.C. A&T does not discriminate against any person on the basis of age, color, disability, gender identity, genetic information, national origin, race, religion, sex, sexual orientation, veteran status, or any other basis protected by law. | N.C. A&T is an AA/EEO and ADA compliant institution.



**COOPERATIVE
EXTENSION**