California AgrAbility

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California AgrAbility Project

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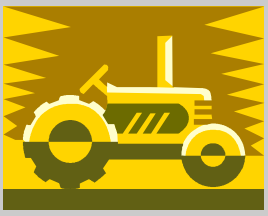

Promoting Success in Agriculture for People with Disabilities and Their Families

Oh My Aching Back! Ergonomics In Agriculture

Ergonomics? Didn't I take that class along with Finance and Accounting? Probably not, but with 20,000 disabling injuries occurring in California's agricultural industry each year, some folks wish they had taken a class or two. In agriculture back injuries account for almost 40% of all injuries. But take heart, there are things you can do to prevent the stresses and strains on your "aching back"…. and ergonomics is the answer.

What is ergonomics? Most commonly defined, it is the scientific study of human work. The Greek words "ergos" means "work," and "nomos," means "natural laws of." Ergonomics considers the physical and mental capabilities and limits of workers as they interact with their environments, tools, equipment, work methods, and tasks. Certified Industrial Ergonomicist Fran Hurley-Wagner promotes fitting the task to the farmer/worker wherever possible. This involves working in a more conscious manner with the objective of preventing injury to oneself. "Pay attention to posture and body positioning." Fran advises workers to change postures often.

Large machinery, unpredictable animals, confined spaces, chemicals, and rough terrain are a few of the many risk factors CalAgrAbility farmers and workers encounter daily.

Figure No. 1: Agricultural workers use awkward postures thus increasing their risks of Musculoskeletal Disorders.

According to Hurley-Wagner, "field jobs like harvesting, weeding, and irrigating are demanding physical tasks involving stooped postures, lifting and carrying, and repetitive hand work" resulting in cumulative trauma disorders (CTDs) (See Figure No. 1). "CTD risk factors include repetitive forceful hand and shoulder motions, sustained forward bending, over-extension, and other awkward body postures," says Fadi Fathallah, UC Davis Ag Ergonomics Research Center faculty member. His field experiments show that work positions requiring the **least** forward bending helps workers maintain upright and neutral body positions, protecting them from developing MSDs. The repetitive and strenuous tasks can literally result in the alphabet soup of long-term conditions: MSDs, MSIs, RSIs, OOSs.

Ergonomic Terms 101

Cumulative trauma disorders (CTD) is an umbrella term representing a variety of injuries resulting from excessive demands on the soft tissues of the body. Related terms include repetitive strain injury (RSI), musculo-skeletal disorder or injury (MSD/MSI), occupational overuse syndrome (OOS), etc.
Source: CTD Resource Network, Inc. http://www.tifaq.com/information.html

Article continued on page 2

Events

Upcoming Events

January 18-20, 2005
29th Annual Stockton Ag Expo
San Joaquin Fairgrounds
Greater Stockton Chamber of Commerce, 547-2930 or visit www.stocktonchamber.org/agexpo/agexpo_home.htm

January 20-21, 2005
Harvesting Clean Energy Conference. Bringing together agriculture and energy, ideas for making and profiting from clean energy sources
Great Falls, Montana
www.harvestcleanenergy.org/conference, or (360) 943-4241.

January 28-30, 2005
14th Annual Western Migrant Stream Forum
DoubleTree San Diego
7450 Hazard Center Drive
San Diego, CA 92108
http://www.nwrpca.org

January 31- February 4, 2005
National Head Start Hispanic Institute
Albuquerque, New Mexico
Contact: Veronica Coon, 703-243-0495 or vcoon@pal-tech.com
http://www2.acf.dhhs.gov/programs/hsb/conferences/index.htm

February 2-3, 2005
11th Annual AgSafe Conference, Embassy Suites, Seaside, CA
559-278-4404
www.agsafe.org

We're on the Web!

http://calagrability.ucdavis.edu/

Solutions on Farms can be Simple and Inexpensive

"Our backs, hands and legs are our most valuable tools. If work causes muscle and joint pain, or discomfort, numbness, swelling, or tingling, take action immediately. These symptoms can develop over weeks, months or years. Change routine tasks to reduce stress on muscles and joints," says Hurley-Wagner. "Modify the task, take muscle-rest-breaks ***before*** soreness occurs, and use the right tool!"

In The Shop or In the Field….Whether Grower or Laborer…

- Adjust the height of work surfaces, i.e., lower/raise work benches, crop rows or use raised beds
- Vary tasks throughout the day and among workers and take and encourage short rest breaks
- Reduce size and/or weight of carried or lifted items, i.e., boxes, produce bags and bins (Figure No. 2)
- Provide and use lifting and carrying equipment, i.e., hand-trucks and dollies, fork- and hay lifts, wheel barrows (Figure No. 3)
- Select right tool for the job, i.e., use a balanced hammer for pounding, not the side of a wrench
- Modify tools (Figures Nos. 4 and 5)
- Make sure you are in the ergonomically-correct position for the task (Figure No.6)

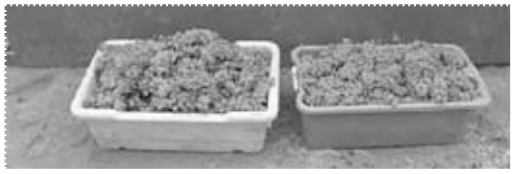

Figure No 2: A smaller picking tub reduced the weight from 57 lbs. to 46 lbs. (Source: UC Davis AERC)

Figure No. 3: Motorized Wheel Barrow (Source: Breaking New Ground, Purdue University)

Tool Modifications

Tool modifications can be simple and inexpensive. Lengthen tool handles to prevent stooping or overextending. Figure No. 4 shows how PVC pipes were added using strong durable tape. Add padding to grips (Figure No. 5) to reduce cramps and aches.

According to CalAgrAbility staff, attention should be paid to the ergonomic design of all farm tools, large or small. Hand tools should be designed to maintain the wrists and hands in neutral positions or in line with the forearm. Hammers, hoes, picks, or axes used for striking produce mechanical vibration that moves from the object through the tool into the hands, wrists and forearms. These forces, repeated over time, can have severe affects on muscles and joints. Mitigate vibration affects by using rubber-coated synthetic handles and proper gloves.

Article continued on page 3

Figure No. 4: PVC added to tool handles *Source: University of Missouri*

Figure No. 5: Tool handles with padding added to grip *Source: University of Missouri*

About Fran Hurley-Wagner

Thanks to Fran Hurley-Wagner for contributing to this newsletter. Fran Hurley-Wagner, MS, CIE, CRC, is a Board Certified Industrial Ergonomist. She has worked as an Ergonomic Evaluation Specialist since 1993. She has experience as a Vocational Rehabilitation Counselor and as a Disability Evaluation Analyst for the Social Security Administration. Ms. Wagner also writes ergonomic training materials for Cal/OSHA and Fed/OSHA. She co-teaches Office and Industrial Ergonomics for the Occupational Health & Safety Certificate program at UC Davis. In 1996, Ms. Wagner founded Sacramento's Ergonomics Roundtable, which continues to be an educational and information forum for employers and ergonomic professionals committed to making the workplace a safe place.

Did You Know…

Alaska Fish & Game says male and female reindeer grow antlers in the summer. Males drop their antlers as winter begins. Females keep theirs until after spring birthing.

So it's time to change the "history" books. Rudolph, Blitzen, and all the others had to be girls!

Reindeer (Rangifer tarandus) are semi-domesticated caribou.

Oh my Aching Back! *continued*

Vibrations from power tools cause contractions or shortening of muscle fibers in arms. Small blood vessels constrict and cut off blood flow resulting in quick fatigue and numbing. Add padding or absorption materials to handles to dampen vibrations.

Ergonomic principles can solve many of the common injury problems reported by farmers and workers if each individual makes ***conscious decisions*** when performing each job. CalAgrAbility staff will provide more information and expertise to ergonomics and farming in future newsletters. Stay tuned and stay upright!

Resources:
Easy Ergonomics: A Guide to Selecting Non-Powered Hand Tools, September 2004
An easy to use guide for selecting or purchasing the available ergonomically designed non-powered hand tools. Has a checklist to evaluate design of specific hand tools.
http://www.cdc.gov/niosh/docs/2004-164/default.html

[Figure 6 Source: CDC http://www.cdc.gov/niosh/doc]

INCORRECT

CORRECT

Figure No. 6

CalAgrAbilty Attends the 2004 National AgrAbility Conference

CalAgrAbility project manager Martha Stiles and case manager Mary Reyna attended this years National AgrAbility conference in Springfield, Illinois. The conference was a four-day training event. We were particularly excited this year because five of our California consumers were awarded scholarships to attend. However, only three were able to take advantage of this generous gift.

Marshall Loskot, our featured gardener November newsletter attended. He networked with ADM executives who enjoyed sampling his herbal seasonings.

The conference provided technical assistance and resources to professionals working with people with disabilities who farm or ranch. CalAgrAbility Case Manager Mary Reyna was very excited about this conference; "I enjoyed seeing my fellow colleagues from other states and talking to them about their AgrAbility projects. I was able to exchange information with them and get some new information. Overall the training was very helpful and each National AgrAbility conference that I attend inspires me!"

Martha Stiles said she always comes away with new ideas. This year was especially informative for CalAgrAbility to expand services such as peer support and the Ambassador Program. "These services can be of great help to both our farmer and worker consumers. I think we will be able to get a good response from local communities for such efforts," says Stiles. "Our farmers who attend can't wait until next year."

About CalAgrAbility …

The California AgrAbility Project's primary goal is to help farmers, agricultural workers, ranchers and their families to continue working in agriculture regardless of physical limitations, impairments and disabilities. Staff will help conduct on-site assessments and identify appropriate assistive technologies to make the job safer and easier. This is supported by the CSREES USDA under special project number 2003-41490-01584.

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