

Nurture

Quarterly Newsletter of the National Children's Center for Rural and Agricultural Health and Safety

Fall 2008
Volume 11, Number 2

Features

Page 2

Mini-grant funds deadline Sept. 10

CASN meets, learns latest child ag injury statistics

USDA tractor safety certification project has new CD

Page 3

15 years later: hearing protection study follows up on farm youth

Study measures strength required for children to operate tractors

The ergonomic forces required to operate controls on 40 different models of tractors in common use in the U.S. typically exceeded the physical abilities of most children aged 13 to 17 years, according to a recently published study.

"This raises serious questions about the ability of children to safely operate tractors in common use on U.S. farms," said co-author Barbara Marlenga, Ph.D., of the National Children's Center.

"Forces required to operate controls on farm tractors: Implications for young operators," appeared in the July 2008 issue of *Ergonomics*. Authors are Fadi Fathallah, Ph.D., Ji Hong Chang, Ph.D., Richard Berg, M.S., William Pickett, Ph.D., and Dr. Marlenga.

Farm tractors account for the majority of fatal injuries to adolescents working in agriculture and therefore remain a leading occupational priority. The question of whether these injuries occur because adolescents are assigned tractor jobs beyond their physical capabilities has not been answered, Dr. Marlenga said.

The purpose of this study was to estimate the activation forces required to operate tractors in common use and compare them with existing estimates of physical strength for children of varying ages and with recommended ergonomic force limits for repeatedly engaging controls. Activation forces for steering, brakes and clutch were measured on each tractor.



The study provides objective evidence that could assist in establishment of evidence-based minimum-age recommendations for children and tractor operation. A strength of the study is that efforts were made to measure the forces required to operate tractor controls in "real-life" field settings, thus enhancing the generalisability of the study findings. In addition, the tractor force data were collected as part of a larger set of anthropomorphic variables that also included reach-distances and fields-of-vision. Collectively, these three analyses should provide a more comprehensive picture of the ability of children of varying physical abilities to effectively operate tractors in common use in the U.S., and the factors that impinge upon their safety, than has previously been available.



National Children's Center
for Rural and Agricultural Health and Safety

"The National Children's Center for Rural and Agricultural Health and Safety strives to enhance the health and safety of all children exposed to hazards associated with agricultural work and rural environments."

News in brief

Mini-grant funds deadline Sept. 10

For the 8th consecutive year the National Children's Center is making available mini-grants to support small-scale projects and pilot studies that address prevention of childhood agricultural disease and injury. A maximum \$20,000 may be requested. Four to five projects will be funded.

Applications (mail or electronic) must be received by Sept. 10, 2008. For an application and additional information contact Marcy Fitz-Randolph, D.O., at 1-800-662-6900 or fitz-randolph.marcy@mcrf.mfldclin.edu.

CASN meets, learns latest child ag injury statistics

John Myers, MSF, reported on the latest NIOSH Childhood Agricultural Injury Survey youth farm injury estimates at the meeting of the Childhood Agricultural Safety Network meeting, June 23, in Lancaster, Pennsylvania.

The survey (for 2006) indicated that the number of household youth on farms, number of injuries, and rate of injury have all decreased. From 1998 to 2006, the number of farm youth younger than 20 dropped from 1.46 million to 1.12 million, with corresponding decreases in number of injuries (37,800 to 23,000) and injuries per 1,000 farm household youth (18.8 to 10.5). Myers said it is difficult to distinguish rate/exposure of farm visitors versus household youth. Types of injuries that continue to increase are associated with horses and all-terrain vehicles, with the injuries almost exclusively recreational.

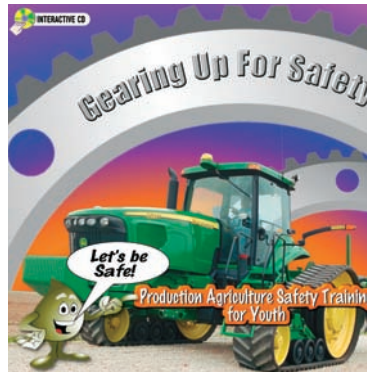
Nearly 30 people attended the CASN meeting, with individuals providing updates on their respective organizations. Guests included William Nelson, chair of the Agricultural Safety and Health Council of America, and George Conway, M.D., M.P.H., program leader of the NIOSH Agriculture, Forestry and Fishing program.

Personal protective gear for sale by AgriSafe



The AgriSafe Network is expanding to more states, training health professionals to care for the unique health care needs of farmers. And now, AgriSafe is selling personal protective equipment online at www.agrisafe.org. All proceeds support AgriSafe's non-profit work in the delivery of occupational health care to farmers. For more information, contact AgriSafe Executive Director Natalie Roy, nroy@agrisafe.org or 985-845-1116.

USDA tractor safety certification project has new CD



Purdue University, as part of its work on updating the federal tractor and machinery safety certification program, has developed a Gearing Up for Safety Program Leader's Guide CD to accompany the previously-released interactive student CD. The leader's guide CD is designed to provide an instructor with the necessary tools for organizing and

conducting a production agriculture safety training program for youth to meet the current training requirements under the federal law. Both student and leader CDs may be obtained by contacting Hobar Publications/Finney Company at 1-800-330-6232.

Two Childhood Agricultural Safety Network members are on the Purdue Tractor Certification Project Advisory Group. Shari Burgus (Farm Safety 4 Just Kids) and Bernard Geschke (Progressive Agriculture Foundation).

NIOSH seeks comment on childhood initiative

The National Institute for Occupational Safety and Health seeks public comment on progress and proposed future activities of the Childhood Agricultural Injury Prevention Initiative. Since October 1996 when NIOSH began implementing a Childhood Agricultural Injury Prevention Initiative, it has funded a number of activities intramurally and extramurally. NIOSH will provide an overview of progress to date and proposed future activities for the Childhood Agricultural Injury Prevention Initiative. Public comment can be made by either of two methods. A meeting will be held this fall in Washington, D.C., for stakeholders to provide their comments. Additionally, the NIOSH Docket Office will take written comments once a document of progress and proposed future activities is available for public review. Please check <http://www.cdc.gov/niosh/childag/> for the latest details.

Safety calendars for 2009

The Childhood Agricultural Safety Network is again publishing safety calendars. Each month in the 2009 calendars features a safety message from a different network member. To order calendars, please contact a CASN member organization, or contact Regina Fisher at the National Children's Center, 1-800-662-6900, fisher.regina@mcrf.mfldclin.edu.

Continued on page 3

15 years later: hearing protection study follows up on farm youth

A study conducted 15 years ago found that an educational intervention improved hearing protection use among farm youth.

Now, Barbara Marlenga, Ph.D., of the National Children's Center, has received a three-year grant from NIOSH to find and study the same group of individuals to see whether that increase in hearing protection use continued into adulthood, and whether that protection helped preserve hearing.

This new study will evaluate whether the hearing conservation program conducted with Wisconsin farm youth from 1992 through 1996 had long-term benefits to safeguard hearing. Although that hearing conservation program was conducted with farm youth, the impact of this new study goes beyond agriculture. "Noise-induced hearing loss is a big problem," Dr. Marlenga said. "Ten million people in the United States, including children and youth, have hearing loss from exposure



to loud noises. More than 30 million workers are estimated to be exposed to hazardous noise levels on the job."

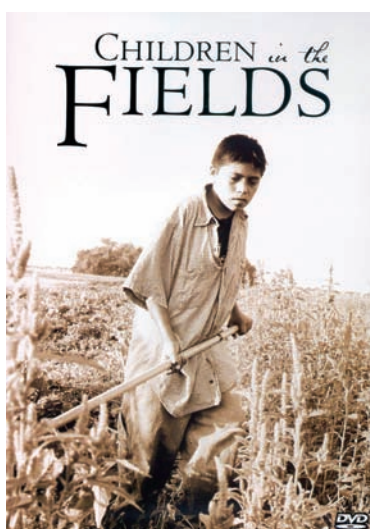
The original study was conducted through the National Farm Medicine Center at Marshfield Clinic Research Foundation. Half the participants received ear muffs and ear plugs as well as training and reminders about using hearing protection. At the end of the study, the youth who received the intervention reported using hearing protection more consistently than those who did not, although at that time the hearing test results were not different between the two groups.

"After 15 years, we expect that noise-induced hearing loss would start to appear," Dr. Marlenga said.

News in brief

Continued from page 2

Short documentary on child farmworkers available



"Children in the Fields" is a 10-minute documentary about migrant children working in U.S. agriculture. Farmworker children, parents and experts share their experiences, with recommendations on what can be done to make a difference in the lives of these children. Filmed in Minnesota, North Dakota, and Texas, "Children in the Fields" will open your eyes to the plight of this population of American children,

according to the Association of Farmworker Opportunity Programs, which is selling the DVD for \$5. To purchase a copy, contact Heather Anderson 202-828-6006, ext. 105 or anderson@afop.org.

Sept. 21-27: National Farm Safety & Health Week



The theme for 2008 is "Farm Safety – Protect YOUR Investment," highlighting the value of safety and wellness of the agricultural producer, and the importance of protecting hearing, lung function, vision, skin, and the musculoskeletal system.

National Farm Safety & Health Week is an annual promotion of the National Safety Council. It commemorates the work ethic and sacrifices of farmers and ranchers.

The National Safety Council is a non-governmental, non-profit, international membership organization dedicated to protecting lives and promoting health. The National Education Center for Agricultural Safety (NECAS) is a partnership between the NSC and Northeast Iowa Community College and an active member of the National Institute for Farm Safety. To contact NECAS, call 1-888-844-6322 or go to <http://www.nsc.org/necas>.

Schedule of upcoming events

October 19-23, 2008

Sixth International Symposium: Public Health and the Agricultural Rural Ecosystem
Canadian Centre for Health and Safety in Agriculture
Saskatoon, Saskatchewan, Canada
<http://www.cchsa-ccsma.usask.ca/pharesymposium2008/>

October 23-25, 2008

21st Annual East Coast Migrant Stream Forum
Providence, Rhode Island
<http://www.ncchca.org/165228.ihtml>

November 11-13, 2008

Health & Safety in Western Agriculture – New Paths Conference
Cle Elum, Washington
<http://depts.washington.edu/pnash/2008conference/>

November 19-22, 2008

18th annual Midwest Stream Farmworker Health Forum
New Orleans, Louisiana
http://www.ncfh.org/00_clt_mwfsf.php

November 20-21, 2008

Midwest Rural Agricultural Safety and Health Forum
Davenport, Iowa

January 23-25, 2009

18th annual Western Migrant Stream Forum
San Diego, California
<https://www.nwrpca.org/onevent/details.php?id=1376>

January 29, 2009

First annual meeting of the Agricultural Safety and Health Council of America
Washington, D.C., <http://www.ashca.org>

Nurture is a publication of the National Children's Center for Rural and Agricultural Health and Safety (a program of Marshfield Clinic, Marshfield, Wisconsin).

It is published three times each year to disseminate children's rural health and safety information to professionals in the fields of health and safety, agri-business, the media, and others.

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Funds for this newsletter are provided by the National Institute for Occupational Safety and Health (NIOSH award no. U50/OH008107).



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