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**Boletín de
Seguridad y
Salud en el
Trabajo del
Sector
Agrícola**



**Instituto Andaluz de Prevención
de Riesgos Laborales**
Consejería de Empleo, Empresa
y Trabajo Autónomo

**Laboratorio-Observatorio Andaluz de
Condiciones de Trabajo en el Sector Agrícola
(LASA)**

<https://www.juntadeandalucia.es/organismos/iaprl/areas/investigacion/lasa.html>

Finalidad de este documento

Este boletín realizado desde el Laboratorio-Observatorio Andaluz de Condiciones de Trabajo en el Sector Agrícola (LASA) engloba diferentes artículos científicos sobre Seguridad y Salud en el Trabajo (SST) en el sector de la agricultura. Recoge trabajos que han sido publicados en revistas del Journal Citation Reports en el tercer cuatrimestre del año 2023. Se expone el título y resumen en inglés de cada artículo junto con su información principal. Además, en todos se presenta un breve resumen en español de los aspectos más destacados. Este boletín pretende facilitar la revisión de los artículos publicados en este ámbito en el período de tiempo indicado y el acceso a las revistas correspondientes.

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ANNALS OF AGRICULTURAL AND ENVIRONMENTAL MEDICINE

ARTÍCULO 1:

Poultry house as point source of intense bioaerosol emission

Introduction and objective: Intensive poultry farming is usually associated with massive exposure to organic dust, which is largely composed of microbiological origin particulates. The aim of the study is to assess occupational and environmental exposures to airborne bacteria, fungi, and Marek's disease virus emitted by a poultry house.

Material and methods: The concentrations of airborne microorganisms in a poultry house and its vicinity (250–500 m) at 3 different stages of the production cycle (i.e. empty poultry house, with 7-day-old and 42-day-old chickens) were stationary measured using Andersen and MAS impactors, as well as Coriolis and BioSampler impingers. The collected microbiota was taxonomically identified using molecular and biochemical techniques to characterize occupational exposure and its spatial dissemination.

Results: Although Marek's disease virus was not present in the tested air samples, the appearance of reared chickens in the poultry house resulted in an increase in airborne bacterial and fungal concentrations up to levels of 1.26×10^8 CFU/m³ and 3.77×10^4 CFU/m³, respectively. These pollutants spread around through the ventilation system, but their concentrations significantly decreased at a distance of 500 m from the chicken coop. A part of the identified microbiota was pathogens that were successfully isolated from the air by all 4 tested samplers.

Conclusions: The poultry house employees were exposed to high concentrations of airborne microorganisms, including pathogens that may lead to adverse health outcomes. To protect them, highly efficient hygienic and technical measures regarding the poultry house interior and its ventilation, respectively, should be introduced to prevent both unwanted pollution and subsequent emission of microbial contaminants during intensive chicken breeding.

¿De qué trata este artículo?

El gallinero como fuente puntual de emisiones de bioaerosoles

Se estudió la exposición de trabajadores a bacterias, hongos y virus en un gallinero. Se midieron las concentraciones de microorganismos en el aire en tres momentos diferentes de la producción. Los datos se tomaron tanto en el gallinero como en sus zonas cercanas (250-500 m). Se concluyó que los trabajadores estaban expuestos a concentraciones elevadas de microorganismos perjudiciales para su salud. Era necesaria la adopción de medidas preventivas.

AUTORES	<i>Rafał L. Górny, Małgorzata Gołofit-Szymczak, Marcin Cyprowski, Anna Ławniczek-Wałczyk, Agata Stobnicka, Lidia A. Wolska</i>
DOI	<i>https://doi.org/10.26444/aaem/172770</i>
PUBLICACIÓN	<i>Annals of Agricultural and Environmental Medicine, 2023, Volumen 30, Número 3, pp. 432-454</i>

TEMÁTICA: Exposición

ARTÍCULO 2:

Association between pain intensity, neck disability index, and working conditions among women employed in horticulture

Introduction and objective: One of the most frequent musculoskeletal disorders is neck pain (NP). NP can be associated with occupational activities and is more common among females than males. Horticulture is a branch of agriculture in which work is intensively manual, and characterized by repetitive tasks. The aim of the cross-sectional study was to analyze the association between pain intensity, neck disability index (NDI), and working conditions in terms of selected factors related to work in horticulture.

Material and methods: 44 women employed in horticulture met eligibility criteria (experienced necked pain). Five factors related to working conditions were investigated: work experience, upper extremity position, head position, prophylaxis, and stress frequency. NDI and visual analog scale (VAS) were used to investigate pain intensity and disability.

Results: It was found that the position of the upper limb at work and the frequency of stress were significantly associated with the VAS score ($p=0.046$ and $p=0.02$, respectively). With regard to NDI total score, a statistically significant association was found between work experience and stress frequency ($p=0.02$ and $p=0.01$, respectively). Analysis of the relationship between VAS and NDI total score showed a statistically significant weak positive correlation ($R=0.39$; $p=0.01$).

Conclusions: NP and NDI are related to the activities that women working in horticulture have to perform. Stress seems to be an important factor in cervical problems among female workers leading to an increase in NP and disability

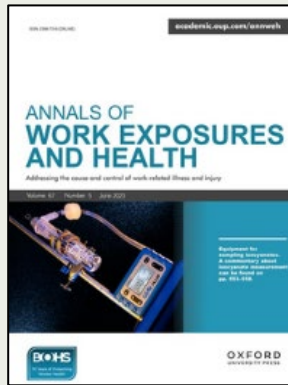
¿De qué trata este artículo?

Relación entre la intensidad del dolor, el índice de discapacidad del cuello y las condiciones laborales entre mujeres empleadas en la horticultura

Puesto que en el cuello es común la aparición de trastornos musculoesqueléticos, se estudió la relación entre la intensidad del dolor, el índice de discapacidad del cuello y las condiciones de trabajo en la horticultura. Participaron 44 mujeres de este ámbito que tenían problemas de cuello. Como condiciones de trabajo se analizó la experiencia laboral, la posición de dos zonas corporales (extremidades superiores y cabeza) y el estrés. También se emplearon técnicas para el análisis de la intensidad del dolor y discapacidad del cuello. Los resultados mostraron que sí se encontró relación entre las labores de las trabajadoras y el dolor de cuello. Uno de los factores de riesgo más relevantes fue el estrés.

AUTORES	<i>Agata Czepińska, Magdalena Zawadka, Alicja Wójcik-Zaluska, Agnieszka Rzezak-Siwiec, Piotr Gawda</i>
DOI	<i>https://doi.org/10.26444/aaem/162028</i>
PUBLICACIÓN	<i>Annals of Agricultural and Environmental Medicine, 2023, Volumen 30, Número 3, pp. 531-535</i>

TEMÁTICA: Riesgo Físico



ANNALS OF WORK EXPOSURES AND HEALTH

ARTÍCULO 3:

Herbicide exposure during occupational knapsack spraying in French gardeners and municipal workers

Context: There is a lack of data on pesticide exposure levels during spraying with a knapsack, while it could have important implications for their users' health.

Methods: We assessed levels and determinants of exposure in 24 male private landscapers/gardeners and municipal workers in France in 2011. Actual dermal exposure to glyphosate was assessed with cotton undergarments and gloves, and a cotton coverall changed between mixing and spraying to assess the contribution of each phase and body area to overall contamination. A field monitor observed the whole workshift and filled in a standardized observation grid.

Results: The median actual contamination was 5,256 μg for the body, and 4,620 μg for hands. Spraying was more exposing than mixing/loading for all body parts except hands, which contributed to nearly 90% of body exposure during mixing/loading, and 30% during spraying, followed by back (14%). In the most exposed quartile, levels were close to some observations in agriculture.

Conclusion: Our study provides new data on pesticide exposure levels of knapsack sprayer users; it should lead to a reinforced prevention, in order to make exposures as low as possible and lessen the risk of chronic diseases.

¿De qué trata este artículo?

Exposición a herbicidas durante la fumigación en el trabajo con mochila en jardineros y trabajadores municipales franceses

Los trabajadores que realizan fumigación con mochila están expuestos a niveles de pesticidas que pueden afectar a su salud. Se analizaron estos niveles en 24 trabajadores hombres en Francia. Se evaluó la exposición dérmica en diferentes condiciones. La pulverización del producto suponía una exposición mayor que la mezcla en cualquier zona corporal, menos en las manos. Se debía prevenir este riesgo para evitar la aparición de enfermedades.

AUTORES	<i>Mathilde Boulanger, Lucie de Graaf, Romain Pons, Valérie Bouchart, Mathilde Bureau, Yannick Lecluse, Matthieu Meryet-Figuere, Séverine Tual, Isabelle Baldi, Pierre Lebailly</i>
DOI	<i>https://doi.org/10.1093/annweh/wxad045</i>
PUBLICACIÓN	<i>Annals of Work Exposures and Health, 2023, Volumen 67, Número 8, pp. 965-978</i>

TEMÁTICA: Pesticidas

ARTÍCULO 4:

Non-ionizing radiation modeling to predict ambient irradiance in work areas at an indoor cannabis farm

Agricultural workers frequently experience potentially hazardous exposure to non-ionizing radiation from both solar and artificial sources, and measurement of this exposure can be expensive and impractical for large populations. This project develops and evaluates a vegetative radiative transfer model (VRTM) to predict irradiance in a grow room of an indoor cannabis farm. The model uses morphological characteristics of the crop, manufacturer provided lamp emissions data, and dimensional measurements of the grow room and cannabis hedgerows to predict irradiance. A linear regression comparing model predictions with the measurements taken by a visible light spectroradiometer had slopes within 23% of unity and R² values above 0.88 for visible (400–700 nm), blue (400–500 nm), green (500–600 nm), and red (600–700 nm) wavelength bands. The excellent agreement between the model and the measured irradiance in the cannabis farm grow room supports the potential of using VRTMs to predict irradiance and worker exposure in agricultural settings. Because there is no mechanistic difference between visible and other non-ionizing wavelengths of radiation in regards to mechanisms of radiative transfer, the model developed herein for visible wavelengths of radiation should be generalizable to other radiation bands including infrared and ultraviolet radiation.

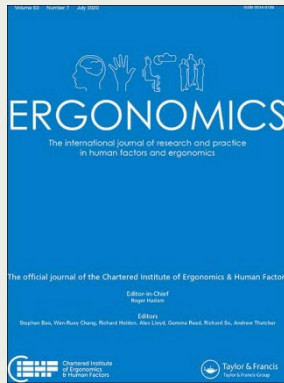
¿De qué trata este artículo?

Modelado de radiación no ionizante para predecir la irradiancia ambiental en áreas de trabajo en una granja de cannabis cubierta

Los agricultores se exponen a radiación no ionizante que puede ser perjudicial para su salud. Esta viene tanto del sol como de fuentes artificiales. En este estudio se desarrolló un modelo para la predicción de la irradiancia, concretamente en un cultivo de cannabis de interior. Para ello, se emplearon datos de las lámparas (según fabricante), morfología del cultivo, etc. La información obtenida por el modelo se comparó con datos que se tomaron con un instrumento medidor de radiación, obteniéndose una buena coincidencia entre ambos. Por tanto, el modelo permitía estudiar la exposición a esta radiación por los trabajadores de la agricultura.

AUTORES	<i>Maximilian Chmielinski, Michael G Yost, Martin Cohen, Mehlika Inanici, Christopher D Simpson</i>
DOI	<i>https://doi.org/10.1093/annweh/wxad048</i>
PUBLICACIÓN	<i>Annals of Work Exposures and Health, 2023, Volumen 67, Número 9, pp. 1088-1098</i>

TEMÁTICA: Exposición



ERGONOMICS

ARTÍCULO 5:

Forces required to operate controls on agricultural all-terrain vehicles: implications for youth

All-terrain vehicle (ATV) crashes are among the leading causes of injury and death among youth in the agriculture industry. It is hypothesised that youth are involved in ATV-related incidents because they cannot effectively activate the vehicle's controls. This study evaluated potential discrepancies between the required activation forces of the controls of fifty-four utility ATVs and the strength of male-and-female youth of varying ages (6–20 years old) and strength percentiles (5th, 50th, and 95th). The activation forces of the ATVs' controls were measured experimentally, while the youth's corresponding strength was retrieved from the literature. The results of this study demonstrated a physical mismatch between the forces required to operate ATV controls and youth's strength. Turning the handlebar, pressing the footbrake, and pushing the ATV off are the most difficult tasks for ATV operation. These discrepancies compromise the youth's ability to ride ATVs, increasing their risk of crashes.

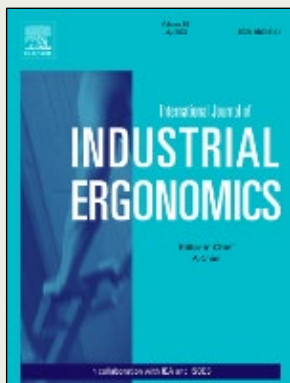
¿De qué trata este artículo?

Fuerza necesaria para manejar los controles de vehículos agrícolas todoterreno: implicaciones para los jóvenes

Entre los desencadenantes de lesiones y muertes en jóvenes del sector de la agricultura destacan los accidentes con vehículos todoterreno. Esta investigación se centró en la suposición de que una de las causas podía ser que los jóvenes no tuvieran la fuerza necesaria para manejar fácilmente los controles de estos vehículos. Se analizó la diferencia entre la fuerza necesaria para su manejo (se obtuvo por medición) y la de jóvenes (hombres y mujeres) con una edad comprendida entre 6 y 20 años (se obtuvo por medición experimental). Se analizaron 54 vehículos de este tipo. Se concluyó que sí había diferencia y por este motivo los jóvenes se exponen a mayor riesgo de accidente. El giro del manillar o pisar el freno eran algunas de las tareas más complejas.

AUTORES	<i>Guilherme De Moura Araujo, Farzaneh Khorsandi Kouhanestani, Fadi Fathallah</i>
DOI	<i>https://doi.org/10.1080/00140139.2022.2144953</i>
PUBLICACIÓN	<i>Ergonomics, 2023, Volumen 66, Número 9, pp. 1280-1294</i>

TEMÁTICA: Vehículos y maquinaria agrícola



INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS

ARTÍCULO 6:

Investigation of muscle synergies and their consistency among fresh fruit bunches manual harvesters in a real-life oil palm industry

Oil palm industry still relies on manual harvesting, a physicality-reliant task that was found related to the occurrence of musculoskeletal disorders (MSDs) among the harvesters. Through experience, common muscle synergies could be found among healthy subjects, which could be useful for screening any possible musculoskeletal disorders. This study investigated and confirmed the consistency of the muscle synergies used by healthy, well-trained harvesters during a real-life fresh fruit bunches (FFB) manual harvesting task with eight enrolled subjects. The subjects' muscle synergies during the manual harvesting were investigated from seven upper limb muscles in an outdoor environment. Our results demonstrated that the harvesters consistently used three muscle synergies to perform the manual harvesting task, dedicated to different upper body parts (neck, upper arm, and lower back). The consistent number of synergies was accompanied by high intra- and inter-subject similarities (similarity index >0.7) found in the contribution of muscle in the synergies (weighting coefficient). On the other hand, the alteration in activation timing ($SI < 0.6$) in the harvesting movement was presumed to be related to the adaptation to environmental constraints, which were also observed in other relevant studies. The result, therefore, confirmed consistent muscle synergies among the oil palm harvesters even in an uncontrolled outdoor environment, providing a reference that brings benefits to the knowledge in the screening of musculoskeletal disorders among the harvesters.

¿De qué trata este artículo?

Investigación de sinergias musculares y su consistencia entre cosechadoras manuales de racimos de fruta fresca en una industria de palma aceitera

La recolección en palma aceitera se realiza manualmente, exponiéndose sus trabajadores a trastornos musculoesqueléticos (TME). Se analizó si en agricultores sanos y entrenados, que se encargaban de la recolección, era constante la forma en que los músculos trabajaban juntos para llevar a cabo una labor. Se evaluó a ocho trabajadores al aire libre y siete músculos pertenecientes a las extremidades superiores. Los resultados indicaron la consistencia de tres sinergias musculares y sirvieron de referencia para evitar TME.

AUTORES	<i>Yu Xuan Teo, Yon Sin Chan, Surya Girinatha Nurzaman, Darwin Gouwanda, Alpha Agape Gopalai</i>
DOI	<i>https://doi.org/10.1016/j.ergon.2023.103499</i>
PUBLICACIÓN	<i>International Journal of Industrial Ergonomics, 2023, Volumen 97, 103499</i>

TEMÁTICA: Riesgo físico

ARTÍCULO 7:

Prevalence of musculoskeletal disorders and postural analysis of beekeepers

Work-related musculoskeletal disorders (WRMSDs) lead to fatigue and decreased productivity in workers, resulting in the need for many affected individuals to seek medical treatment annually. Beekeepers, like other agricultural workers, are susceptible to WRMSDs due to the continuous demands of their work and the repetitive movements involved. Thus, the objective of this study is to determine the prevalence of WRMSDs and assess the level of risk associated with different postures among beekeepers to improve their musculoskeletal health. To achieve this, a cross-sectional study was conducted involving 33 beekeepers, consisting of two stages. Firstly, the Nordic Questionnaire was utilized to assess the prevalence of WRMSDs. Subsequently, the Ovako Working Posture Analysis System (OWAS) was employed to analyze and categorize the riskiest postures into four levels of corrective measures. The findings indicate that the most commonly affected areas were the back (51.5%) and waist (45.4%). The occurrence of WRMSDs in various body regions was significantly associated with the beekeepers' years of experience and weekly working hours. Additionally, the prevalence of neck and back pain was significantly related to their body mass index (BMI). The OWAS postural analysis revealed that the back (36.75%) and arm (21.08%) regions required corrective measures as soon as possible (level III), while the back (26.47%) and legs (14.70%) fell under the category of corrective measures needed in the near future (level II). Combining the postural analysis results, 28.43% were classified as Action Levels (AL) II, 37.73% as level III, and 0.98% as level IV. This study demonstrates that WRMSDs are relatively common among beekeepers, primarily due to their extensive work experience and the adoption of awkward postures during their tasks. As a result, recommendations regarding ergonomics and physiotherapy are provided to alleviate pain and reduce the strain on critical postures.

¿De qué trata este artículo?

Prevalencia de trastornos musculoesqueléticos y análisis postural de apicultores

Se estudiaron los trastornos musculoesqueléticos (TME) en apicultores y se analizó el nivel de riesgo de cada una de sus posturas adoptadas. La investigación englobó a 33 trabajadores. Se utilizaron dos métodos de evaluación: Cuestionario Nórdico y método OWAS (Ovako Working Posture Analysis System). Algunos resultados mostraron que las partes del cuerpo más perjudicadas fueron la espalda y la cintura. Según OWAS, en la espalda y brazos se requerían cambios cuanto antes. El desarrollo de TME estaba relacionado con los años de experiencia y las horas de trabajo a la semana.

AUTORES	<i>Mohsen Rasoulivalajoozi, Mojtaba Rasouli, Carmela Cucuzzella, Tsz Ho Kwok</i>
DOI	<i>https://doi.org/10.1016/j.ergon.2023.103504</i>
PUBLICACIÓN	<i>International Journal of Industrial Ergonomics, 2023, Volumen 98, 103504</i>

TEMÁTICA: Riesgo físico



JOURNAL OF AGROMEDICINE

ARTÍCULO 8:

A Narrative Review of Fatigue in Agriculture and Its Impact on Injury and Fatality in Australia

Objectives: To identify current knowledge about the role of fatigue in occupational injury in the agricultural sector and briefly assess potential intervention approaches.

Methods: Narrative review of peer reviewed literature (in English) from 2010 to 2022 focusing on fatigue in agricultural and other sectors. Data were extracted from Medline, Scopus, and Google Scholar.

Results: The initial search revealed 6,031 papers, of these 33 met the inclusion criteria. The literature unanimously agreed that fatigue contributes to occupational injury in agriculture and related industries. However, there was a scarcity of literature specific to Australia or agriculture. This limits the ability to draw conclusions about the true relationship between fatigue and injury.

Conclusion: While fatigue is likely a major contributor to occupational injury in Australian agriculture, the limited literature impedes the ability to draw conclusions and extrapolate interventions used by other industries that are practical and feasible, to agriculture. Future studies should establish the nature of the problem in Australian agriculture and consult with members of the sector to establish the best interventions to ameliorate the problem, then implement and robustly evaluate intervention studies.

¿De qué trata este artículo?

Una revisión bibliográfica de la fatiga en la agricultura y su impacto en las lesiones y las muertes en Australia

El objetivo se basó en estudiar la relación entre la fatiga y las lesiones laborales en agricultura. Se llevó a cabo una revisión bibliográfica del período comprendido entre 2010 y 2022 sobre la fatiga en agricultura y otros ámbitos. Para la búsqueda se utilizaron Medline, Scopus y Google Scholar. Se obtuvieron 6031 artículos, pero solamente se seleccionaron 33. Se determinó que la fatiga influía en la aparición de lesiones laborales en la agricultura y ámbitos relacionados. Pocos estudios se centraron en Australia, por lo que se concluyó la necesidad de llevar a cabo futuros estudios basados en la agricultura australiana.

AUTORES	<i>Jaimi-Lee Summers, Kerri-Lynn Peachey, Tony Lower</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2215221</i>
PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 621-639</i>

TEMÁTICA: Seguridad y salud general

ARTÍCULO 9:

On-Farm Health Screening Needs of Immigrant Dairy Workers in the Texas Panhandle and South Plains

The objective of this pilot study was to determine the health needs of dairy farm workers and the feasibility of on-farm health risk screenings in the Texas Panhandle and South Plains. A cross-sectional study design was used to collect survey responses concerning health needs, occupational, and economic characteristics among 300 dairy workers between April 2020 and July 2021. Participants were predominantly immigrant Hispanic (88.8%) males (83.0%) of approximately 34.4 (SD 9.9) years of age, worked 6.0 (SD 0.4; Range 3–7) days a week and 9.9 (SD 1.5; Range 6–13) hours a day, earning a mean hourly rate of \$13.40 (SD \$2.80). Participants reported interest in attending on-farm health risk screenings (93.8%) as well as receiving a COVID-19 vaccine if it became available (86.4%). Health service categories were ranked from: (1st “most important”) preventative care (Mean Rank 2.3), (2nd) laboratory and diagnostic care (Mean Rank 2.6), (3rd) nutritional and physical fitness support (Mean Rank 2.8), (4th) mental health care (Mean Rank 3.4), and (5th) workplace interventions (Mean Rank 3.6). Participants reported obtaining health information predominantly from internet searches (32.0%) and social media (17.7%). Findings suggest there is need and interest for on-farm health risk screenings and education among immigrant dairy workers in the Texas Panhandle-South Plains region. Addressing known barriers to health should be paramount to the organization of on-farm health risk screenings.

¿De qué trata este artículo?

Necesidad de evaluar la salud en granjas de trabajadores lecheros inmigrantes en el Mango de Texas y las Llanuras del Sur

Se identificaron las necesidades relativas a la salud de los empleados de granjas lecheras y la viabilidad de llevar a cabo evaluaciones de riesgos en el Mango de Texas y en las Llanuras del Sur. Participaron 300 trabajadores de granjas lecheras, principalmente inmigrantes hispanos, en una encuesta acerca de las necesidades de salud, entre otros ítems. Se llevó a cabo entre abril de 2020 y julio de 2021. Los resultados mostraron que la mayoría de trabajadores querían que se realizaran evaluaciones de riesgos para su salud en la granja y recibir vacuna COVID. Además, indicaron que la información que tenían sobre salud la habían obtenido mediante consultas en internet y redes sociales. Se concluyó la necesidad de estas evaluaciones de riesgos, junto con la formación de trabajadores.

AUTORES	<i>Anabel Rodriguez, Sofia N. Lopez, David I. Douphrate</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2200418</i>
PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 665-675</i>

TEMÁTICA: Seguridad y salud general

ARTÍCULO 10:

Measuring Gatekeeper Instructor Comfort to Inform Suicide Prevention Train-The-Trainer Recruitment & Training in Agricultural Communities

Farmers experience psychological distress and suicide at consistently higher rates than workers in other industries. A gatekeeper is an individual who has been trained to recognize warning symptoms of possible suicidal ideations in others. Gatekeeper programs are recognized by the federal Substance Abuse and Mental Health Services Administration as a best practice for suicide prevention. While gatekeeper programs offer promise to addressing the increasing worldwide suicide rate, how to develop these networks in communities with largely ingrained stigma and taboo related to mental health and suicide remains unanswered. Three of this study's researchers were part of the development and pilot of an agricultural community gatekeeper program and questioned how gatekeeper instructor psychological comfort could be conceptualized and operationalized for the purpose of informing gatekeeper instructor recruitment and training. After a thorough review of the literature, the researchers constructed a conceptual developmental model of gatekeeper instructor comfort and created a Gatekeeper Instructor Comfort Measure instrument which was then piloted with Kentucky K-12 and university agricultural educators. The researchers of this study employed the Rasch model to determine whether the developmental model of gatekeeper instructor comfort held together empirically. Infit and outfit mean squares (0.73 to 1.33) indicate that the items measure one construct, or are unidimensional, while person reliability and separation statistics indicate that the Gatekeeper Instructor Comfort Measure is composed of enough items to differentiate respondents into almost four strata of gatekeeper comfort. The Gatekeeper Instructor Comfort Measure's fit to the Rasch model indicates that the instrument meets the requirements of invariant measurement and should serve as a useful measure for other researchers. The instrument's item difficulty hierarchy also serves as a guide for those training gatekeepers on how to target different gatekeeper outcomes sequentially or developmentally. Researchers recommend restructuring item responses to enable greater discrimination between categories and then piloting the instrument again with a more diverse sample. The revised measure could be used pre- and post-gatekeeper instructor training to determine the impact of training on gatekeeper comfort.

¿De qué trata este artículo?

Evaluación emocional de las personas encargadas de la prevención del suicidio en comunidades agrícolas

Las tasas de suicidio en agricultura son superiores a las de trabajadores de otros sectores. Los programas “Gatekeeper” se consideran una de las prácticas más acertadas para la prevención del suicidio. Se basan en una persona encargada de identificar síntomas de suicidio en los trabajadores. En este estudio se centraron en medir el bienestar emocional de estas personas, mediante el desarrollo de un modelo conceptual y creación de un instrumento para su medición.

AUTORES	<i>Carolyn Oldham, Kristie Guffey, Kim Link, Shannon Sampson, Tyler McQueen, Anna Stanton</i>
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TEMÁTICA: Riesgo salud mental

ARTÍCULO 11:

Occupational Bioaerosol Exposures Associated with Poultry Farming

This study aimed to investigate occupational exposure to particulate dust, endotoxin, and (1–3)- β -D-glucan among workers involved in various poultry farming activities. A total of 298 personal samples were collected from randomly selected individuals from exposure groups based on distinct poultry farming activities comprising broiler farms, rearing, laying, hatchery, and catching activities. Aside from the inhalable particulate dust concentration that was determined, filter extracts were also analyzed for (1–3)- β -D-glucan and endotoxin using the endpoint GlucateLL® and Limulus amoebocyte lysate (LAL) assays, respectively. Data were analyzed using STATA 12 and linear regression models developed. The mean (GM) dust particulate concentration was 11.04 mg/m³ (GSD = 3.87); 2298 endotoxin units (EU/m³) (GSD = 10.56) and 149 ng/m³ for (1–3)- β -D-glucan (GSD = 4.62). A modest positive correlation was observed between log-transformed endotoxin and (1–3)- β -D-glucan concentrations (Pearson $r = 0.44$, $p < .001$), whilst a moderate negative correlation was observed for inhalable dust particulate and (1–3)- β -D-glucan (Pearson $r = -0.33$, $p < .001$). However, there was a very poor correlation between inhalable dust and endotoxin (Pearson $r = -0.02$, $p < .001$). In the regression models, exposure group based on the nature of farming activity explained 50% of the variability in dust particulate and glucan levels. For dust particulate, rearing activities were significant predictors of higher dust levels compared to hatchery work, while rearing, laying, broiler and catching activities were significant predictors of higher endotoxin or glucan levels. Furthermore, working in a small broiler was a significant determinant of elevated glucan exposures. Farms using automated laying activities had significantly higher particulate levels compared to those using manual laying activities. This study revealed that workers engaged in poultry farming activities were exposed to significantly high levels of inhalable particulate dust, endotoxin, and (1–3)- β -D-glucan concentrations, posing an increased risk for adverse respiratory health effects in these farm workers.

¿De qué trata este artículo?

Exposiciones durante el trabajo a bioaerosoles asociados con la avicultura

Se analizaron las exposiciones de trabajadores a bioaerosoles durante el trabajo en diferentes tareas de avicultura. Se recopilaron 298 muestras de trabajadores. Se determinó riesgo para la salud respiratoria, ya que estaban expuestos a niveles elevados de partículas de polvo, endotoxinas y glucano. Entre otros resultados, los niveles de polvo más elevados se identificaron durante la actividad de cría.

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DOI	<i>https://doi.org/10.1080/1059924X.2023.2206405</i>
PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 703-713</i>

TEMÁTICA: Exposición

ARTÍCULO 12:

Animal-Related Injuries and Fatalities in the AgInjuryNews Collection

Objectives: This research had three objectives. The first was to characterize reports of animal-related injuries found in the AgInjuryNews Dataset. The second objective was to compare the results of the AgInjuryNews reports to that of the Regional Rural Injury study. The third objective was to qualitatively and quantitatively assess the utility of using the AgInjuryNews database.

Methods: A total of 104 reports on animal-related incidents representing 112 victims were sourced from AgInjuryNews. Chi square tests were performed comparing fatal and non-fatal injuries across age, gender, role in incident, animal, and activity. Additional chi square tests were performed to compare AgInjuryNews data with the results of Regional Rural Injury Study II across age, gender, animal, and activity. Utility of the dataset was assessed by examining the distribution of reports across states, the availability of articles, and qualitative observations.

Results: Chi square results comparing fatal and nonfatal injuries were significant for victim gender. Results of the comparison of the two studies were significant for age and activity. A mismatch between the states with the highest populations of large animals and the states with the most reports in the AgInjuryNews.org database was detected. Approximately 42% of reports the original articles were not accessible. Media bias plays a role in which cases are reported, but the size and accessibility of the dataset increases its utility.

Conclusion: Despite the limitations inherent to the dataset, the amount of freely accessible information and the level of insight provided make AgInjuryNews a valuable resource for agricultural injury research.

¿De qué trata este artículo?

Lesiones y muertes relacionadas con animales en la colección AgInjurynews

Este estudio se basó en el análisis del conjunto de datos de “AgInjurynews”, del que se obtuvieron 104 informes acerca de incidentes provocados por animales, que englobaron a 112 víctimas. Se estudiaron las lesiones mortales y no mortales según la actividad, edad, sexo, incidente y animal. Se compararon los datos con otro recurso. Se analizó cualitativa y cuantitativamente el uso de “AgInjurynews”. Se concluyó que se trata de una base de datos con información de libre acceso y conocimiento que permite investigar lesiones en el sector de la agricultura.

AUTORES	<i>Nicole Becklinger</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2198525</i>
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TEMÁTICA: *Accidentes y enfermedades laborales*

ARTÍCULO 13:

Pesticide Take-Home Pathways, Storage, and Application Methods Among Hmong Farmers in Central Valley, California

Objective: Pesticide exposure via take-home pathways is a major health concern among farmers. However, little is known about the effects of pesticide take-home pathways on small-scale Hmong farmers in the Central Valley. This study explored factors that contribute to pesticide exposure via the take-home pathway among small-scale Hmong farmers in the Central Valley.

Methods: Detailed ethnographic observations of small-scale farms and corresponding homes were coupled with in-depth qualitative interviews with Hmong farmers to assess the extent of the pesticide take-home pathway.

Results: The study found daily challenges and numerous ways that pesticide particles may be introduced into farmers' homes. Given the paucity of research about Hmong farmers' pesticide take-home pathways, the study's findings advance the scholarship on pesticide exposures in the Hmong farmer community.

Conclusion: This study advocates for more culturally and linguistically appropriate pesticide exposure training and educational programs tailored to Hmong farmers in the United States.

¿De qué trata este artículo?

Vías para llevar a casa pesticidas, almacenamiento y métodos de aplicación entre agricultores hmong en el Valle Central de California

El objetivo fue estudiar los factores que provocan el transporte involuntario de pesticidas a casa por parte de los agricultores. Se analizan las vías a través de las que los pesticidas pueden ser transportados desde el lugar de trabajo hasta sus hogares. Se centró en agricultores hmong del Valle Central. Se realizaron entrevistas y observación etnográfica. Se identificaron diferentes formas en las que las partículas de pesticidas llegaban a las casas de estos trabajadores. Se concluyó la necesidad de formación sobre exposición a estos productos.

AUTORES	<i>Chia Thao, Irene H. Yen, Sandie Ha, Nancy J. Burke</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2199001</i>
PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 726-733</i>

TEMÁTICA: Pesticidas

ARTÍCULO 14:

Risks & Protective Factors for Depression & Suicide Among Hawai'i Agricultural Producers

Studies have consistently shown that agricultural producers in the continental United States have disproportionately high rates of depression and suicide as compared to other occupations. It is not known whether this is true in Hawai'i, which is both geographically distinct and ethnically diverse. To examine rates of depression and suicide as well as potential risk and protective factors, a state-wide mental health needs assessment was conducted from November 2021 to September 2022. We conducted a survey with a nonprobability-based convenience sample targeting agricultural producers across Hawai'i, and performed descriptive statistics and logistic regression analyses. In a sample of 408 respondents, 35% (n = 143) had clinical depression symptomatology, and 8% (n = 33) had suicidal ideation based on the Patient Health Questionnaire-9. Older age was slightly protective in that every year of increase in age was associated with 0.98 times (95% CI: 0.96, 0.99) reduced odds of depression symptomatology, and 0.96 times (95% CI: 0.94, 0.98) reduced odds of suicidal ideation. Identifying as East Asian had 2.04 times (95% CI: 1.16, 3.61) higher odds of depression symptomatology, and Southeast Asian had 3.04 times odds (95% CI: 1.15, 8.00) of suicidal ideation. However, in the presence of stress and coping variables, the demographic factors became statistically non-significant. Instead, feeling stressed, uncertainty as the stressor, and media-focused coping were significant risk factors in increasing two to eight times the odds of depressive symptoms. For suicidal ideation, depression symptomatology increased odds by 31.95 (95% CI: 5.60–182.32), using media-focused coping increased 5.20 odds (95% CI: 1.66, 16.27), but problem-focused coping decreased 0.32 times odds (0.10, 0.99). Culturally specific prevention and intervention measures should be tailored for Hawai'i agricultural producers with an emphasis toward younger, East, and Southeast Asian producers and attention toward providing skillful coping strategies for effective stress regulation and management.

¿De qué trata este artículo?

Riesgos y factores de protección de la depresión y el suicidio entre los productores agrícolas de Hawái

Se llevó a cabo un análisis de la salud mental de agricultores de Hawái desde noviembre de 2021 hasta septiembre de 2022. Se realizó una encuesta a 408 participantes. Un 35% tenían síntomas de depresión y un 8% tenían ideas suicidas. Una mayor edad se asociaba con síntomas menores de depresión y suicidio. También se encontraron factores demográficos que aumentaban ambos síntomas, pero que dejaban de ser importantes en presencia de estrés o superación. El estrés, incertidumbre y superación fueron factores de riesgo que aumentaron la probabilidad de sufrir depresión. Se deben desarrollar medidas preventivas para estos agricultores.

AUTORES	<i>Thao N. Le, Wei Zhang, Emma Brown, Jim Crum, Alex Wong</i>
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TEMÁTICA: Riesgo salud mental

ARTÍCULO 15:

Sense of Meaning and Purpose Making Mitigates the Experience of Stress Among Hawai'i Farmers

Farming is widely acknowledged as being extremely challenging and stressful, yet also potentially very meaningful as farming is an important element of any society and connected to our cultural heritage. Only a few studies have empirically examined the association between sense of purpose in farming and well-being/happiness. This study explored whether a sense of meaning and purpose in being a farmer could mitigate the experience of stress. A cross-sectional survey between November 2021-September 2022 was conducted with a sample of 408 Hawai'i agricultural producers. Descriptive statistics and logistic regressions were conducted to explore factors that predicted farmers' endorsement of high meaning and purpose, and whether meaning and purpose could dampen the impact of stressors on the experience of stress. Results revealed that Hawai'i farmers were highly stressed but also had high sense of meaning and purpose. Predictors of meaning and purpose included operating smaller farms of 1–9 acres and having 51% or greater percentage of income from farming. Meaning and purpose in turn decreased odds of stress, and showed an interaction with stressor intensity such that the stress buffering effect of meaning was more salient for those with lower stressors than those with higher stressors OR = 1.12 (CI = 1.06,1.19). One possible stress management and resilience technique is to highlight and strengthen farmers' sense of meaning and purpose in the farming endeavor.

¿De qué trata este artículo?

El significado y propósito del trabajo mitigan la experiencia de estrés entre los agricultores hawaianos

Se analizó si el propósito de ser agricultor y si la percepción del trabajo agrícola como significativo podían evitar el estrés de los trabajadores de este sector. Para ello, se llevó a cabo una encuesta a 408 agricultores hawaianos en el período comprendido entre noviembre de 2021 y septiembre de 2022. Los resultados indicaron que a pesar de que estos agricultores sufrían estrés, sí tenían una alta percepción de que su trabajo era significativo y tenía un propósito. Además, los agricultores que sí tenían estas percepciones experimentaban menos estrés. Se concluyó que podía ser una buena forma para gestionar el estrés y aumentar la resiliencia en los trabajadores agrícolas.

AUTORES	<i>Thao N. Le, Emma Brown, Wei Zhang</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2215238</i>
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TEMÁTICA: Estrés laboral

ARTÍCULO 16:

Farmers' Knowledge and Practices About Ticks and Tickborne Diseases in Illinois

Objective: Tickborne diseases (TBDs) in Illinois have increased in recent years. A growing body of literature indicates that the risk of exposure to ticks and tickborne diseases is higher among outdoor workers, including farmers. However, information is lacking on awareness of ticks and tickborne diseases among this demographic. This study aimed to determine the knowledge and awareness among Illinois farmers regarding ticks and tickborne diseases.

Methods: A Knowledge, Attitudes & Prevention practices (KAP) survey was developed and administered to capture information regarding farmers' knowledge and attitudes about ticks and TBDs. Tick drags were conducted on a subset of properties as an incentive to complete the survey and to compare farmers' knowledge or expectations of ticks on their land with ticks collected.

Results: Fifty farmers participated in the survey, and 17 allowed tick drags. Only 60% of respondents had at least moderate knowledge about ticks gained through family and friends (56%), medical and healthcare personnel (48%), and the internet (44%). Responses varied by the type of commodity produced by the farmer. Fifty percent of participants reported knowledge about the blacklegged tick, 34% for the American dog tick, and 42% for the lone star tick; this knowledge also varied by farm type. Most farmers (54%) agreed that preventative behaviors could protect against tickborne diseases. Self-reported knowledge was significantly and directly associated with knowledge scores ($p < .001$).

Conclusion: Knowledge of ticks and TBDs was lower among crop farmers than beef or mixed commodity farmers, but farmers generally have moderate knowledge of tick species in Illinois. Many participants expressed low concern over contracting a TBD, but many were also dissatisfied with the level of tick prevention measures that they follow. These results can be utilized to fill in knowledge gaps and develop informational materials to help farmers protect themselves against ticks and TBDs.

¿De qué trata este artículo?

Conocimientos y prácticas de los agricultores sobre las garrapatas y las enfermedades transmitidas en Illinois

La información sobre garrapatas y las enfermedades que pueden transmitir es escasa entre los agricultores. Por tanto, esta investigación se centró en el conocimiento y concienciación sobre este tema. Uno de los instrumentos utilizados fue una encuesta de conocimientos, actitudes y prácticas preventivas relativas a las garrapatas y las enfermedades que transmiten. El 70% de los agricultores participantes en el estudio poseía información moderada sobre este tema, obtenida mediante familiares o amigos, personal sanitario o internet. Un 54% de los participantes afirmaban que la prevención podría protegerlos contra el riesgo de enfermedades. Gran parte de los encuestados no sentían preocupación por este tema, aunque muchos indicaban que las medidas preventivas eran insuficientes.

AUTORES	<i>Sulagna Chakraborty, Teresa L. Steckler, Peg Gronemeyer, Nohra Mateus-Pinilla, Rebecca Lee Smith</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2199003</i>
PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 756-768</i>

TEMÁTICA: *Accidentes y enfermedades laborales*

ARTÍCULO 17:

Anxiety and Associated Stressors Among Farm Women in England and Wales

Objectives: The findings presented here derive from a wider study that sought to establish a baseline understanding of mental health and wellbeing among the agricultural community in England and Wales. This paper focuses on selected questions that investigated levels of anxiety and associated stress factors among farm women, a group which has been relatively neglected within previous research on farming mental health in the United Kingdom.

Methods: A questionnaire survey was widely distributed to members of the agricultural community in England and Wales (n = 15,296) in both paper and online formats. The survey included a number of standardised instruments to assess mental health and wellbeing, including the Generalised Anxiety Disorder-7 scale (GAD-7). Focusing on a sub-sample of female respondents (n = 3487), this paper details the findings from the GAD-7, alongside those from a selection of other questions investigating sources of stress, loneliness and perceived business viability.

Results: A significant proportion of female respondents were experiencing anxiety at the time of survey completion, with 23.3% reaching the threshold for clinically relevant anxiety based on their GAD-7 scores (medium or severe anxiety, scores ≥ 10). A further 34.6% were classified as experiencing mild anxiety (scores 5–9) whilst 42.1% were not suffering from anxiety (scores 0–4). Medium/severe anxiety was identified as being associated with a number of stress factors, feelings of loneliness and pessimistic perceptions of farm business viability. There were important age-based differences, with working-aged women identified as more likely to suffer from anxiety, loneliness and certain stressors than older women.

Conclusion: The findings reported here indicate concerning levels of anxiety among farming women and this should be seen as a call to action. There are clear associations between anxiety and a range of stressors and, although we cannot ascertain causality, these point to issues that demand attention in efforts to improve mental health within this social group. The factors contributing to anxiety are, however, multiple and complex and farm women may be affected by particular gender-based challenges that have not yet been explicitly explored in relation to mental health. Further research is needed to investigate and understand these issues in greater depth.

¿De qué trata este artículo?

Ansiedad y factores estresantes asociados entre las agricultoras de Inglaterra y Gales

Se realizó un estudio sobre la ansiedad y los factores de estrés en agricultoras de Inglaterra y Gales mediante el uso de una encuesta. Los resultados mostraron que el 23,3% de las agricultoras sufrían ansiedad media o grave, el 34,6% leve y el 42,1% no tenían. El nivel grave se relacionaba con factores de estrés, soledad y una visión pesimista de la viabilidad de las empresas del sector de la agricultura. La edad también fue un factor que influía en la ansiedad. Existía la necesidad de implantar acciones para mejorar la salud mental de estas trabajadoras.

AUTORES	<i>Rebecca Wheeler, Matt Lobley</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2200421</i>
PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 769-783</i>

TEMÁTICA: Riesgo salud mental

ARTÍCULO 18:

Addressing Exoskeleton Implementation Challenges: Case Studies of Non-Acceptance in Agriculture

Objectives: The objective of this study was to detect success and failure factors for the implementation of passive exoskeletons in agriculture. Exoskeletons have been shown to reduce musculoskeletal loads during lab-based manual tasks, but long-term implementation experiences in agriculture are lacking.

Methods: We analyzed four intervention studies in agriculture focusing on methodological and contextual reasons why the trials were successful or unsuccessful. The study context, attempted intervention, and data collection of each field trial is compared. In the absence of long-term studies investigating the implementation and effectiveness of exoskeletons in agriculture, a set of multi-week pilot trials were initiated among German market vegetable farms and French vineyards from 2019 to 2022. Participant ratings, farm characteristics (e.g. employment duration and payment scheme) and intervention implementation characteristics (e.g. participation in implementation or language barriers) were analyzed using a mixed-methods approach to identify success and failure factors.

Results: The comparison of the studies showed that despite the organizational issues, there were several practical issues that limit the success of exoskeleton use in agriculture. We observed that participant rejection of the intervention is a major barrier to successfully conducting long-term field trials in agriculture. Factors like pain, discomfort, heat stress, or a lack of perceived benefits have been identified as failure factors but also the implementation process itself.

Conclusion: In addition to careful targeting of trial sites and inclusion of participatory elements in the implementation plan, successful implementation of exoskeletons in agriculture requires fundamental human factors development of the exoskeletons themselves. This will require better matching the physical needs of the workers, the production needs of the tasks, and compatibility with the environment.

¿De qué trata este artículo?

Abordar los desafíos de la implementación del exoesqueleto: estudios de caso de no aceptación en la agricultura

Se analizaron los factores de éxito y fracaso del uso de exoesqueletos en el sector de la agricultura. Los exoesqueletos ayudan a disminuir los trastornos musculoesqueléticos derivados de las labores manuales. Se evaluaron y compararon cuatro estudios que exponían intervenciones en agricultura de este tipo. Debido a que no había estudios a largo plazo sobre su eficacia y uso en este sector, se realizaron pruebas piloto de algunas semanas en explotaciones de hortalizas y viñedos de 2019 a 2022. La comparación de los estudios mostró que existían problemas que impedían el éxito de los exoesqueletos en agricultura. Una limitación para realizar estudios a largo plazo era que los trabajadores no querían participar en estas intervenciones. Se determinaron factores de fracaso como el estrés por calor, malestar, dolor, falta de beneficios y el proceso de implementación del exoesqueleto.

AUTORES	<i>Martina Jakob, Romain Balaguier, Hyunjin Park, Catherine Trask</i>
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PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 784-796</i>

TEMÁTICA: Riesgo físico

ARTÍCULO 19:

Rural and Agricultural Natural Disaster Stress and Recovery: A Comparison

This study used a novel survey instrument to evaluate the hypothesis that U.S. agricultural producers have significantly different stress and recovery experiences following acute-onset natural disaster compared to their non-agricultural counterparts. Participants were recruited through local organizations and targeted email and social media in communities in Arkansas and Nebraska that had experienced violent tornadoes in 2014 and/or severe flooding in 2019. The survey instrument incorporated the Brief Resilience Scale, the Revised Impact of Event Scale referencing two time points, the Posttraumatic Growth Inventory-Short Form, and original questions. Demographic, exposure, stress, and recovery measures were analyzed in SAS with Chi-square tests, t-tests, Wilcoxon tests, and multiple linear regression modeling to test for differences between agricultural and non-agricultural groups in resilience, event exposure, stress symptoms in the week after the event, stress symptoms in the month before the survey, a calculated recovery ratio, and posttraumatic growth. Analysis sample (N = 159) contained 20.8% agricultural occupation, 71.1% female, and 49.1% over age 55. No significant differences were found between agricultural and non-agricultural participants when comparing resilience, stress, or recovery ratio measures. Unadjusted posttraumatic growth score was significantly lower in the agriculture group ($P = .02$), and an occupation group by sex interaction was significantly associated with posttraumatic growth score ($P = .02$) when controlled for number of initial posttraumatic stress symptoms in the adjusted model, with agricultural women showing lower growth. Overall, there was no evidence of significant difference in disaster stress and recovery between agricultural and rural, non-agricultural groups in this study. There was some evidence that women in agriculture may have lower levels of recovery. Data indicated that rural residents continue to experience posttraumatic-type symptoms up to 8 years beyond the acute-onset natural disaster events. Communities should include strategies to support mental and emotional health in their preparedness, response, and recovery plans with intentional inclusion of agricultural populations.

¿De qué trata este artículo?

Estrés y recuperación ante desastres naturales rurales y agrícolas: una comparación

Se empleó una encuesta para analizar la hipótesis de que los agricultores de Estados Unidos sufren un nivel de estrés y una recuperación diferente a otros trabajadores tras un desastre natural. Participaron 159 trabajadores de Arkansas y Nebraska que habían vivido tornados en 2014 o inundaciones en 2019. Se compararon varias características. Entre otros, los resultados mostraron que no había mucha diferencia en el estrés y recuperación entre los trabajadores agrícolas y las personas de otros ámbitos. Se determinó la necesidad de mejorar la salud mental y emocional en la comunidad agrícola.

AUTORES	<i>Kristin K. Gaffney, Sharon Medcalf, Ellen Duysen, Christopher Wichman</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2230987</i>
PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 797-808</i>

TEMÁTICA: Riesgo salud mental

ARTÍCULO 20:

A Cross-Sectional Study of Farmer Health and Wellbeing in Norway: The HUNT Study (2017-2019)

Objectives: Obtain a broad impression of the health and wellbeing of working farmers in a representative population.

Methods: A cross-sectional study using data from a large, general population-based survey, The HUNT Study, Norway (HUNT survey 4, 2017–2019, response rate 54%). The study included 24,313 occupationally active participants aged 19 to 76 years, including 1,188 farmers. Prevalences are estimated for outcomes covering musculoskeletal, respiratory, and mental health as well as general health and life satisfaction, with adjustment for worker age and sex. The estimates for farmers are compared to skilled white collar workers and skilled manual workers.

Results: Farmers had a higher estimated prevalence of poor overall health (prevalence ratio [PR] 1.56 [95%CI 1.34, 1.82]), chronically impaired mobility (PR 1.83 [1.53, 2.20]), long-standing musculoskeletal pain or stiffness (PR 1.29 [1.21, 1.37]), work-related respiratory attack (PR 4.32 [3.67, 5.08]), depression symptoms (PR 1.30 [1.04, 1.61]) and symptoms of psychological distress (PR 1.23 [1.04, 1.47]) than skilled white collar workers. The estimated prevalence of poor overall health (PR 1.19 [1.00, 1.41]) and work-related respiratory attacks (PR 1.44 [1.24, 1.67]) was also higher for farmers than skilled manual workers, after adjustment for age and sex. Farmers had greater odds of rating themselves less satisfied with life in general than skilled white collar workers (adjusted OR 1.17 [1.04, 1.31]).

Conclusions: These results are consistent with previous research and add evidence that farm work is associated with high prevalences of a broad range of adverse health outcomes. The associations with chronically impaired mobility, long-standing musculoskeletal pain, and poor self-rated health were strong. The adjusted PRs for work-related respiratory attacks relative to both comparison groups were particularly high. More research is needed to identify and evaluate interventions that can improve farmer health.

¿De qué trata este artículo?

Un estudio transversal sobre la salud y el bienestar de los agricultores en Noruega: el estudio HUNT (2017-2019)

Este estudio se centró en la salud y bienestar de los trabajadores de la agricultura. Se emplearon datos de la encuesta del estudio HUNT de Noruega. Englobó a 24313 trabajadores, de los cuales 1188 eran del sector de la agricultura. Se determinó que los trabajadores agrícolas tenían peor salud en general, síntomas de depresión, problemas musculoesqueléticos y de movilidad, baja salud mental y problemas respiratorios ocasionados por el trabajo. Además, su satisfacción con la vida era menor que la de otros trabajadores.

AUTORES	<i>Natalie A. Steen, Steinar Krokstad, Magnhild Oust Torske</i>
DOI	<i>https://doi.org/10.1080/1059924X.2023.2229840</i>
PUBLICACIÓN	<i>Journal of Agromedicine, 2023, Volumen 28, Número 4, pp. 809-820</i>

TEMÁTICA: Seguridad y salud general