

Nº1

30 DE ABRIL 2021

Boletín de seguridad y salud en el trabajo del sector agrícola

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

<http://www.juntadeandalucia.es/empleo/webiaprl/lasa/>

Instituto Andaluz de Prevención de Riesgos Laborales



Junta de Andalucía
Consejería de Empleo, Formación
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NUEVOS TRABAJOS PUBLICADOS

1. ANNALS OF WORK EXPOSURES AND HEALTH

TÍTULO DEL TRABAJO	
Exposure and Absorption of PAHs in Wildland Firefighters: A Field Study with Pilot Interventions (<i>Exposición y absorción de HAPs en bomberos forestales: un estudio de campo con intervenciones piloto</i>)	
PUBLICADO EN:	Annals of Work Exposures and Health, Marzo 2021, Volumen 65, Número 2, pp. 148-161.
AUTORES:	Cherry, Nicola; Galarneau, Jean-Michel; Kinniburgh, David; Quemerais, Bernadette; Tiu, Sylvia; Zhang, Xu
DOI:	10.1093/annweh/wxaa064
RESUMEN:	<p>Objectives: There is limited knowledge of exposure to polycyclic aromatic hydrocarbons (PAHs) in wildland firefighters, or of the effectiveness of interventions to reduce this. This study of wildland firefighters assessed whether PAHs were present and considered respiratory protection and enhanced skin hygiene as possible interventions.</p> <p>Methods: 1-Hydroxypyrene (1-HP) was measured in urine samples collected pre-shift, post-shift, and next morning from wildland firefighters in Alberta and British Columbia. Skin wipes, collected pre- and post-shift, were analysed for eight PAHs. Breathing zone air samples were analysed for 11 PAHs. As pilot interventions, participants were randomized to either normal or enhanced skin hygiene. A sample of volunteers was assigned to a disposable N95 mask or a half facepiece mask with P100 organic vapour cartridge. Participants completed a brief questionnaire on activities post-shift and respiratory symptoms.</p> <p>Results: Non-smoking firefighters (66 male and 20 female) were recruited from 11 fire crews. Air sampling pumps were carried for the full shift by 28 firefighters, 25 firefighters wore masks (14 N95 and 11 P100); 42 were assigned to the enhanced skin hygiene intervention. Sixty had hot spotting as their main task. Air monitoring identified PAHs (benzo(b,j,k)fluoranthene in particulates, phenanthrene in the gaseous phase) for 6 of the 11 crews. PAHs (largely naphthalene) were found post-shift on 40/84 skin wipes from the hand and 38/84 from jaw/throat. The mean increase in 1-HP in urine samples collected after the shift (compared with samples collected before the shift) was 66 ng g(-1) creatinine (P < 0.001) with an increase over the shift found for 76% of participants. 1-HP in next morning urine samples was significantly lower than at the end of shift (a reduction of 39.3 ng g(-1): P < 0.001). The amount of naphthalene on skin wipes was greater at the end of the shift (post) than at the start (pre). The mean post-pre weight difference of naphthalene on skin wipes taken from the hand was 0.96 ng wipe(-1) (P = 0.01) and from the jaw/throat 1.28 ng wipe(-1) (P = 0.002). The</p>

	<p>enhanced skin hygiene intervention lead to a larger reduction in 1-HP between end of shift and next morning urine samples but only for those with naphthalene on skin wipes at the end of shift. The difference in 1-HP concentration in urine samples collected before and after the shift was reduced for those wearing a mask (linear trend $P = 0.063$, one-sided). In multivariable models, 1-HP at end of shift was related to gaseous phase phenanthrene, estimated from air sampling [$\beta = 318.2$, 95% confidence interval (CI) 67.1-569.2]. Naphthalene on hand skin wipes reflected work in hot spotting during the shift ($\beta = 0.53$, 95% CI 0.22-0.86).</p> <p>Conclusions: This study provided evidence of PAHs in the air and on the skin of many, but not all, fire crew. Absorbed PAHs, reflected in 1-HP in urine, increased over the shift. Results from the pilot interventions suggest that enhanced skin hygiene would reduce absorption post fire where PAHs had been accumulated on the skin, and that masks could be effective in reducing PAH inhalation exposure. Interventions to reduce PAH absorption are supported by the pilot work reported here and warrant further evaluation across a full fire season.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>Este estudio se basó en analizar la exposición de bomberos forestales a HAPs (hidrocarburos aromáticos policíclicos). Para ello, se analizó la orina de trabajadores, las toallitas de uso para la piel y el aire que respiraban. Además, se investigó el resultado de la aplicación de algunas medidas para su disminución, en concreto, el uso de protección de tipo respiratoria y la mejora en la higiene cutánea. Se concluyó la presencia de HAPs en la piel y aire para muchos trabajadores, pero no se mostró en todos los participantes. También se demostró que las medidas para su disminución fueron efectivas. La higiene cutánea para una menor absorción tras el desarrollo de un incendio y la protección respiratoria para disminuir la inhalación de HAPs.</p>

2. APPLIED ERGONOMICS

TÍTULO DEL TRABAJO	
<p>An ergonomics educational training program to prevent work-related musculoskeletal disorders to novice and experienced workers in the poultry processing industry: A quasi-experimental study <i>(Un programa de formación educativa en ergonomía para prevenir trastornos musculoesqueléticos relacionados con el trabajo para trabajadores novatos y experimentados en la industria de procesamiento de aves de corral: un estudio cuasi experimental)</i></p>	
PUBLICADO EN:	Applied Ergonomics, Enero 2021, Volumen 90, Número de artículo 103234.
AUTORES:	Denadai, Michelle Silveira; Alouche, Sandra Regina; Valentim, Daniela Pereira; Padula, Rosimeire Simprini
DOI:	10.1016/j.apergo.2020.103234
RESUMEN:	<p>This quasi-experimental study was conducted in a poultry processing industry with the aim of assessing the benefits of ergonomics educational training for novice and experienced workers in preventing work-related musculoskeletal disorders. Sociodemographic and occupational questionnaires were used to evaluate age, marital status, education, time in job, musculoskeletal complaints and pain intensity, perceived effort, biomechanical exposure, and perception of ease or difficulty in adoption of ergonomics educational training. Musculoskeletal complaints in the neck, back, and wrists were reduced with training, but pain intensity was reduced only in the wrist region. A reduction in the occupational biomechanical exposure from the baseline to immediately post-training and 2 months after training both for novice and experienced workers was also observed. The novice workers group differed from the experienced workers by presenting a higher reduction of biomechanical exposure in the cutting room. All workers in this study benefited from the ergonomics educational training in the short and medium term. However, the success of training was highly dependent on the content and approach of the training.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>Se estudiaron los resultados de la realización de una formación ergonómica, para prevenir trastornos musculoesqueléticos, en trabajadores de una industria de procesamiento de aves de corral. La llevaron a cabo trabajadores nuevos y trabajadores que contaban con experiencia. Se emplearon cuestionarios para recopilar información. Se concluyeron beneficios para todos los trabajadores tras la formación en un plazo de tiempo breve y medio, aunque se encontró alguna diferencia entre los trabajadores nuevos y con experiencia. También se llegó a la conclusión de que los beneficios dependen del tipo de formación realizada.</p>

3. AUSTRALIAN JOURNAL OF RURAL HEALTH

TÍTULO DEL TRABAJO	
Why are some drought-affected farmers less distressed than others? The association between stress, psychological distress, acceptance, behavioural disengagement and neuroticism (¿Por qué algunos agricultores afectados por la sequía están menos angustiados que otros? La asociación entre estrés, angustia psicológica, aceptación, desconexión conductual y neuroticismo)	
PUBLICADO EN:	Australian Journal of Rural Health, Febrero 2021, Volumen 29, Número 1, pp. 106-116
AUTORES:	Gunn, Kate M.; Turnbull, Deborah A.; Dollman, Jim; Kettler, Lisa; Bamford, Luke; Vincent, Andrew D.
DOI:	10.1111/ajr.12695
RESUMEN:	<p>Objective To identify the modifiable psychological and behavioural coping strategies associated with low levels of psychological distress, independent of more stable personality and demographic factors, in a sample of farmers who reported being exposed to a recent stressful event during an extended drought.</p> <p>Design/setting/participants Three hundred and nine South Australian, drought-affected grain, sheep and/or cattle farmers completed printed or online questionnaires. Only those who reported experiencing a stressful event in the past month that they rated ≥ 7 on a scale ranging from 1 (not stressful at all) to 10 (extremely stressful) were included in the analyses ($n = 175$, 65.06%). Participants ranged in age from 24 to 85 years and 40% were female.</p> <p>Main outcome measures Psychological distress was measured using the Kessler Psychological Distress Scale, and coping strategies were measured using a situational version of the COPE inventory. Five personality factors (extraversion, neuroticism, openness, conscientiousness and agreeableness) were assessed using the Quickscales-R.</p> <p>Results In the final multivariable model, distress was elevated among individuals reporting higher neuroticism and behavioural disengagement, and lower in individuals reporting greater use of acceptance. These 3 variables explained 44% of the variance in distress.</p> <p>Conclusion Farmers recently exposed to a significant stressor, who used acceptance as a coping strategy, did not engage in behavioural disengagement and scored low on neuroticism, were least likely to experience distress. Given the stability of personality factors, interventions that foster farmers' use of acceptance and prevent behavioural disengagement as coping strategies might assist them with the management of future stressors, particularly in times of drought.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	El estudio se basó en analizar las estrategias de un grupo de ganaderos (ovino y/o bovino; de entre 24 y 85 años) para afrontar un período de estrés a consecuencia de una sequía de larga duración. Para ello, se utilizaron cuestionarios online o en papel. Solamente se consideraron en el estudio los trabajadores que indicaron haber estado expuestos a estrés en el último mes. Se midió la angustia psicológica, las estrategias

	<p>para afrontar y diversos factores relacionados con la personalidad. Se demostró que los trabajadores que expusieron un neuroticismo mayor y desconexión conductual tenían mayor angustia. Sin embargo, los que aplicaron una estrategia de aceptación para afrontarlo, estaban menos expuestos a sufrir angustia. Además, intervenciones para promover la aceptación y prevenir la desconexión conductual serían beneficiosos para enfrentar el estrés en próximos períodos.</p>
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4. INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS

TÍTULO DEL TRABAJO	
Exposure of agricultural pilots to occupational whole-body vibration: The effects of runway maintenance and the stages of flight (<i>Exposición de los pilotos agrícolas a las vibraciones ocupacionales de todo el cuerpo: los efectos del mantenimiento de la pista y las etapas del vuelo</i>)	
PUBLICADO EN:	International Journal of Industrial Ergonomics, Enero 2021, Volumen 81, Número de artículo 103075
AUTORES:	Zanatta, Mateus; Amaral, Fernando Gonsalves; Giacomello, Cintia Paese
DOI:	10.1016/j.ergon.2020.103075
RESUMEN:	<p>Background: Agricultural pilots fly inside rural areas, usually, in runways without proper maintenance. Neglected runway maintenance contributes to increased exposure to shocks and vibrations. On the other hand, during cruise and spraying, the pilot is not exposed to the effect of the runway surface, and thus the exposure may be different.</p> <p>Objective: The aim of this study is to investigate the factors that may increase occupational exposure to WBV in agricultural pilots.</p> <p>Method: The methodology used in this study consisted of evaluating the exposure of WBV according to the runway surface quality and the stages of flight for a sample of four different agricultural aircraft models.</p> <p>Results: The results confirmed that the magnitude of the vibration is significantly influenced by the runways surface quality and the stages of flight. This suggests the possibility to decrease the exposure to WBV improving runway maintenance and managing flight time.</p> <p>Relevance for the industry: Based on the results of the present study, it was possible to define strategies to reduce whole-body vibration exposure and thus improve the working conditions of agricultural pilots.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se investigaron los factores que aumentaban las vibraciones de todo el cuerpo de origen laboral en pilotos agrícolas. Para ello, se analizaron, para cuatro aeronaves diferentes agrícolas, la superficie de la pista y las etapas de vuelo. Se demostró que estos factores afectaban a las vibraciones. Por tanto, se concluyó que un correcto mantenimiento en la pista y la planificación en el tiempo de vuelo podían ser medidas para reducir las vibraciones a las que se exponían estos trabajadores.

TÍTULO DEL TRABAJO	
Forest harvesting in rural properties: Risks and worsening to the worker's health under the ergonomics approach (<i>Recolección forestal en propiedades rurales: Riesgos y deterioro de la salud del trabajador bajo el enfoque ergonómico</i>)	
PUBLICADO EN:	International Journal of Industrial Ergonomics, Marzo 2021, Volumen 82, Número de artículo 103087
AUTORES:	Schettino, Stanley; Minette, Luciano Jose; Andrade Lima, Roldao Carlos; Pedroso Nascimento, Glicia Silvania; Cacador, Silvio Sergio; Leme Vieira, Marlice Paes
DOI:	10.1016/j.ergon.2021.103087
RESUMEN:	Through an ergonomic approach, this study aimed to evaluate whether workers involved in forest harvesting activities in rural properties are subject to the development of work-related diseases, as well as their consequences. A cross-sectional study with 267 forest workers in rural properties in the Brazilian Central region was used. The following evaluations were performed for each of the activities (felling, delimiting, tracing, manual extraction and manual loading): physical workload evaluation; biomechanical evaluation; risk of repetitive strain injuries/work-related musculoskeletal disorders; environmental noise and vibration factors, where relevant, and thermal overload through the Wetbulb Globe Temperature index. The results showed that in general the physical workload was very high, exceeding the cardiovascular load limits and adding to the need for work reorganization. All activities exposed workers to serious and imminent risks of developing injuries to the spine and lower limbs. Likewise, in general the risk of the appearance of RSI/WMSDs was very high for all activities evaluated. Such results are due to the combination of organizational work factors and factors of the work environment such as exposure to bad weather, uneven terrain, lifting and handling loads above tolerable limits, excessive noise and thermal overload. All of this allows to conclude that ergonomic risks and workers' health hazards in forest harvesting in rural properties are latent and very worrying, and that these workers are exposed to a form of labor exploitation that invariably leads to physical and emotional exhaustion and therefore to their decreased labor capacity and useful working life.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se investigó si los trabajadores forestales estaban expuestos a sufrir enfermedades de origen laboral. En el estudio participaron 267 trabajadores y se analizaron varias tareas como la tala, carga manual, etc. Se estudiaron los trastornos musculoesqueléticos, ruido, vibraciones, etc. Se concluyó que los trabajadores están expuestos a numerosos riesgos laborales que tienen consecuencias físicas y emocionales.

5. INTERNATIONAL JOURNAL OF OCCUPATIONAL SAFETY AND ERGONOMICS

TÍTULO DEL TRABAJO	
Standing working posture and musculoskeletal pain among Citrus sinensis workers in a low-income country (<i>Postura de trabajo de pie y dolor musculoesquelético entre trabajadores de Citrus sinensis en un país de bajos ingresos</i>)	
PUBLICADO EN:	International Journal of Occupational Safety and Ergonomics, Enero 2021, Volumen 27, Número 1
AUTORES:	Ncube, France; Kanda, Artwell; Sanyanga, Tatenda
DOI:	10.1080/10803548.2018.1544799
RESUMEN:	Background. Work-related musculoskeletal pain (WRMP) among Citrus sinensis farm workers has barely been studied. Yet most work tasks in such farms are manually performed using awkward standing postures that can contribute to WRMP. Aim. This study assessed the standing working posture in relation to WRMP among C. sinensis workers. Methods. Ninety-two workers engaged in manual tasks participated in this cross-sectional study. Postures at the upper limbs were analysed using the rapid upper limb assessment (RULA) method. Data were analysed using SPSS version 20. Results. Analyses generally showed statistically significant associations ($p < 0.05$) between a body part RULA score and WRMP at the concerned body part. The upper arm score was >1 in 77.2% of the workers and caused upper arm pain in 66.3%; the association between the upper score and upper pain was statistically significant ($\chi^2 = 20.57$; $p < 0.05$). Similarly, significant associations were found between: (a) wrist score and wrist pain; (b) neck score and neck pain; (c) trunk score and back pain. Conclusions. C. sinensis workers use unsafe postures which contribute to WRMP at the upper arm, trunk, neck and wrists. Ergonomics measures are required to improve their working posture.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	El objetivo de este estudio fue estudiar el dolor musculoesquelético de origen laboral en agricultores de Citrus senensis. Se llevó a cabo la evaluación de la postura de pie que adoptaban en el trabajo. Se evaluó a 92 agricultores mediante el método RULA (Rapid Upper Limb Assessment). Se obtuvieron relaciones entre los resultados de RULA y el dolor musculoesquelético en varias zonas corporales. Se concluyó que las posturas de estos trabajadores eran perjudiciales y que conducían a dolores musculoesqueléticos en muñecas, cuello, tronco y brazo (zona superior).

6. JOURNAL OF AGROMEDICINE

TÍTULO DEL TRABAJO	
How Vulnerable Are US Crop Workers?: Evidence from Representative Worker Data and Implications for COVID-19 (¿Cómo de vulnerables son los trabajadores agrícolas de EE. UU.?: Evidencia de datos de trabajadores representativos e implicaciones para COVID-19)	
PUBLICADO EN:	Journal of Agromedicine, Abril 2021, Volumen 26, Número 2, pp. 256-265
AUTORES:	Fan, Maoyong; Pena, Anita Alves
DOI:	10.1080/1059924X.2021.1890293
RESUMEN:	<p>Objectives This paper examines health profiles and work environments of hired U.S. farmworkers to understand the risk to essential workers and their employers, to the food supply, and to rural health systems such as what is possible with the COVID-19 pandemic. Methods Large-sample statistical methods and proprietary data from the National Agricultural Workers Survey from 2000 to 2018 were used to assess factors associated with exposure to COVID-19 and vulnerabilities associated with medical complications. Results An aging workforce and increased access to health care within the crop worker population has been associated with a higher reported incidence of diabetes, asthma, and heart disease among workers over time. These trends confirm a vulnerable, but essential, workforce with higher risks for COVID-19 complications than would have been true of U.S. farmworkers as a group in earlier years. Conclusions Increasing age and disease burden in the U.S. agricultural labor force puts workers at increased risk for developing COVID-19 complications. Limits to field sanitation and housing quality inflate the probability of the development of COVID-19 hotbeds in rural communities that could further compromise the physical health of workers, the economic health of farm establishments, the agricultural supply-chain, and rural health capacities. Additional and more targeted worker protections may minimize public health and economic costs in the long run.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>Se analizó el ámbito de la salud y el entorno laboral en trabajadores del sector de la agricultura en Estados Unidos. Se utilizó estadística y datos existentes para estudiar los factores relacionados con el COVID-19 y las vulnerabilidades debidas a las dificultades médicas. Se concluyó que padecer enfermedades y un incremento en la edad de los agricultores conducían a un riesgo elevado de sufrir dificultades debidas al COVID-19. Nuevas medidas concretas para estos trabajadores podrían reducir los costes económicos y relacionados con la salud en un período largo de tiempo.</p>

TÍTULO DEL TRABAJO	
Fatigue and the Need for Recovery among Latino/a Immigrant Cattle Feedyard Workers (<i>La fatiga y necesidad de recuperación entre los trabajadores latinos/as inmigrantes de las granjas de engorde de ganado</i>)	
PUBLICADO EN:	Journal of Agromedicine, Enero 2021, Volumen 26, Número 1, pp. 47-58
AUTORES:	Ramos, Athena K.; McGinley, Meredith; Carlo, Gustavo
DOI:	10.1080/1059924X.2020.1845894
RESUMEN:	Cattle feedyards are animal feeding operations where beef cattle are finished to market weight on grain. Cattle feeding can be dirty, demanding, and dangerous work. This study sought to assess the predictors of fatigue and the need for recovery among Latino/a immigrant cattle feedyard workers in the United States. A path model was examined to explore direct and indirect relations among physical fatigue, mental fatigue, need for recovery, job characteristics, and health and sociodemographic covariates. Lower self-reported health, experiencing physical pain, not handling animals, and decreased decision latitude were directly related to increased physical fatigue. Shorter tenure working on cattle feedyards, lower educational level, experiencing physical pain, and increased job demands were directly related to heightened mental fatigue. Being female, experiencing physical pain, an elevated average of hours worked per day, increased job demands, and less decision latitude were directly related to an increased need for recovery and indirectly related to both physical and mental fatigue. Physical and mental fatigue have specific correlates, but job characteristics, including job demands and decision latitude, can directly and indirectly impact workers' levels of physical and mental fatigue and their need for recovery. Both preventive measures and restructuring work operations may reduce the risk for fatigue and the need for recovery. Implications for cattle feedyard workers, supervisors, and employers are discussed. Finding ways to balance productivity and the well-being of workers should be a high priority for cattle feedyards across the country.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio se centró en estudiar la fatiga y necesidad de recuperación en trabajadores. Éstos eran latinos inmigrantes de granjas de engorde de ganado de Estados Unidos. Se investigó la fatiga mental, física, la necesidad de recuperación, características laborales y ámbito sociodemográfico y de salud, identificando relaciones entre ellos, directas o indirectas. Se determinó que, además de aspectos concretos, las características laborales influían sobre la fatiga física, mental y la necesidad de recuperación. Medidas de prevención y reorganización del trabajo podían contribuir a disminuir su riesgo de aparición.

TÍTULO DEL TRABAJO	
Development of an Educational YouTube Channel: A Collaboration between US Agricultural Safety and Health Centers (<i>Desarrollo de un canal educativo de YouTube: una colaboración entre los centros de salud y seguridad agrícola de EE.UU.</i>)	
PUBLICADO EN:	Journal of Agromedicine, Enero 2021, Volumen 26, Número 1, pp. 75-84
AUTORES:	Wickman, Amanda; Duysen, Ellen; Cheyney, Marsha; Pennington, Whitney; Mazur, Joan; Yoder, Aaron
DOI:	10.1080/1059924X.2020.1845269
RESUMEN:	<p>Objectives: The National Institute for Occupational Safety and Health (NIOSH) Agriculture, Forestry, and Fishing Centers (AFF Centers) collaborated to initiate a joint YouTube channel in order to raise awareness of agricultural, forestry, and fishing occupational hazards; provide information to prevent AFF injuries and illnesses; increase the visibility and influence of the AFF Centers; and establish a collaborative model that can be replicated by other organizations.</p> <p>Methods: The collaborators sought to produce a structured channel with high scientific standards. Policies, procedures, and a standard review process were established. Representatives from the AFF Centers coordinated the review process and the procedures by which videos were uploaded to the site. A marketing plan was created including a press release and ideas to promote new videos. Promotions are targeted to agricultural cooperative extension agents, educators, producers, owners, operators, first responders, families and community organizations. Viewership was tracked using YouTube metrics.</p> <p>Results: The site was launched in November 2013. Over a 6-year period, the channel grew from 48 videos to 125 videos with over 10,500 cumulative watch time hours. The channel is promoted by the AFF Centers through email, social media, conference presentations and outreach exhibits. The channel is also publicized during coordinated national outreach events.</p> <p>Conclusion: Each AFF Center benefitted from increased exposure of their content and the collaboration provided an opportunity to achieve labor efficiencies. YouTube metrics demonstrated that coordinated marketing increases views, watch time and subscriptions. In addition, the success of the channel communicates the benefits to collaboration among organizations with common missions.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Los centros de agricultura, silvicultura y pesca (Centros AFF) del Instituto Nacional para la Seguridad y Salud Ocupacional (NIOSH) crearon un canal de YouTube que trataba sobre los riesgos laborales en agricultura, pesca y en el ámbito forestal, informaban sobre prevención de enfermedades laborales y lesiones, daban más a conocer los centros AFF y que esto sirviera a otras organizaciones. En los últimos años el canal ha ido aumentando el número de vídeos y ha sido anunciado mediante redes sociales, correo, etc. Se logró una eficiencia en el ámbito del trabajo y los centros pudieron mostrar mayores contenidos.

7. SAFETY AND HEALTH AT WORK

TÍTULO DEL TRABAJO	
Effect of Occupational Exposure to Herbicides on Oxidative Stress in Sprayers (Efecto de la exposición laboral a herbicidas sobre el estrés oxidativo en aplicadores de fitosanitarios)	
PUBLICADO EN:	Safety and Health at Work, Marzo 2021, Volumen 12, Número 1, pp. 127-132
AUTORES:	Intayoung, Unchisa; Wunnapak, Klintean; Kohsuwan, Kanyapak; Sapbamrer, Ratana; Khacha-Ananda, Supakit
DOI:	10.1016/j.shaw.2020.09.011
RESUMEN:	<p>Background: Herbicides such as glyphosate, paraquat, and 2,4-dichlorophenoxyacetic acid have been reported to cause adverse side effects through production of reactive oxygen species. However, there were no data representing the adverse effects of a mixture herbicide usage in farmers, especially the changes in oxidative marker and antioxidant defense. This study aimed to determine the urinary malondialdehyde (MDA) and glutathione (GSH) level in farmers using mixed herbicides.</p> <p>Methods: Ninety-three farmers were recruited, and two spot urine samples (before and after work) were collected. The urinary MDA level was evaluated by thiobarbituric acid reactive substance assay, and the urinary GSH level was determined using the enzymatic recycling method.</p> <p>Results: Sixty-two percent of the participants were men, and 59% of the participants worked in a farm for 20-40 years. The common combinations of herbicide usage were glyphosate with 2,4-dichlorophenoxyacetic acid (36.5%). There was no significant difference between pre-and post-work urinary MDA and GSH levels among the 3 groups of herbicides. However, the urinary MDA levels in farmers using the combination of glyphosate and paraquat were significantly higher than those found in farmers using glyphosate alone. The associated factors with changes in MDA levels found that the exposure intensity index (B = 0.154), the cumulative exposure intensity index (B = 0.023), and wearing gloves while working (B = -2.347) were found to be significantly associated with MDA level.</p> <p>Conclusion: The results suggest that the combined use of glyphosate and paraquat caused a significant increase in urinary MDA levels. Moreover, intensity of exposure to herbicide and wearing gloves were associated with the level of MDA.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>En este estudio se analizaron los valores de malondialdehído y glutatión en la orina de agricultores que empleaban una mezcla de herbicidas. Participaron 93 trabajadores y se tomaron dos muestras de orina para cada uno (antes de comenzar el trabajo y al terminarlo). Se concluyó que una utilización conjunta de glifosato y paraqar contribuía a unos mayores valores de malondialdehído en la orina, que también dependían del grado de exposición al herbicida empleado y de la utilización de guantes.</p>

TÍTULO DEL TRABAJO	
Relationship Between Sleep Duration and Suicidal Ideation Among Farmers: Safety for Agricultural Injuries of Farmers Cohort Study of Jeju, Korea (<i>Relación entre la duración del sueño y la ideación suicida entre agricultores: estudio de cohorte de seguridad para las lesiones agrícolas de los agricultores de Jeju, Corea</i>)	
PUBLICADO EN:	Safety and Health at Work, Marzo 2021, Volumen 12, Número 1, pp. 102-107
AUTORES:	Oh, Jung-Hwan; Yoo, Jeong Rae; Ko, Seo Young; Kang, Jeong Ho; Lee, Sung Kgun; Jeong, Wooseong; Seong, Gil Myeong; Lee, Hyun Jung; Song, Sung Wook
DOI:	10.1016/j.shaw.2020.10.004
RESUMEN:	<p>Background: This study was conducted to identify the association between sleep duration and suicidal ideation among farmers in Korea.</p> <p>Methods: We used Safety for Agricultural Injuries of Farmers cohort data collected from September 2015 to June 2018, which was an agricultural survey on the health and behaviors of adult farmers in Jeju is -land, Korea.</p> <p>Results: A total of 964 participants were included in the analysis, and 3.7% of them were identified with having suicidal ideation. The frequencies of average daily sleep duration of <6 h (short sleep), 6-8 h (normal sleep), and >8 h (long sleep) were 24.4%, 70%, and 5.6%, respectively. Multivariate analyses revealed that short sleep duration was significantly associated with suicidal ideation compared with normal sleep duration (odds ratio = 2.49, 95% confidence interval = 1.07-5.77).</p> <p>Conclusion: Our findings suggest that short sleep duration in farmers result in higher suicidal ideation. Because individuals who have suicidal ideation often commit suicide, careful monitoring is required to prevent suicide in farmers with short sleep duration.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudió la relación entre la duración del sueño y la ideación suicida en trabajadores dedicados a la agricultura en Corea. Participaron 964 trabajadores y se realizó una encuesta. Se relacionó el dormir durante poco tiempo (menos de 6 horas) con la ideación suicida, por lo que es necesario prevenir estos sucesos.

TÍTULO DEL TRABAJO	
Safety Management in Norwegian Fish Farming: Current Status, Challenges, and Further Improvements (<i>Gestión de seguridad en la piscicultura noruega: estado actual, desafíos y mejoras adicionales</i>)	
PUBLICADO EN:	Safety and Health at Work, Marzo 2021, Volumen 12, Número 1, pp. 28-34
AUTORES:	Thorvaldsen, Trine; Storkersen, Kristine; Kongsvik, Trond; Holmen, Ingunn Marie
DOI:	10.1016/j.shaw.2020.08.004
RESUMEN:	<p>Background: Safety management is required to ensure health and safety of personnel in Norwegian fish farming. However, few studies have addressed the status and practical relevance of this risk-reducing measure.</p> <p>Methods: This article provides new knowledge through interviews with 35 employees at different company levels, addressing perceptions of various safety management activities according to managers and operational personnel.</p> <p>Results: The interviews show that managers and operational personnel at fish farms agree that the quantity of measures aimed to improve safety has increased in recent years. However, some activities are perceived to have higher practical relevance than others. In general, measures that fit well with the practical reality are well received by the employees at the fish farms.</p> <p>Conclusion: Suggested improvements include involving operational personnel in the design of procedures, considering all risk dimensions that may affect occupational health and safety, and challenging the value of specific safety activities based on a detailed knowledge of the distinctive characteristics of work practice in fish farming.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>Este estudio se centra en conocer la gestión de la seguridad llevada a cabo para conseguir la salud y seguridad de los trabajadores de piscicultura en Noruega. Para ello, se realizaron entrevistas a 35 trabajadores de una empresa. Se tuvo en cuenta la gestión de la seguridad desde el punto de vista de los gerentes y del personal operativo. Ambos estuvieron de acuerdo en que las medidas aplicadas para la mejora de esta gestión se habían incrementado en los últimos años, aunque expusieron que determinadas actividades eran más prácticas que otras. Se concluyó como mejora que el personal operativo debería participar en el diseño de procedimientos, teniendo en cuenta todos los riesgos que afectan a la salud y seguridad en el trabajo.</p>

8. AGRICULTURE-BASEL

TÍTULO DEL TRABAJO	
Quality of Work Life (QoWL) and Perceived Workplace Commitment among Seasonal Farmers in Nigeria (<i>Calidad de vida laboral y compromiso percibido en el lugar de trabajo entre los agricultores temporeros en Nigeria</i>)	
PUBLICADO EN:	Agriculture-Basel, Febrero 2021, Volumen 11, Número 2, Número de artículo 103
AUTORES:	Moda, Haruna M.; Nwadike, Christopher; Danjin, Mela; Fatoye, Francis; Mbada, Chidozie E.; Smail, Louise; Doka, Pauline J. S.
DOI:	10.3390/agriculture11020103
RESUMEN:	This study set out to research the impact of Quality of Work Life (QoWL) in Low- and Middle-Income Countries (LMICs) and the perception of farm workers regarding how both intrinsic and extrinsic control elements within and outside the work setting impact their productivity within the farming industry in Nigeria. To our knowledge, this is the first study that has considered QoWL among farm workers in Nigeria. Farm workers in the Middle Belt region in Nigeria (n = 435) were surveyed using a QoWL questionnaire consisting of 32 Likert scale items to measure their perceived quality of work life based on seven dimensional factors. Results indicated that more than half (60.6%) of the sampled group confirmed working far above the national working hours of 40 h per week. Significant differences exist between respondent gender on control at work (CAW) ($F = 10.03$, $p < 0.001$) and working conditions (WCS) ($F = 12.04$, $p < 0.001$), with women having better QoWL. Farm worker job satisfaction, especially in LMICs, is an important element that can lead to high productivity and sustainability of the sector. To achieve a level of sustainability and food security in Nigeria, there is the need to improve opportunities for greater stability among farmers. Farm workers could benefit from tailored training initiatives around stress management and work-life balance, as well as workplace safety and health and wellbeing as a means of boosting their confidence and enhance sustainable productivity. In addition, this paper holds the potential to inform framework development for assessing QoWL within the farming industry in Nigeria and encourage further research around the impact of job insecurity on the nation's food security.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	En este estudio se encuestó a 435 agricultores de Nigeria para conocer su calidad de vida laboral. Más de la mitad de los trabajadores expusieron que trabajaban más de 40 horas semanales. Las mujeres presentaron una mayor calidad de vida en el trabajo. Se concluyó que la capacitación de los agricultores sobre control del estrés y equilibrio entre trabajo y vida personal, junto con la seguridad, salud y bienestar en el entorno laboral podrían mejorar la confianza y la productividad sostenible.

9. SAFETY SCIENCE

TÍTULO DEL TRABAJO	
Traps and tricks of safety management at sea (<i>Trampas y trucos de la gestión de la seguridad en el mar</i>)	
PUBLICADO EN:	Safety Science, Febrero 2021, Volumen 134, Número de artículo 105081
AUTORES:	Storkersen, Kristine Vedal; Thorvaldsen, Trine
DOI:	10.1016/j.ssci.2020.105081
RESUMEN:	Safety management regulation was introduced almost twenty years earlier for Norwegian seafarers than coastal fishers, although both groups work in industries with high accident frequencies. In this study, seafarers and fishers' perspectives on safety management requirements is studied, through empirical data from interviews and observation conducted over several years, with the aim of informing the future development of safety management, especially in fishing. Results show that the fishers have practical skills and an operational orientation, while the seafarers experience ill-fitting procedures, extensive documentation, and shore management that the coastal fishers lack. The suggestions for future safety management are related to development of procedures, a safe working environment, safeguards and safety management skills.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este documento estudia la perspectiva de marineros y pescadores sobre la gestión de la seguridad. Se empleó la observación y se realizaron entrevistas en diferentes años. Los resultados indicaron que los pescadores tenían habilidades prácticas y orientación operacional. Los marineros, entre otras cosas, realizaban procedimientos que no eran adecuados. Se sugirió como mejora desarrollar procedimientos, un entorno laboral seguro, salvaguardias y habilidades en este tipo de gestión.

TÍTULO DEL TRABAJO	
Occupational risk perception in mollusk farm workers <i>(Percepción del riesgo laboral en trabajadores agrícolas de moluscos)</i>	
PUBLICADO EN:	Safety Science, Marzo 2021, Volumen 135, Número de artículo 105102
AUTORES:	Guertler, Cristhiane; Speck, Giselle Mari; Rezende, Priscila Costa; Lupi Vergara, Lizandra Garcia; Seiffert, Walter Quadros
DOI:	10.1016/j.ssci.2020.105102
RESUMEN:	Marine bivalve mollusk farming in Santa Catarina, located in South Brazil is a noteworthy productive activity that generates jobs and income. However, workers in this sector are exposed to several workplace risks due to lack of security and occupational health policies. In order to contribute to the generation of knowledge in the sector, this study evaluated oyster and mussel farm worker occupational risk perception in Florianopolis, Brazil. An ergonomic analysis and the application of a semi-structured interview (n = 38) were carried out, as well as observation of the work environment. Results indicate that most of the participants are men with low educational level and that the most common accidents are cuts, shocks and falls. In addition, reports of muscle pain and allergies were also noted. The interviewees displayed ignorance regarding the occupational risks present at cultivation farms, and were also shown to underestimate accidents suffered during task execution. The data obtained herein indicate the need for the development of risk management policies, specific for marine bivalve mollusk farming, especially regarding worker education and organization work measures in mariculture.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudiaron los riesgos laborales en trabajadores de ostras y mejillones en Florianópolis, Brasil. Para ello, se llevó a cabo la observación del ambiente de trabajo, una evaluación ergonómica y una entrevista. Se demostró que los accidentes laborales más frecuentes eran caídas, golpes y cortes. También se producían alergias y molestias musculares. Se concluyó que los trabajadores no tenían información sobre los riesgos a los que se exponían en el trabajo. Se recomendó formar a los trabajadores sobre este tema, aplicar medidas de tipo organizativo y conseguir una correcta gestión de riesgos.

10. EXCLI JOURNAL

TÍTULO DEL TRABAJO	
Cutting force measurement: hand tool instrumentation used in slaughterhouses - a systematic review (<i>Medición de la fuerza de corte: herramientas manuales utilizadas en mataderos: una revisión sistemática</i>)	
PUBLICADO EN:	EXCLI Journal, Abril 2021, Volumen 20, pp. 727-747
AUTORES:	Tirloni, Salvador Francisco; Tirloni, Adriana Seara; Roqueiro, Nestor; Diaz Merino, Eugenio Andres; Alves Diaz Merino, Giselle Schmidt; Pereira Moro, Antonio Renato
DOI:	10.17179/excli2020-3167
RESUMEN:	Workers' intensive use of hand tool cutting in the meat packing industry is a risk factor for occupational health, mainly by mechanical compression of tissues in the upper limbs, which can cause Work-Related Musculoskeletal Disorders (WMSDs). This systematic review aimed to identify the characteristics and measured variables of instrumented knives and determine how they should be designed. The review process and article extractions occurred through an analysis of the (article) titles, keywords and abstracts, followed by reading the full texts by two reviewers independently. Searches were conducted in Medline, Web of Science, Science Direct, Scopus, Ebsco and Engineering Village for articles published in peer-reviewed journals from January 2000 to March 2019, in the English language. The result of (the) search included 1289 potentially eligible studies, with 894 duplicated/triplicated/quadruplicated articles that were excluded, resulting in 404 remaining articles of which 33 were considered eligible, with 36 additional articles, totaling 69 evaluated full texts. After the review, none of the 14 analyzed studies, were rated as having good methodological quality. In addition, four types of instrumented knives were used. Data acquisition was performed in both laboratory and meat processing plants. It is noteworthy that only one knife was submitted to a validation process and that the articles did not provide complete technical information about the knives. The result demonstrated that the cutting force varies within and between subjects, tasks, plants and blade finishings. All knives used some type of electrical connection via cable or wires. Of the articles found, none considered the influences that the workers are subject to when they do not use the same tool daily for data acquisition. Therefore, the development of different types of instrumented knives, with wireless data transmission and more rigorous studies are necessary to expand the knowledge of the cutting force and development of WMSD in slaughterhouse workers who perform meat cutting.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Los trabajadores de mataderos están expuestos a riesgo de sufrir trastornos musculoesqueléticos por el uso de herramientas de corte de tipo manual en el despiece de la carne. El objetivo de este estudio fue conocer cómo se deben diseñar estos cuchillos. Se llevó a cabo una revisión de artículos de diversas bases de datos comprendidos entre enero del 2000 y marzo del 2019. Se concluyó que era necesario crear varios tipos de cuchillos y realizar estudios más concretos para conocer

	la fuerza de corte y la aparición de trastornos musculoesqueléticos de estos trabajadores.
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11. INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH

TÍTULO DEL TRABAJO	
Climate Change, Pesticides and Health: Considering the Risks and Opportunities of Adaptation for Zimbabwean Smallholder Cotton Growers (Cambio climático, pesticidas y salud: consideración de los riesgos y oportunidades de adaptación para los pequeños productores de algodón de Zimbabwe)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Enero 2021, Volumen 18, Número 1, Número de artículo 121
AUTORES:	Zinyemba, Cliff; Archer, Emma; Rother, Hanna-Andrea
DOI:	10.3390/ijerph18010121
RESUMEN:	There is potential for increased pesticide-related adverse health outcomes in the agricultural sector linked to adaptive increases in pesticide use necessitated, in part, by climate change-related increases in pest populations. To understand the role of adaptation practices in pesticide use and health risks, this study assessed Zimbabwean smallholder cotton farmers' adaptive responses linked to their climate change perceptions. In depth interviews were conducted with 50 farmers who had been growing cotton for at least 30 years. The study identified farmers' adaptation practices that increased their pesticide use, as well as those that presented opportunities for reducing pesticide use through non-pesticide-dependent adaptation pathways. The findings show that due to perceived climate change impacts, such as a shorter growing season, farmers were adopting a range of adaptive practices. These included changes in pest management practices, such as increasing pesticide spraying frequencies due to keeping ratoon crops, which were increasing farmers' overall pesticide use. Such incremental adaptive practices are potentially maladaptive, as they may increase farmers' pesticide-related health risks. Other practices, however, such as reducing cotton acreage and diversifying crops, resulting in transformational adaptation, suggest the existence of opportunities for decreasing overall pesticide use or totally eliminating pesticides from the farming system.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudiaron las prácticas que llevaban a cabo los agricultores de algodón de Zimbabwe, como respuesta al incremento de plagas debido al cambio climático, y los riesgos que ocasionaban en la salud de los trabajadores. Se entrevistó a 50 agricultores que tenían una experiencia de 30 años en este trabajo. Los resultados mostraron que una de las prácticas fue la fumigación con plaguicidas con más frecuencia, lo que daba lugar a un mayor riesgo para su salud. Para evitar lo anterior, otras prácticas consistieron en la disminución de la superficie de cultivo de algodón y la diversificación de cultivos.

TÍTULO DEL TRABAJO	
Mesothelioma in Agriculture in Lombardy, Italy: An Unrecognized Risk (<i>Mesoteloma en la agricultura en Lobardía, Italia: un riesgo no reconocido</i>)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Enero 2021, Volumen 18, Número 1, Número de artículo 358
AUTORES:	Mensi, Carolina; Dallari, Barbara; Polonioli, Marco; Riboldi, Luciano; Consonni, Dario; Pesatori, Angela Cecilia
DOI:	10.3390/ijerph18010358
RESUMEN:	Cohort studies showed consistently low risks for malignant mesothelioma (MM) among agricultural workers, however the investigated exposures did not include asbestos. Our aim is to describe sources of asbestos exposure of MM in agriculture. Twenty-six MM cases in agricultural or seed trades workers were identified through the MM registry of the Lombardy region, Italy in 2000-2016. Asbestos exposures were investigated through a standardized questionnaire. The most frequent exposure circumstances were recycled jute bags previously containing asbestos (11 cases) and maintenance and repair of asbestos roofs (12 subjects). Three subjects performed maintenance and repair of tractor asbestos brakes and two used asbestos filters for wine production. Our data suggest asbestos exposure opportunities in the agricultural setting, underlining the need to look for this exposure in subjects affected with mesothelioma.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	El objetivo de este estudio fue conocer la exposición de agricultores a amianto, para conocer su relación con el mesotelioma maligno. Mediante el registro de Lombardía de mesotelioma maligno, se detectaron 26 trabajadores del sector de la agricultura o del comercio de semillas que lo padecían. Por otra parte, se empleó un cuestionario estandarizado para investigar las causas de exposición al amianto en agricultores, siendo estas: las bolsas de yute recicladas, mantenimiento y reparación de techos y de frenos de tractores de amianto y el uso de filtros de amianto para producir vino. Se concluyó que en este sector los trabajadores se exponían al amianto, por lo que es necesario buscar esta exposición con personas que padecen mesotelioma.

TÍTULO DEL TRABAJO	
Understanding Challenges to Well-Being among Latina FarmWorkers in Rural Idaho Using in an Interdisciplinary, Mixed-Methods Approach (Comprender los desafíos para el bienestar entre las trabajadoras agrícolas latinas en las zonas rurales de Idaho utilizando un enfoque interdisciplinario de métodos mixtos)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Enero 2021, Volumen 18, Número 1, Número de artículo 169
AUTORES:	Curl, Cynthia L.; Meierotto, Lisa; Som Castellano, Rebecca L.
DOI:	10.3390/ijerph18010169
RESUMEN:	The aim of this study was to identify social, cultural and workplace-related risk factors affecting well-being among Latina farmworkers in rural Idaho. We recruited 70 Latina farmworkers from southwestern Idaho in 2019. We employed an inter-disciplinary, mixed-methods approach-including surveys, focus groups, interviews, and pesticide biomonitoring-to characterize multiple domains that influence well-being, including food security and access, housing conditions, social supports, access to medical care, and workplace safety. Six major themes emerged as primary challenges to Latina farmworkers' well-being. In the public sphere, study participants identified these challenges as long working hours, concerns regarding pesticide exposure, and lack of enforcement of regulatory protections. Participants' concerns regarding pesticide exposure were underscored by biological sampling results; multiple biomarkers of pesticide exposure were detected in all samples, with the highest concentrations measured in samples collected from women who reported mixing, loading or applying pesticides. Within the private sphere, food security and provisioning, childcare responsibilities, and social isolation were identified as significant challenges to well-being. Gender, ethnicity, and geography emerged as important, intersecting statuses that shaped the life experiences of these agricultural workers. Our findings suggest that gender may play a particularly critical role in the unique challenges facing Latina farmworkers. As a result, the services and regulations needed to support well-being in this population may be highly specific, and almost certainly include attention to work-family dynamics, pesticide exposure, and social connections.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	El estudio se centró en conocer los riesgos laborales, sociales y culturales a los que se exponen las agricultoras latinas en Idaho y que influyen en su bienestar. Participaron 70 agricultoras en esta investigación y se utilizaron encuestas, entrevistas, grupos focales y biomonitoreo de pesticidas. Los resultados mostraron una importante exposición a plaguicidas, que coincidió con la preocupación que mostraron las agricultoras con este tema. Además, se determinaron otros desafíos relevantes para el bienestar de estas trabajadoras como el aislamiento social, seguridad alimentaria, etc. Para contribuir al bienestar de las agricultoras se debería poner atención a la parte social, el equilibrio entre trabajo y familia y el contacto con pesticidas.

TÍTULO DEL TRABAJO	
How Does Urban Farming Benefit Participants' Health? A Case Study of Allotments and Experience Farms in Tokyo <i>(¿Cómo beneficia la agricultura urbana a la salud de los participantes? Un caso de estudio de parcelas y granjas experimentales en Tokio)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Enero 2021, Volumen 18, Número 2, Número de artículo 542
AUTORES:	Harada, Kentaro; Hino, Kimihiro; Iida, Akiko; Yamazaki, Takahiro; Usui, Hiroyuki; Asami, Yasushi; Yokohari, Makoto
DOI:	10.3390/ijerph18020542
RESUMEN:	In Japan, the world's most rapidly aging country, urban farming is attracting attention as an infrastructure for health activities. In Tokyo, urban residents generally participate in two types of farming programs: allotments and experience farms. The availability of regular interaction among participants distinguishes these two programs. We quantitatively examined the difference in changes in self-reported health status between participants in these two types of urban farming. We obtained retrospective cross-sectional data from questionnaire surveys of 783 urban farming participants and 1254 nonparticipants and analyzed the data using ordinal logistic regressions. As a result, compared with nonparticipants, participants in both types of urban farming reported significantly improved self-rated health (SRH) and mental health (MH). After controlling for changes in their physical activity (PA), although participants in allotments did not report significant improvement in SRH and MH, those in experience farms did, suggesting that their health improvement was not only caused by an increase in PA but also by social interaction among participants. From the perspective of health promotion, public support is needed not only for the municipality's allotments but also for the experience farms operated by the farmers themselves.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	La agricultura urbana está tomando importancia para la salud de residentes en Tokyo, que participan en parcelas y granjas experimentales. Se analizó si mejoraba la salud entre las personas que realizaban estas dos formas de agricultura. Se utilizaron cuestionarios con personas que participaban en agricultura urbana y otras que no. Entre otros resultados, se determinó que los que participaban indicaron una mejora en su salud autoevaluada y en la salud mental.

TÍTULO DEL TRABAJO	
Health Symptoms Related to Pesticide Use in Farmers and Laborers of Ecological and Conventional Banana Plantations in Ecuador <i>(Síntomas de salud relacionados con el uso de plaguicidas en agricultores y trabajadores de plantaciones bananeras ecológicas y convencionales en Ecuador)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Febrero 2021, Volumen 18, Número 3, Número de artículo 1126
AUTORES:	Hutter, Hans-Peter; Poteser, Michael; Lemmerer, Kathrin; Wallner, Peter; Kundi, Michael; Moshhammer, Hanns; Weitensfelder, Lisbeth
DOI:	10.3390/ijerph18031126
RESUMEN:	Conventional banana farming is pesticide-intensive and leads to high exposure of farmworkers. Ecuador is the world's biggest exporter of bananas. In this field study in 5 communities in Ecuador, we recorded potentially pesticide-associated subjective health symptoms in farmworkers and compared pesticide users to workers in organic farming. With one exception, symptom rates were always higher in the pesticide-exposed group. Significance was reached in 8 out of 19 investigated symptoms with the highest odds ratios (and smallest p-values) for local irritation like skin and eye irritation (OR = 3.58, CI 1.10-11.71, and 4.10, CI 1.37-12.31, respectively) as well as systemic symptoms like dizziness (OR = 4.80, CI 1.55-14.87) and fatigue (OR = 4.96, CI 1.65-14.88). Moreover, gastrointestinal symptoms were reported more frequently by pesticide users: nausea (OR = 7.5, CI 1.77-31.77) and diarrhea (OR = 6.43, CI 1.06-30.00). The majority of farmworkers were not adequately protected from pesticide exposure. For example, only 3 of 31 farmworkers that had used pesticides recently reported using gloves and only 6 reported using masks during active spraying. Improved safety measures and a reduction in pesticide use are necessary to protect the health of banana farmworkers.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudiaron los síntomas de salud, que podrían estar derivados de exposición a pesticidas, en trabajadores de plantaciones bananeras en Ecuador. Se hizo una comparación entre los trabajadores que los utilizaban y los que se centraban en agricultura orgánica. Excepto en un caso, los síntomas fueron mayores en los trabajadores que empleaban pesticidas. Además, los agricultores no contaban con medidas de protección contra el contacto con los pesticidas. Únicamente 3 de 31 agricultores afirmaron haber utilizado guantes y 6 de ellos haber utilizado mascarillas. Se concluye la necesidad de adoptar medidas para la seguridad de los trabajadores y disminuir la utilización de pesticidas.

TÍTULO DEL TRABAJO	
<p>Innovating Occupational Safety Training: A Scoping Review on Digital Games and Possible Applications in Agriculture <i>(Innovación en la formación en seguridad ocupacional: revisión del alcance de los juegos digitales y posibles aplicaciones en la agricultura)</i></p>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Febrero 2021, Volumen 18, Número 4, Número de artículo 1868
AUTORES:	Vigoroso, Lucia; Caffaro, Federica; Micheletti Cremasco, Margherita; Cavallo, Eugenio
DOI:	10.3390/ijerph18041868
RESUMEN:	<p>Digital games have been successfully applied in different working sectors as an occupational safety training method, but with a very limited application in agriculture. In agriculture and other productive sectors, unintentional injuries tend to occur with similar dynamics. A literature review was carried out to understand how occupational risks are addressed during game-based safety training in different productive sectors and how this can be transferred to agriculture. Literature about "serious game" and "gamification" as safety training methods was searched in WEB OF SCIENCE, SCOPUS, PUBMED and PsycINFO databases. In the forty-two publications retained, the computer was identified as the most adopted game support, whereas "points", "levels", "challenges" and "discovery" were the preferred game mechanics. Moreover, an association can be detected between the game mechanics and the elements developed in the game. Finally, during the game assessment, much positive feedback was collected and the games proved to be able to increase the operators' skills and safety knowledge. In light of the results, insights are provided to develop an effective, satisfying and engaging safety game training for workers employed in agriculture. Games can be best used to learn and they are certain to improve over the next few years.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>En diversos sectores ha sido útil el empleo de juegos digitales para formación sobre seguridad en el trabajo. Este estudio llevó a cabo una revisión de información en varias bases de datos para conocer cómo se enfocan los riesgos derivados del trabajo en esta formación con el uso de juegos en diferentes sectores y cómo podría aplicarse en la agricultura. Los resultados indicaron que estos juegos permiten que los trabajadores adopten con éxito conocimientos sobre seguridad laboral y se determinó cómo se podría llevar a cabo en agricultores.</p>

TÍTULO DEL TRABAJO	
The Safety of Slaughterhouse Workers during the Pandemic Crisis <i>(La seguridad de los trabajadores de los mataderos durante la crisis pandémica)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Marzo 2021, Volumen 18, Número 5, Número de artículo 2633
AUTORES:	Ursachi, Claudiu Stefan; Munteanu, Florentina-Daniela; Cioca, Gabriela
DOI:	10.3390/ijerph18052633
RESUMEN:	The working conditions in a slaughterhouse are difficult because of the low temperatures, high humidity, and little natural light. Therefore, in these facilities, there is a high demand in the maintenance of strict hygiene rules. Lately, the new SARS-CoV-2 pandemic situation has brought new challenges in the meat industry, as this sector has to maintain its operability to supply the meat and meat products demanded by the consumers. In this challenging period, the safety of the workers is as important as keeping the high demands for the safety of the meat and meat products along with consumer confidence. This paper aims to give an overview of the risks associated with the SARS-CoV-2 virus transmission between the workers in slaughterhouses and to evaluate the stability and infectivity in the working environment of these facilities. Considering the persistence of this virus on different surfaces and the environmental conditions affecting its stability (temperature, relative humidity, and natural light), in the study we proposed several short-, medium-, and long-term preventive measures for minimizing the potential threats of the actual pandemic.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	En los mataderos existen condiciones laborales perjudiciales como temperaturas bajas, humedad elevada y escasa luz natural. Durante la pandemia SARS-CoV-2, el sector de la industria cárnica no ha parado. Este estudio se centró en identificar los riesgos de contagio de este virus en los trabajadores de este ámbito. El estudio de este tema, junto con las condiciones perjudiciales del entorno de trabajo, condujo a establecer medidas de tipo preventivo para su aplicación en un corto, medio y largo plazo de tiempo.

TÍTULO DEL TRABAJO	
Insecticide Filtration Efficiency of Respiratory Protective Equipment Commonly Worn by Farmers in Thailand <i>(Eficacia de la filtración de insecticidas de los equipos de protección respiratoria que suelen usar los agricultores en Tailandia)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Marzo 2021, Volumen 18, Número 5, Número de artículo 2624
AUTORES:	Sapbamrer, Ratana; Hongsibsong, Surat; Naksata, Manoch; Naksata, Wimol
DOI:	10.3390/ijerph18052624
RESUMEN:	Farmers are at a high risk of inhalation exposure when handling pesticides. Thai farmers usually protect themselves against pesticide exposure by wearing commercial respiratory protective equipment (RPE) available from rural community markets. However, scientific data regarding the pesticide filtration efficiency of RPE commonly worn by farmers is limited. Thus, this study aimed to investigate the efficiency of insecticide filtration of various RPE commonly worn by farmers in Thailand. The half facepiece respirator was used as a control to compare the results with other RPE. Ten types of RPE were selected for testing. The filtration efficiency of each RPE against insecticides was tested in a laboratory. The remarkable findings were that a surgical mask demonstrated the least filtration efficiency of all tested insecticides, with a range of 25.7-61.5%. The RPE available in rural markets of Thailand had a filtration efficiency within a range of 64.9-95.4%, whereas a half facepiece respirator was the most efficient in filtering insecticides, with a range of 96.5-98.9%. Therefore, our results suggest that the RPE most frequently worn by farmers may not provide adequate protection when compared with the respirator. However, considerations around RPE use in low-and middle-income countries and tropical climate conditions should be based on pesticide toxicity and practical use, ensuring balance between the risks from pesticide exposure and acceptance of PPE use.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio evaluó la eficiencia en la filtración de insecticidas en los equipos de protección respiratoria que utilizan los agricultores en Tailandia. Se analizaron diez tipos diferentes en un laboratorio y se utilizó el respirador de media pieza facial para compararlo con éstos. Se demostró que los equipos de protección respiratoria no protegían a los agricultores lo suficiente en comparación con el otro.

TÍTULO DEL TRABAJO	
Seroprevalence and Factors Associated with Scrub Typhus Infection among Forestry Workers in National Park Offices in South Korea <i>(Seroprevalencia y factores asociados con la infección por tifus de los matorrales entre los trabajadores forestales en las oficinas de los parques nacionales en Corea del Sur)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Marzo 2021, Volumen 18, Número 6, Número de artículo 3131
AUTORES:	Park, Ji-Hyuk; Gill, Byoungchul; Acharya, Dilaram; Yoo, Seok-Ju; Lee, Kwan; Lee, Jeongmin
DOI:	10.3390/ijerph18063131
RESUMEN:	Scrub typhus is caused by the arthropod-borne bacterium <i>Orientia tsutsugamushi</i> and is an endemic infectious disease in the Asia-Pacific area. This study aimed to investigate the seroprevalence of scrub typhus and identify associated risk and protective factors among forestry workers, a neglected risk group for scrub typhus, in National Park Offices in South Korea. A nationwide cross-sectional serosurvey was carried out on 1945 National Park Office forestry workers (NPOFWs) in South Korea during December 2016. We visited 29 main offices and used a structured questionnaire to collect data regarding general characteristics, work activities, work hygiene-related factors, and other potential risk factors. Serum samples from NPOFWs were tested using indirect immunofluorescence assay to detect <i>O. tsutsugamushi</i> immunoglobulin (Ig) G and M antibodies. Of the 1945 NPOFWs, 718 (36.9%) participated in this cross-sectional study. The seroprevalence, defined as $\geq 1:256$ for IgG and/or $\geq 1:16$ for IgM, was 4.9% (35/718). In multivariate logistic analysis, longer duration of work in national parks (≥ 15 years; odds ratio (OR), 4.19; 95% confidence interval (CI), 1.71-10.28) and dry field farming (OR, 2.47; 95% CI, 1.12-5.46) were significantly associated with a higher risk of scrub typhus infection. Furthermore, the risk of scrub typhus infection was significantly lower among NPOFWs who washed working clothes daily (OR, 0.37; 95% CI, 0.18-0.75). This study indicated that scrub typhus is an important disease among NPOFWs in South Korea. Work hygiene, especially washing working clothes daily, needs to be emphasized among NPOFWs. Additionally, more precautions are required to diminish the rate of scrub typhus infection among NPOFWs who perform dry field farming.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio se centró en analizar la seroprevalencia del tifus de los matorrales en trabajadores forestales de Oficinas de Parques Nacionales en Corea del Sur. También tuvo como objetivo determinar los riesgos a los que se exponían estos trabajadores y las medidas de protección. Se realizó una encuesta serológica a 1945 trabajadores. Se hicieron cuestionarios en 29 oficinas sobre la actividad laboral, riesgos posibles, higiene en el trabajo, etc. Se concluyó que esta enfermedad es relevante entre estos trabajadores y que como medida a adoptar es imprescindible la higiene en el trabajo. Destaca que los trabajadores deben lavar todos los días la ropa que utilizan en su puesto, además de que es necesario aplicar otras medidas preventivas para reducir esta enfermedad entre los trabajadores.

TÍTULO DEL TRABAJO	
Seroepidemiologic Survey of Lyme Disease among Forestry Workers in National Park Offices in South Korea <i>(Encuesta seroepidemiológica de la enfermedad de Lyme entre trabajadores forestales en oficinas de parques nacionales en Corea del Sur)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Marzo 2021, Volumen 18, Número 6, Número de artículo 2933
AUTORES:	Acharya, Dilaram; Park, Ji-Hyuk
DOI:	10.3390/ijerph18062933
RESUMEN:	Limited data are available on the current status of Lyme disease in South Korea. The aim of this study was to investigate the seroprevalence and risk factors associated with Lyme disease infection among forestry workers in National Park Offices in South Korea. We enrolled National Park Office forestry workers (NPOFWs) who had worked for ≥ 1 year. Participants completed questionnaires that addressed various subjects including work types and work hygiene-related factors. Collected serum samples were tested using immunofluorescence assay to detect anti-Borrelia antibodies. Multivariate logistic regression was used to identify independent risk factors of seroprevalence. Of 1,410 NPOFWs, 655 (46.5%) participated in this study, and an overall seroprevalence of Lyme disease antibodies was 8.1%. Analysis showed that always eating meals in woodland (odds ratio (OR), 5.11; 95% confidence interval (CI), 2.08-12.52) and raising dogs outside homes (OR, 3.25; 95% CI, 1.57-6.75) were significantly associated with Lyme disease infection. This seroprevalence study indicates that Lyme disease is an important disease among NPOFWs in South Korea. These identified modifiable risk factors should be considered while designing preventive strategies for reducing Lyme disease infection among NPOFWs.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio analizó la seroprevalencia y los riesgos de infección de trabajadores forestales de Corea del Sur, de Oficinas de Parques Nacionales, por la enfermedad de Lyme. Se realizaron también cuestionarios en los que se trataba el tipo de labor y la higiene en el trabajo. Se determinaron como factores de riesgo de la enfermedad, el comer en el bosque y tratar con perros fuera del hogar. Se concluyó que era una enfermedad relevante entre estos trabajadores y que se debían considerar los factores obtenidos para establecer medidas de prevención.

TÍTULO DEL TRABAJO	
Application Intensity and Spatial Distribution of Three Major Herbicides from Agricultural and Nonagricultural Practices in the Central Plain of Thailand (<i>Intensidad de aplicación y distribución espacial de tres herbicidas principales de prácticas agrícolas y no agrícolas en la llanura central de Tailandia</i>)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Marzo 2021, Volumen 18, Número 6, Número de artículo 3046
AUTORES:	Kwonpongsagoon, Suphaphat; Katasila, Chanokwan; Kongtip, Pornpimol; Woskie, Susan
DOI:	10.3390/ijerph18063046
RESUMEN:	The herbicides glyphosate, paraquat, and 2,4-D play a significant role in Thailand. This paper is among the first study to describe the intensity of herbicide application and illustrate how the herbicides are extensively distributed over a large area through both agricultural and nonagricultural practices. Using a quick, economical, and simplified method of Material Flow Analysis together with spatial analysis, better data for the analysis of possible environmental herbicide contamination, human exposure, and related health risks for the general public and applicators can be developed. The findings from this study showed that in the study province, about 2.2 million kg of the active ingredients from the three targeted herbicides is applied annually. Pathway flow modeling with spatial analysis identified several local hotspots of concern based on the type of herbicide and crop/activity where it was used. Cassava planting was found to have the highest herbicide application activity, whereas rice cultivation was the major contributor of total herbicide mass, due to the wide area of cultivation in the province. The herbicide most likely to be applied at rates higher than recommended was 2,4-D, particularly on cassava and sugarcane farms.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio se centró en estudiar la aplicación de tres herbicidas y cómo estos se expandían en una zona mediante tareas agrícolas y no agrícolas, con el fin de estudiar los riesgos de salud que ocasionaban en la población y en los trabajadores que los aplicaban. Se empleó un método de análisis de flujo de materiales y un análisis espacial. Entre otros hallazgos, se determinó que la plantación de yuca destacaba en la tarea de aplicación de herbicidas y que el cultivo de arroz era el que más contribuía en la cantidad de herbicidas por la gran superficie de cultivo. También se concluyó que el herbicida 2,4-D se empleaba en cantidades superiores a las recomendadas en yuca y caña de azúcar.

TÍTULO DEL TRABAJO	
An Analysis of Suicide Risk Factors among Farmers in the Midwestern United States (<i>Un análisis de los factores de riesgo de suicidio entre los agricultores del medio oeste de los Estados Unidos</i>)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Abril 2021, Volumen 18, Número 7, Número de artículo 3563
AUTORES:	Bjornestad, Andrea; Cuthbertson, Courtney; Hendricks, Jessie
DOI:	10.3390/ijerph18073563
RESUMEN:	Research on the complex relationships of variables contributing to farmer suicide is limited. The purpose of the study was to examine factors associated with suicide risk through the use of standardized instruments measuring psychological (depression, anxiety), social (social support), and contextual factors. A questionnaire was completed by 600 farmers in the Midwestern United States. A multiple linear regression model was used to analyze associations with suicide risk (SBQ-R), including depression (PHQ-9), anxiety (GAD-7), Brief COPE subscales (BC), social support (MSPSS), and select demographic and farming characteristics. The only variable that emerged as having a significant relationship with the natural log-transformed suicide risk score was coping through self-blame. While suicidality is often considered the outcome of mental illness, our findings do not suggest that suicide risk among farmers is related to mental illness, and a further examination of self-blame as a coping strategy is warranted.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudiaron los factores de riesgo de suicidio entre agricultores del medio oeste de Estados Unidos. Para ello, se analizaron factores psicológicos como la depresión y ansiedad, factores sociales como el apoyo social y factores contextuales. Se pasó un cuestionario a 600 agricultores. Uno de los factores que se determinó relacionado con el suicidio fue la autculpa.

TÍTULO DEL TRABAJO	
Examination of Symptoms of Depression among Cooperative Dairy Farmers (Examen de los síntomas de la depresión entre los granjeros de producción de leche de cooperativas)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Abril 2021, Volumen 18, Número 7, Número de artículo 3657
AUTORES:	Liang, Yanni; Wang, Kai; Janssen, Brandi; Casteel, Carri; Nonnenmann, Matthew; Rohlman, Diane S.
DOI:	10.3390/ijerph18073657
RESUMEN:	Farmers experience a high risk of stress, depression, and suicide. Risk factors are well documented but protective factors are seldom examined. Social support has been reported to reduce psychological distress among the general population but its effect on farmers is inconclusive. Agricultural cooperatives are typically created and owned by farmers to secure markets, access supplies and services, and participate in decision-making. It is unknown whether having cooperative resources impacts symptoms of depression. A survey was used to examine whether having access to cooperative programs and social support impacted symptoms of depression among dairy farmers. Farm bankruptcies, stress, depression, and suicide were identified as ongoing concerns. Having social support and cooperative educational opportunities and mentorship programs were associated with decreased symptoms of depression. Conversely, having cooperative policy discussions was associated with increased symptoms of depression. Results suggest that social support can potentially reduce symptoms of depression among farmers and having access to cooperative resources can reduce or increase it, depending on the type of program. Our findings identified an opportunity to further examine how programs provided by farmer-led organizations such as cooperatives can impact stress, depression, and suicide among farmers.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	En esta investigación se realizó una encuesta a granjeros de producción de leche para analizar si el acceso a programas cooperativos y el apoyo social influía en la depresión. Se determinó que el apoyo social disminuía los síntomas depresivos y que, según el programa cooperativo, estos síntomas se incrementaban o disminuían.

TÍTULO DEL TRABAJO	
Precarious Essential Work, Immigrant Dairy Farmworkers, and Occupational Health Experiences in Vermont <i>(Trabajo esencial precario, trabajadores de granjas de leche inmigrantes y experiencias de salud ocupacional en Vermont)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Abril 2021, Volumen 18, Número 7, Número de artículo 3675
AUTORES:	Panikkar, Bindu; Barrett, Mary-Kate
DOI:	10.3390/ijerph18073675
RESUMEN:	Migrant dairy workers in Vermont face a wide range of occupational and health hazards at work. This research examines the environmental risks, occupational health hazards, and health outcomes experienced by migrant dairy farm workers in Vermont. This research draws on a triangulation of sources including analysis of data-surveys and interviews with migrant dairy farmworkers gathered by the organization Migrant Justice since 2015 as well as relevant key informant interviews with community organizations across the state to characterize the occupational health experiences of migrant dairy workers in Vermont. Our results show that Vermont migrant dairy farmworkers received poor health and safety training and lacked sufficient protective gear. Over three quarters of the respondents reported experiencing harm from chemical and biological risks. Close to half the survey respondents reported headaches, itchy eyes and cough; a quarter reported breathing difficulties; three fourths reported being hurt by animal-related risks. These exposures and existing health concerns are avoidable. Migrant workers require better social representation and advocates to negotiate better work-related protection and training, access to health services, and social welfare to ensure their health and safety.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este documento se centra en analizar los riesgos ambientales y la salud en el trabajo de granjeros lecheros migrantes en Vermont. Se analizan encuestas y entrevistas realizadas por la organización "Migrant Justice". Se determinó que estos trabajadores no tenían suficiente formación en seguridad y salud en el trabajo y que les faltaban equipos de protección. Los participantes de la encuesta expusieron daños por distintos riesgos, síntomas como tos, falta de respiración, etc. Se concluyó la necesidad de una mejora en el ámbito de la seguridad y salud de estos trabajadores, siendo conveniente mejorar su representación social y defensores para ello.

TÍTULO DEL TRABAJO	
Migrant Agricultural Workers' Health, Safety and Access to Protections: A Descriptive Survey Identifying Structural Gaps and Vulnerabilities in the Interior of British Columbia, Canada <i>(Salud, seguridad y acceso a las protecciones de los trabajadores agrícolas migrantes: una encuesta descriptiva que identifica las brechas estructurales y las vulnerabilidades en el interior de la Columbia Británica, Canadá)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Abril 2021, Volumen 18, Número 7, Número de artículo 3696
AUTORES:	Colindres, Carlos; Cohen, Amy; Caxaj, C. Susana
DOI:	10.3390/ijerph18073696
RESUMEN:	In this paper, we provide descriptive data that characterize the health, safety, and social care environment of migrant agricultural workers in British Columbia, Canada. Through the administration of surveys (n = 179), we gathered information in three domains: (1) living and working conditions; (2) barriers to rights, health, safety and advocacy/reporting; (3) accessibility of services. Our study confirms what predominantly qualitative studies and Ontario-based survey data indicate in terms of health, legal, and social barriers to care and protection for this population. Our findings also highlight the prevalence of communication barriers and the limited degree of confidence in government authorities and contact with support organizations this population faces. Notably, survey respondents expressed a strong intention to report concerns/issues to authorities while simultaneously reporting that they lacked the knowledge to initiate such complaints. These findings call into question government responses that task the agricultural industry with addressing access and service gaps that may be more effectively addressed by government agencies and service providers. In order to improve supports and protections for migrant agricultural workers, policies and practices should be implemented that: (1) empower workers to independently access health, social, and legal protections and limit workers' dependence on their employers when help-seeking; (2) provide avenues for increased proactive inspections, anonymous reporting, alternative housing/employment and meaningful 2-way communication with regulators so that the burden of reporting is lessened for this workforce; (3) systematically address breaches in privacy, translation, and adequate workplace injury assessments in the healthcare system. Ultimately, the COVID-19 context has put into sharper focus the complex gaps in health, social and legal services and protections for migrant agricultural workers. The close chronology of our data collection with this event can help us understand the factors that have resulted in so much tragedy among this workforce.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio se centró en la salud, seguridad y atención a trabajadores migrantes que pertenecen al sector de la agricultura en la Columbia Británica. Se realizaron encuestas y los resultados coincidieron lo que indicaban estudios llevados a cabo en Ontario en relación con barreras sanitarias, legales y sociales. También se demostraron los obstáculos en la comunicación, la escasa confianza en autoridades y la relación con organizaciones de apoyo. Se propusieron prácticas y políticas que permitieran mejorar esta situación.

TÍTULO DEL TRABAJO	
Factors Associated with Practice of Chemical Pesticide Use and Acute Poisoning Experienced by Farmers in Chitwan District, Nepal (Factores asociados con la práctica del uso de plaguicidas químicos y el envenenamiento grave experimentado por los agricultores en el distrito de Chitwan, Nepal)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Abril 2021, Volumen 18, Número 8, Número de artículo 4194
AUTORES:	Kafle, Simrin; Vaidya, Abhinav; Pradhan, Bandana; Jors, Erik; Onta, Sharad
DOI:	10.3390/ijerph18084194
RESUMEN:	In view of increasing irrational use and unsafe handling of pesticides in agriculture in Nepal, a descriptive cross-sectional study was conducted to assess the practice of chemical pesticide use and acute health symptoms experienced by farmers. A total of 790 farmers from the Chitwan district were randomly selected for the study. X-2 test, T-test, and Multiple Logistic Regression were used for analysis. Among the farmers, 84% used exclusively chemical pesticide. Farmers with better knowledge on pesticide handling were 8.3 times more likely to practice safe purchasing, four times more likely to practice safe mixing and spraying, and two times more likely to practice safe storage and disposal. Similarly, perception/attitude of farmers about chemical pesticide policy and market management was significantly associated with the practice of farmers during purchasing, mixing and spraying, and storage and disposal. Among the users of chemical pesticides, 18.7% farmers experienced one or more pesticide related acute symptoms of health problems during the previous 12 months. Farmers with unsafe practices of pesticide handling were two times more likely to suffer from acute poisoning. It is concluded that knowledge about pesticide handling and favorable perception/attitude on pesticide policy and market management are the predictors of safe use of pesticide.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se realizó esta investigación para conocer la utilización de plaguicidas químicos y los síntomas de salud entre agricultores de Chitwan. Participaron 790 trabajadores y se realizó un estudio transversal descriptivo. El 84% de los agricultores empleaba únicamente plaguicidas químicos, de los que el 18,7% expusieron síntomas graves de salud. Los trabajadores que poseían más conocimientos mostraron una probabilidad mayor de realizar actividades seguras y por tanto, menor de intoxicarse. Se concluyeron los factores de utilización segura de plaguicidas: conocimientos sobre su utilización, actitud favorable en política de plaguicidas y gestión de mercado.

TÍTULO DEL TRABAJO	
<p>Cost, Severity and Prevalence of Agricultural-Related Injury Workers' Compensation Claims in Farming Operations from 14 US States <i>(Costo, gravedad y prevalencia de indemnización laboral por lesiones relacionadas con la agricultura en operaciones agrícolas de 14 estados de EE.UU.)</i></p>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Abril 2021, Volumen 18, Número 8, Número de artículo 4309
AUTORES:	Baidwan, Navneet Kaur; Ramirez, Marizen R.; Gerr, Fred; Boonstra, Daniel; Cavanaugh, Joseph E.; Casteel, Carri
DOI:	10.3390/ijerph18084309
RESUMEN:	<p>(1) Background: There is no national surveillance of agricultural injuries, despite agricultural occupations being among the most hazardous in the U.S. This effort uses workers' compensation (WC) data to estimate the burden of agricultural injuries and the likelihood of experiencing an injury by body part involved, cause, and nature in farming operations. (2) Methods: WC data from 2010 to 2016 provided by a large insurance company covering small to medium-sized farm operations from 14 U.S. states was used. We investigated the associations between injury characteristics and WC costs and the risk of having a more severe versus a less severe claim. The proportion of costs attributable to specific claim types was calculated. (3) Results: Of a total 1000 claims, 67% were medical only. The total cost incurred by WC payable claims (n = 866) was USD 21.5 million. Of this, 96% was attributable to more severe claims resulting in disabilities or death. The most common body part injured was the distal upper extremity. Falling or flying objects and collisions were the most expensive and common causes of injury. (4) Conclusions: Characterizing the cost and severity of agricultural injury by key injury characteristics may be useful when prioritizing prevention efforts in partnership with insurance companies and agricultural operations.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>El objetivo de este estudio fue determinar las lesiones en el sector de la agricultura y la probabilidad de sufrir una según zona corporal, causa y labor agrícola en trabajadores de EE.UU. Se emplearon datos de compensación de trabajadores de varios años obtenidos de una compañía de seguros que actuaba en 14 estados. De 1000 casos, el 67% se trataron de reclamaciones únicamente de salud. Del coste de reclamaciones de dinero, el 96% correspondía a problemas más graves con consecuencias serias. La lesión más frecuente se dio en la extremidad superior distal. Los factores que conducían a las lesiones más frecuentes y de coste mayor fueron las caídas, choques y vuelo de objetos.</p>

TÍTULO DEL TRABAJO	
A Narrative Review of Occupational Air Pollution and Respiratory Health in Farmworkers (Una revisión narrativa de la contaminación del aire ocupacional y la salud respiratoria en los trabajadores agrícolas)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Abril 2021, Volumen 18, Número 8, Número de artículo 4097
AUTORES:	Clarke, Kayan; Manrique, Andres; Sabo-Attwood, Tara; Coker, Eric S.
DOI:	10.3390/ijerph18084097
RESUMEN:	The agricultural crop sector in the United States depends on migrant, seasonal, and immigrant farmworkers. As an ethnic minority group in the U.S. with little access to health care and a high level of poverty, farmworkers face a combination of adverse living and workplace conditions, such as exposure to high levels of air pollution, that can place them at a higher risk for adverse health outcomes including respiratory infections. This narrative review summarizes peer-reviewed original epidemiology research articles (2000-2020) focused on respirable dust exposures in the workplace and respiratory illnesses among farmworkers. We found studies (n = 12) that assessed both air pollution and respiratory illnesses in farmworkers. Results showed that various air pollutants and respiratory illnesses have been assessed using appropriate methods (e.g., personal filter samplers and spirometry) and a consistent pattern of increased respiratory illness in relation to agricultural dust exposure. There were several gaps in the literature; most notably, no study coupled occupational air exposure and respiratory infection among migrant, seasonal and immigrant farmworkers in the United States. This review provides an important update to the literature regarding recent epidemiological findings on the links between occupational air pollution exposures and respiratory health among vulnerable farmworker populations.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio consistió en una revisión de los artículos publicados desde 2000 hasta 2020, basados en la exposición de los agricultores a polvo respirable durante su trabajo y en las enfermedades respiratorias a las que se enfrentan. Los resultados indicaron que se han analizado contaminantes del aire y enfermedades con métodos determinados. Además, se determinó un incremento de enfermedades relacionado con el contacto al polvo. No se encontraron estudios que relacionaran la exposición ocupacional al aire con enfermedades respiratorias en agricultores de EE.UU. que fueran migrantes, estacionales e inmigrantes.

TÍTULO DEL TRABAJO	
Tackling Airborne Virus Threats in the Food Industry: A Proactive Approach (Abordar las amenazas de virus transmitidos por el aire en la industria alimentaria: un enfoque proactivo)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Abril 2021, Volumen 18, Número 8, Número de artículo 4335
AUTORES:	Zimmerman, Tahl; Siddiqui, Shahida Anusha; Bischoff, Werner; Ibrahim, Salam A.
DOI:	10.3390/ijerph18084335
RESUMEN:	The current SARS-COVID-19 crisis has demonstrated the dangers that airborne virus (AV) pandemics pose to the health of all workers (particularly in the meat processing industry), the economic health of the food industry, and food security. The impact that the current pandemic has had on the food industry points to the need for a proactive rather than reactive approach towards preventing future AV outbreaks. Such a proactive approach should be based on empirical assessments of current AV food safety practices and the development of more robust practices tailored to the culture and needs of the food industry. Moreover, a proactive approach is necessary in order to better prepare the food industry for future AV outbreaks, protect the health of workers, reduce disparities in AV occupational health risks, and enhance the safety of the food supply chain. The aim of this review is to make the case for a new food safety research paradigm that incorporates the intensive study of airborne viruses under conditions that simulate food industry work environments.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	La pandemia del COVID-19 ha expuesto los riesgos de los virus que se transmiten mediante el aire para los trabajadores en la industria de procesamiento de carne, además de la economía y la seguridad alimentaria. Esto muestra que es necesario llevar a cabo un enfoque proactivo que permita la prevención de virus de este tipo. Por tanto, este estudio se centró en una nueva investigación en seguridad alimentaria que contemplara el análisis de virus transmitidos por el aire en las condiciones de los lugares de trabajo de la industria alimentaria.

12. SUSTAINABILITY

TÍTULO DEL TRABAJO	
Is the Environmental Behavior of Farmers Affecting Their Pesticide Practices? A Case Study from Greece (<i>¿Afecta el comportamiento medioambiental de los agricultores a sus prácticas de plaguicidas? Un caso de estudio en Grecia</i>)	
PUBLICADO EN:	Sustainability, Febrero 2021, Volumen 13, Número 3, Número de artículo 1452
AUTORES:	Karasmanaki, Evangelia; Dimopoulou, Panagiota; Vryzas, Zisis; Karipidis, Philippos; Tsantopoulos, Georgios
DOI:	10.3390/su13031452
RESUMEN:	Policymakers often assume that farmers with pro-environmental behavior are more likely to follow proper pesticide practices and thus, in order to improve the safety of their pesticide practices, they implement strategies and programs designed to raise environmental awareness among the general public. The aim of this paper is to examine whether pro-environmental behavior can instigate proper pesticide practices among farmers. According to our results, farmers' environmental behavior does not affect their pesticide practices and thus strategies aiming at raising environmental awareness among the general public would not prompt them to follow proper pesticide practices. In addition, the respondents reported following overall proper practices such as wearing masks and appropriate clothes during sprayings as well as rinsing the empty containers by performing the triple-rinse method. However, they did not wear gloves during applications, and many disposed the remaining pesticide concentrate to non-arable land. To conclude, in order to improve farmers' pesticide practices, strategies and programs specifically designed for farmers must be developed because those addressed to the general public would not be effective. Moreover, certain improper practices found in this study ought to be addressed by policymakers and actors involved in the agricultural sector.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	El objetivo de este estudio era conocer si los agricultores que tienen comportamientos en dirección a la mejora medioambiental realizan las medidas correctas en el uso de pesticidas. Los resultados mostraron que no influía, por lo que concienciar a la población en relación con el medio ambiente no mejoraría estas prácticas. En las encuestas que fueron realizadas en esta investigación, los trabajadores indicaban que tomaban medidas correctas como la utilización de mascarillas, vestimenta apropiada y triple lavado de envases vacíos en las labores de fumigación. En cambio, los guantes no eran empleados y los restos de pesticidas eran vertidos en tierra fuera del cultivo. Se concluyó la necesidad de estrategias y programas enfocados únicamente a los agricultores.

TÍTULO DEL TRABAJO	
Is a Training Program Sufficient to Improve the Smallholder Farmers' Productivity in Africa? Empirical Evidence from a Chinese Agricultural Technology Demonstration Center in Tanzania (<i>¿Es suficiente un programa de capacitación para mejorar la productividad de los pequeños agricultores en África? Evidencia empírica de un centro de demostración de tecnología agrícola china en Tanzania</i>)	
PUBLICADO EN:	Sustainability, Febrero 2021, Volumen 13, Número 3, Número de artículo 1527
AUTORES:	Mgendi, George; Mao, Shiping; Qiao, Fangbin
DOI:	10.3390/su13031527
RESUMEN:	The article aims to analyze the effect of training programs on the yield of smallholder farmers. The empirical analysis employed a sample of data collected from a rice farming household in the Mvomero district of Tanzania. The results indicate that the yield outcome among trained and non-trained farmers with water access for irrigation was significantly more than double; however, the yield difference between trained and non-trained farmers was insignificant in non-irrigated plots. Our findings have policy implications for agricultural development in developing countries where training programs alone may not be a panacea for smallholder farmers' productivity improvement. Therefore, respective governments, policymakers, and other agricultural stakeholders, should consider both farm and non-farm factors altogether, which may increase agricultural training effectiveness to address the challenges of low yields.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio se basó en evaluar resultados de programas de capacitación recibidos por pequeños agricultores. El análisis empírico utilizó datos de productores de arroz en Mvomero (Tanzania). Los resultados mostraron que los agricultores que habían recibido la formación obtuvieron un mayor rendimiento que los que no, cuando se trataba de trabajo en lugares con riego. En cambio, no hubo diferencia cuando se trataba de lugares sin riego. Se deberían mejorar las capacitaciones en el sector agrícola para aumentar los rendimientos de los trabajadores.

TÍTULO DEL TRABAJO	
A Method to Quantify the Detailed Risk of Serious Injury in Agricultural Production (Un método para cuantificar el riesgo detallado de lesiones graves en la producción agrícola)	
PUBLICADO EN:	Sustainability, Abril 2021, Volumen 13, Número 7, Número de artículo 3859
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DOI:	10.3390/su13073859
RESUMEN:	Agricultural injuries are a valuable social sustainability indicator. However, current methods use sector-scale production data, so are unable to assess the impact of changes in individual farming practices. Here, we developed a method that adopts a life cycle approach to quantify the number of serious injuries during agricultural production processes and assess the potential impact of changes in agricultural practices. The method disaggregates agricultural production into operations and estimates the contribution each operation makes to the frequency of different types of injuries. The method was tested using data collected by survey during an expert workshop in which sixteen participants were asked to estimate the parameters related to typical dairy cattle and pig farms. Parameter estimates for specific operations varied considerably between participants, so normalized values were used to disaggregate sector-scale statistics to production operations. The results were in general agreement with the results from other studies. Participants found it challenging to quantify the potential effect of new technologies. Provided suitable empirical statistical data are available, the method can be used to quantify the risk of injury associated with individual products and provide an ex-ante assessment of future developments in farming practices.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se creó un método para cuantificar las lesiones que son graves en producción agrícola y analizar los cambios en las prácticas de agricultura. Con este método se divide el trabajo de la agricultura en operaciones y se investiga cómo contribuye cada una a la aparición de lesiones. El método se empleó con datos que se obtuvieron en una encuesta en la que se estimaron parámetros relacionados con ganado lechero y granjas de cerdos. Los que participaron en la encuesta encontraron dificultades para cuantificar el efecto de nuevas tecnologías.