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NUEVOS TRABAJOS PUBLICADOS

1. ANNALS OF AGRICULTURAL AND ENVIRONMENTAL MEDICINE

TÍTULO DEL TRABAJO	
Importance of legal regulations resulting from technical harmonization in the European Union for improvement of work safety of farmers in Poland (<i>Importancia de las regulaciones legales resultantes de la armonización técnica en la Unión Europea para la mejora de la seguridad laboral de los agricultores en Polonia</i>)	
PUBLICADO EN:	Annals of Agricultural and Environmental Medicine, Septiembre 2021, Volumen 28, Número 3, pp. 378-384
AUTORES:	Zywicka, Agnieszka; Choina, Piotr; Jarosz, Mirosław Jerzy
DOI:	10.26444/aaem/141625
RESUMEN:	<p>Introduction and objective. Accidents exert a negative effect on the quality and standard of living of rural inhabitants, especially when they make it impossible to continue work on a farm, or this work may be performed only to a limited extent. The creation of effective legal mechanisms which would guarantee the safety of operation of machinery is a crucial issue, it is of a preventive character and considerably limits the number of accidents. Approximately 16.1 million people live in the rural areas and around 2.3 million work in the agricultural sector, which represents 14.5% of all labour in Poland in 2019.</p> <p>Objective. The aim of the study was to evaluate the legal regulations resulting from the directives of technical harmonization in the European Union for improvement of safety of work with the use of agricultural machinery in Poland.</p> <p>Materials and method. The method was critical analysis of legal acts in effect, court rulings, and statistical data concerning accidents on farms, made available by the Agricultural Social Insurance Fund (KRUS).</p> <p>Brief description of the state of knowledge. As a result of Poland's membership of the European Union, rural areas were covered by globalization processes and single market rules, within which there function legal mechanisms of safety and quality of products.</p> <p>Conclusions. Analysis of the 16 years of Poland's membership of the EU, resulted in positive results being observed in the use of the directives of technical harmonization, especially in reducing the number of accidents involving agricultural machinery. However, this improvement may result from using newly-purchased, modern and safer agricultural machinery covered by the conformity assessment, and preventive actions carried out by the Agricultural Social Insurance Fund. An impact of other factors, not analysed in the study, cannot be ruled out.</p>

RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analizó la normativa en relación a la mejora de la seguridad en el trabajo realizado con maquinaria en el sector de la agricultura en Polonia. Se consultaron estadísticas sobre accidentes laborales y otra información. Se concluyó una disminución del número de accidentes en el período analizado, aunque también podía deberse al uso de maquinaria más novedosa y segura o adopción de medidas de prevención.
TEMÁTICA	Seguridad en el trabajo; Normativa

2. APPLIED ERGONOMICS

TÍTULO DEL TRABAJO	
A preliminary investigation on upper limb exoskeleton assistance for simulated agricultural tasks <i>(Una investigación preliminar sobre la asistencia del exoesqueleto de las extremidades superiores para tareas agrícolas simuladas)</i>	
PUBLICADO EN:	Applied Ergonomics, Septiembre 2021, Volumen 95, Número de artículo 103455
AUTORES:	Harith, Hazreen H.; Mohd, Muhammad Fuad; Sowat, Sharence Nai
DOI:	10.1016/j.apergo.2021.103455
RESUMEN:	Manual harvesting is still prevalent in the agricultural industry. Accordingly, it is one of the largest contributors toward work-related musculoskeletal disorder. The cutting task in oil palm harvesting uses a long pole and involves repetitive and forceful motion of the upper limbs. Exoskeleton technology is increasingly explored to assist manual tasks performance in manufacturing and heavy industries, mainly for reducing discomfort and injuries, and improving productivity. This paper reports an initial investigation on the feasibility of using an upper limb exoskeleton to assist oil palm harvesting tasks. Previous studies highlighted that exoskeletons for agricultural activities should be adaptable to changing field tasks, tools and equipment. The immediate difference in the activity of three muscles were analyzed for a range of harvesting-simulated tasks. Lower activities were observed for tasks involving overhead work when using the prototype. Nevertheless, users' feedback highlighted that its design should be optimized for better acceptance.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio investigó la posibilidad de emplear un exoesqueleto de miembro superior durante la labor de recolección de palma aceitera. Se evaluaron tres músculos durante la realización de diversas tareas de recolección simuladas, concluyendo que era mejor su uso. Los usuarios indicaron que el diseño podía ser mejorado.
TEMÁTICA	Mejoras en el trabajo; Exoesqueleto

3. INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS

TÍTULO DEL TRABAJO	
Investigation of oil palm harvesting tools design and technique on work-related musculoskeletal disorders of the upper body <i>(Investigación del diseño de herramientas de recolección de palma aceitera y la técnica sobre los trastornos musculoesqueléticos de la parte superior del cuerpo relacionados con el trabajo)</i>	
PUBLICADO EN:	International Journal of Industrial Ergonomics, Noviembre 2021, Volumen 86, Número de artículo 103226
AUTORES:	Mohamaddan, S.; Rahman, M. A.; Munot, M. Andrew; Tanjong, S. J. ; Deros, B. M.; Dawal, S. Z. Md; Case, K.
DOI:	10.1016/j.ergon.2021.103226
RESUMEN:	The oil palm industry is one of the important sectors in Malaysia. The growth and development of this industry shows that Malaysia is the world second-largest oil palm producers. However, in the fresh fruit bunch (FFB) harvesting process, the harvesters are exposed to many types of work-related musculoskeletal disorders (WMSDs). The FFB harvesters tend to develop WMSDs especially the shoulders and trunk. Hence, it is important to identify the exposure levels, awkward postures and the reaction forces of muscle activity based on the posture and movement of the harvesters when using pole, chisel and loading spike during the harvesting process. The objective of this study was to investigate the effect of the design of oil palm FFB harvesting tools on WMSDs of the upper body. Rapid Upper Limb Analysis (RULA) was used to investigate and assess the exposure level on the harvester body during the harvesting process. The assessment showed that the shoulders and trunk have high exposure level and undergo awkward posture. Human Musculoskeletal Model Analysis (HMMA) was used to identify the reaction force exerted on the muscle during the FFB harvesting process. In this study, 4 muscles were analysed including Triceps, Biceps, Erector Spinae and Psoas Major. The highest reaction force of 16.36 N was found on the left triceps when handling a loading spike. In conclusion, it is important to address the risks by reviewing all possible aspects that contribute to the WMSDs and interventions on the tool design, task and working shifts may be required.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudió cómo afectaba el diseño de las herramientas empleadas para la recolección de palma aceitera en el desarrollo de trastornos musculoesqueléticos relacionados con el trabajo en la zona superior corporal. Se empleó el método de evaluación RULA (Rapid Upper Limb Analysis). Los resultados mostraron que los hombros y el tronco adoptaban una posición perjudicial y estaban expuestos al desarrollo de este tipo de trastornos. También se analizaron las fuerzas de reacción en 4 músculos durante esta labor, siendo la más elevada en el tríceps izquierdo. Se concluyó la importancia de evaluar los riesgos y la adopción de medidas en el diseño de herramientas, labores y turnos de trabajo.
TEMÁTICA	Trastornos musculoesqueléticos

TÍTULO DEL TRABAJO	
Cooling garments against environmental heat conditions in occupational fields: measurements of the effect of a ventilation jacket on the total thermal insulation <i>(Prendas de refrigeración frente a las condiciones de calor ambiental en los campos de trabajo: medidas del efecto de una chaqueta de ventilación sobre el aislamiento térmico total)</i>	
PUBLICADO EN:	International Journal of Industrial Ergonomics, Noviembre 2021, Volumen 86, Número de artículo 103320
AUTORES:	Del Ferraro, Simona; Falcone, Tiziana; Morabito, Marco; Messeri, Alessandro; Bonafede, Michela; Marinaccio, Alessandro; Gao, Chuansi; Molinaro, Vincenzo
DOI:	10.1016/j.ergon.2021.103230
RESUMEN:	Personal cooling garments (PCGs) can represent an adaptation solution to counteract heat strain and to improve worker's health and productivity (especially for some outdoor work activities as in agriculture and in the construction industry). The cooling effect of a ventilation jacket was preliminarily investigated carrying out "dry" tests in a climatic chamber on a thermal manikin. A standardized condition with air temperature, $t_a = 22.4$ degrees C, three different adjustments of the fan velocity ($v_f = 0$, $v_f = 2$ and $v_f = 4$), and three different ensembles (the single jacket, a work ensemble and a combination of both) were considered. Results showed significant increases in dry heat losses (through convection) for the trunk thermal zones, higher when the fans were on, for all the ensembles considered. Percent changes greatly exceeded 100 % for the thermal zones close to the fans. The air ventilation determined significant decreases of the total thermal insulation (IT) values (up to 35 %) compared to the fans-off condition, confirming and quantifying the cooling effect of the ventilation jacket.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	El uso de prendas de refrigeración es una medida para enfrentar el calor al que se exponen los trabajadores de ámbitos como la agricultura. Se estudió el uso de una chaqueta de ventilación realizando una serie de pruebas en una cámara climática con un maniquí. Se concluyó que el uso de esta prenda mostraba mejores resultados.
TEMÁTICA	Mejoras en el trabajo; Chaqueta de ventilación

4. JOURNAL OF AGROMEDICINE

TÍTULO DEL TRABAJO	
High Risk? Indoor Cannabis Producers' Perceptions of Occupational Health and Safety (<i>¿Alto riesgo? Percepciones de los productores de cannabis de interior sobre la seguridad y salud en el trabajo</i>)	
PUBLICADO EN:	Journal of Agromedicine, Octubre 2021, Volumen 26, Número 4, pp. 361-373
AUTORES:	Trask, Catherine; Koehncke, Niels; Trask, David
DOI:	10.1080/1059924X.2020.1795031
RESUMEN:	<p>Introduction Recent legal changes mean Canadian cannabis production has moved from an illegally grown crop to a potentially common one. However, little is known about the needs of long-time producers accustomed to operating outside a legal framework. In order to develop effective safety communication strategies, there is a need to better understand cannabis producers' perceptions of OHS regulations, OHS controls, and sources of OHS information. Methods The specific objectives of this study are to (1) Describe production tasks and identify potential hazards related to these tasks and (2) describe workers' current sources of OHS information. This study gathered two types of information: facility and production information gathered from key informants during three facility walkthroughs, and health and safety perceptions gathered during face to face interviews with nine cannabis production workers. Interviews were thematically analyzed using interpretive description. Results Cannabis production and related occupational health and safety issues occur within a larger context, and descriptions of contextual factors were interwoven with workers' responses which, on the whole, expressed positive views of occupational health and safety. Perceived barriers to OHS included cost, lack of specialized skills, and lack of worker consultation, while named sources of OHS information included courses, requests to OHS agencies, and the internet. Conclusion It is hoped that an enhanced understanding of Canadian cannabis producers can inform the development of effective occupational health and safety interventions to promote the health and productivity in this workforce.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>Se estudiaron las diferentes tareas llevadas a cabo en la producción de cannabis en Canadá y se determinaron sus riesgos. Además, se analizó la forma de proporcionar información a los trabajadores sobre seguridad y salud en el trabajo. Se recogió información relacionada con las instalaciones y la producción y se realizó una entrevista a nueve trabajadores. Los resultados mostraron que los trabajadores tenían buenas opiniones sobre seguridad y salud en su trabajo. Se detectaron algunos obstáculos en este ámbito como el coste, baja especialización y falta de consulta con trabajadores. Los trabajadores eran informados en seguridad y salud mediante cursos, internet y solicitudes a agencias de este ámbito.</p>
TEMÁTICA	Seguridad y salud en el trabajo

TÍTULO DEL TRABAJO	
Fatal Agricultural Accidents in Kansas: A Thirty-Nine-Year Follow-Up Study with an Emphasis on Vehicular Fatalities (<i>Accidentes agrícolas mortales en Kansas: un estudio de seguimiento de treinta y nueve años con énfasis en muertes con vehículos</i>)	
PUBLICADO EN:	Journal of Agromedicine, Octubre 2021, Volumen 26, Número 4, pp. 374-380
AUTORES:	Keller, Weston; Helmer, Stephen D.; Reyes, Jared; Hauschild, Donald; Haan, James M.
DOI:	10.1080/1059924X.2020.1795033
RESUMEN:	The purpose of this study was to evaluate trends in agricultural mortality before and after implementation of safety initiatives. Retrospective review of Kansas mortality data from agriculture-related injuries from 1979 to 2018. The 39-year period was stratified into four periods to compare mechanisms of injury and fatality rates between study periods. There were 780 agricultural-related deaths. Mean age significantly increased between study Period I to Period IV from 46.4 to 55.3 years ($P=0.013$). Tractors remain the primary cause of farm-vehicle mortality overall; however, tractor-related deaths significantly decreased during the study periods from 75.6% to 44.3% ($P<0.001$). Tractor rollover mortality also decreased from 50.8% to 25.6% ($P=0.036$). ATV-related deaths significantly increased from study Period II to III (5.1% to 23.9%, $P<0.001$), but decreased from Period III to IV (23.9% to 17.0%). Tractor-related fatalities are decreasing, but tractors still remain the most dangerous piece of farm equipment. ATV-related fatalities are a continued concern. Continued rural education and emphasis on the use of rollover protection structures is a critical focus in the effort to prevent fatal farming injuries.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se investigó la tendencia de muertes en trabajadores del sector agrícola antes y después de la aplicación de medidas de seguridad en Kansas. Se dividió el estudio en cuatro períodos. Se concluyó que los accidentes con tractores eran una de las principales causas de muerte en el sector agrícola, aunque se determinó que habían disminuido.
TEMÁTICA	Accidentes o lesiones laborales; Vehículos agrícolas

TÍTULO DEL TRABAJO	
Operator and Potential Exposure to Hydrogen Sulfide: A Study of the British Columbia Dairy Industry (Operador y exposición potencial al sulfuro de hidrógeno: un estudio de la industria láctea de Columbia Británica)	
PUBLICADO EN:	Journal of Agromedicine, Octubre 2021, Volumen 26, Número 4, pp. 381-388
AUTORES:	O'Leary, T.; Merkowsky, K.; Trask, C.; Bennett, W.; Kirychuk, S.
DOI:	10.1080/1059924X.2020.1795036
RESUMEN:	Hydrogen Sulfide (H ₂ S) is produced in manure storage facilities and released during manure agitation. Exposure to this gas presents health risks to workers at daily exposure of greater than 10 parts per million (ppm). Exposure levels on BC dairy farms are unknown. The aim of this study was to document peak H ₂ S exposure levels to operators and bystanders during manure agitation on British Columbia dairy farms to determine if action levels were exceeded. Farms were evaluated at two time points during manure agitation. Both operator exposure and potential exposure sampling were undertaken. Peak hydrogen sulfide levels were measured and categorized as greater than or less than the ceiling level (10 ppm) and action level (5 ppm). Associations between H ₂ S levels above the ceiling level and farm factors were assessed. Measures were recorded at 43 dairy farms with 91 total measures recorded. Action levels were exceeded in 30% of operator measures and 64% of potential exposure measures while 20% of operator and 53% of potential peak H ₂ S measures exceeded 10 ppm. Manure storage facilities were evenly distributed between indoor and outdoor locations with under-barn (43%) and outdoor storage (47%) most common. Sawdust was the most prominent bedding type (65%). Tractor operated propeller was the most common type of agitation equipment (62%). Manure temperature remained a significant predictor in the multivariate model for operator peak exposure. Exposure to H ₂ S above the action level commonly occurs on BC Dairy farms. Given that Worksafe BC requires exposure control plans for H ₂ S levels above 5 ppm, and that on dairy farms, measures of operator and potential H ₂ S exposures were recorded above these levels, best practices to reduce potential H ₂ S exposure are necessary to reduce possible operator and bystander exposure.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se investigó si la exposición a sulfuro de hidrógeno en granjas lecheras de Columbia Británica durante la agitación de estiércol superaba los niveles de acción. Se recogieron muestras y se tomaron medidas. Se concluyó que los niveles de exposición eran perjudiciales para trabajadores y población. Se deberían aplicar medidas para disminuirlos.
TEMÁTICA	Exposición; Sulfuro de hidrógeno

TÍTULO DEL TRABAJO	
Survey on Agricultural Accidents or Injuries in Taiwan (Encuesta sobre accidentes o lesiones agrícolas en Taiwán)	
PUBLICADO EN:	Journal of Agromedicine, Octubre 2021, Volumen 26, Número 4, pp. 404-410
AUTORES:	Tsai, Wen-Tien
DOI:	10.1080/1059924X.2020.1845895
RESUMEN:	The agricultural industry has been identified as one of the most hazardous industries in developed countries. The main purpose of this paper was to conduct a comprehensive analysis of agricultural accidents (or injuries) in Taiwan during the period of 2009 to 2018. The occupational accident rates (per 1,000 farmers employed) in Taiwan's agricultural industry showed a decreasing trend over the past decade from 1,486 in 2009 to 1,053 in 2018. This trend could be attributed to the joint-cooperation efforts of the industrial, official, academic, and non-profit parties under the Occupational Safety and Health Act (OSHA) revised in 2013. Although the occupational accident, disability, and other injury rates in all non-agriculture industries were higher than those in the agricultural industry during this period, the fatality rates in the agricultural industry were higher than those in all industries. Finally, some inter-ministerial measures on occupational safety and health issues in the agricultural industry for preventing agricultural accidents or injuries were recommended in the paper.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se hizo un estudio sobre los accidentes o lesiones en el sector de la agricultura que ocurrieron entre 2009 y 2018 en Taiwán. La tasa de accidentes relacionados con el trabajo disminuyó entre estos años. Además, hubo más accidentes en otros ámbitos laborales, pero por el contrario el número de muertes en agricultura fue mayor que en el resto.
TEMÁTICA	Accidentes o lesiones laborales

TÍTULO DEL TRABAJO	
Identifying Farmer Workplace Injury Risk Factors in Ireland Using Farm Accounts Data (Identificación de los factores de riesgo de lesiones en el lugar de trabajo de los agricultores en Irlanda utilizando datos de cuentas agrícolas)	
PUBLICADO EN:	Journal of Agromedicine, Octubre 2021, Volumen 26, Número 4, pp. 411-419
AUTORES:	McNamara, John; Kinsella, Anne; Osborne, Aoife; Blake, Catherine; Meredith, David; Kinsella, James
DOI:	10.1080/1059924X.2020.1837704
RESUMEN:	Identification of occupational workplace injury risk factors is dependent on gaining sufficient and reliable data on both injury occurrence and associated workplace factors. Assessing workplace injury risk factors associated with farming is challenged by non-collection, non-reporting, or under-reporting by farmers, particularly those operating family farms in a self-employed manner. A supplementary (or add-on) farm operator (FO) workplace injury survey was undertaken in association with the Irish National Farm Survey (NFS), which is responsible for provision of Irish farm-level data to the European Commission (EC) Farm Accountancy Data Network (FADN). Data from this add-on survey were analyzed in association with farm and socio-economic data routinely collected by NFS as a component of the FADN. The combined data-set was analyzed using both descriptive and inferential statistical techniques including multivariate logistic regression to identify risk factors for occurrence of farm operator workplace injuries (FOWI). FOWI levels were significantly higher on farms where both the FO and their spouse engaged in Off Farm Employment (OFE). More generally, FO injury levels were associated with farm workload and investment levels. The study demonstrates how FADN farm and socio-economic data can be combined with additional FO workplace injury data to identify workplace injury risk factors. The study identifies a risk factor for FOWI occurrence where both FO and spouse engaged in OFE. More generally, it indicates that farm workplace injuries are associated with farm management-related factors.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudiaron los riesgos de desarrollo de lesiones en propietarios de granjas mediante el uso de encuestas y recopilación de datos. Se determinó que las lesiones fueron más frecuentes en granjas en las que el propietario y su cónyuge participaban en un trabajo fuera de la granja. Además, las lesiones se relacionaron con carga de trabajo y niveles de inversión.
TEMÁTICA	Accidentes o lesiones laborales

TÍTULO DEL TRABAJO	
Hazard Control Methods to Improve Agricultural All-Terrain Vehicle Safety (Métodos de control de peligros para mejorar la seguridad de los vehículos agrícolas todoterreno)	
PUBLICADO EN:	Journal of Agromedicine, Octubre 2021, Volumen 26, Número 4, pp. 420-435
AUTORES:	Khorsandi, Farzaneh; Ayers, Paul; Denning, Gerene; Jennissen, Charles; Jepsen, Dee; Myers, Melvin; Oesch, Stephen; Pate, Michael; White, David J.
DOI:	10.1080/1059924X.2020.1837705
RESUMEN:	All-terrain vehicle (ATV) crashes are one of the leading causes of death and injury in agriculture across the United States. Use of ATVs is highly prevalent in rural areas and has seen an increase in their application for a variety of agricultural work tasks. Empirical research on the use of these vehicles for agricultural tasks and associated injuries is limited, especially in the United States. Moreover, little is known about the risk factors associated with ATV-related injuries while doing farm work. A comprehensive review was conducted to evaluate the current injury burden of ATV use in agriculture, the need for future research, and possible solutions related to agricultural ATV safety. Potential injury prevention approaches are evaluated based on the hierarchy of control, including elimination or substitution (using side-by-side vehicles instead of ATVs or modifying ATV design), engineering control (operator protection devices), administrative authority (regulations and standards in the United States and around the world), training, and use of personal protective equipment. In addition, vehicle nomenclature, risk factors, and crash mechanisms are reviewed. Recommendations to decrease the likelihood of ATV crashes and injuries are provided.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudiaron las lesiones desarrolladas debido a la utilización de vehículos agrícolas todoterreno, la necesidad de nuevas investigaciones sobre el tema y la adopción de medidas de seguridad. La prevención de lesiones se centró en el uso de equipos de protección personal, control de ingeniería, capacitación, etc. Se establecieron medidas para reducir los accidentes o lesiones con estos vehículos.
TEMÁTICA	Accidentes o lesiones laborales; Vehículos agrícolas

TÍTULO DEL TRABAJO	
A Comparison of Pesticide Risk Beliefs between Farmers and Farmworkers: Implications for Risk Communication and Education <i>(Una comparación de las creencias sobre el riesgo de los plaguicidas entre agricultores y trabajadores agrícolas: implicaciones para la educación y comunicación de riesgos)</i>	
PUBLICADO EN:	Journal of Agromedicine, Octubre 2021, Volumen 26, Número 4, pp. 436-440
AUTORES:	Walton, AnnMarie L.; LePrevost, Catherine E.; Hatch, Daniel J.; Grisle, Sonja Y.
DOI:	10.1080/1059924X.2021.1879698
RESUMEN:	Understanding the multi-dimensional risk beliefs of agricultural audiences allows risk communicators and educators to target those beliefs to improve practices. This study was designed to assess pesticide risk beliefs among English-speaking farmers and Spanish-speaking farmworkers and to compare their beliefs. The Pesticide Risk Beliefs Inventory (PRiBI) is a 19-item quantitative instrument used to assess the alignment of risk beliefs with those beliefs of experts in the field. A higher score on the PRiBI relates to an agreement with expert beliefs regarding pesticide risk. Farmers' and farmworkers' scores were significantly different on items corresponding to the use of physical properties to determine risk and specific adverse health outcomes associated with pesticide exposure. With an understanding that farmworkers rely on the physical properties of pesticides to assess risk, educators and farmers can encourage more reliable ways to assess pesticide hazards.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analizaron las creencias de los trabajadores de habla hispana e inglesa sobre los riesgos de la utilización de plaguicidas. Se empleó para ello el inventario de creencias sobre el riesgo de plaguicidas. Puntuaciones elevadas significaban acuerdo con las creencias de los expertos en este tema. Las puntuaciones obtenidas de los agricultores y trabajadores agrícolas fueron diferentes en el caso de la utilización de propiedades físicas para determinar riesgos y en los problemas de salud.
TEMÁTICA	Plaguicidas; Creencias

5. JOURNAL OF OCCUPATIONAL HEALTH

TÍTULO DEL TRABAJO	
Association between physical capacity and occupational falls among middle-aged and older farmers in Thailand: Using the self-check risk assessment tool in Japan (Asociación entre capacidad física y caídas en el trabajo entre agricultores de mediana edad y mayores en Tailandia: uso de la herramienta de evaluación de riesgos de autocomprobación en Japón)	
PUBLICADO EN:	Journal of Occupational Health, Noviembre 2021, Volumen 63, Número 1, Número de artículo e12287
AUTORES:	Arphorn, Sara; Lertvarayut, Teepapipat; Kiatkitroj, Kanpitcha; Theppitak, Chalermisiri; Manothum, Aniruth; Hara, Kunio; Ishimaru, Tomohiro
DOI:	10.1002/1348-9585.12287
RESUMEN:	Objectives Declining physical capacity caused by aging increases the risk of occupational falls on the same level and to lower levels. In emerging countries in Asia, the development of a program for older farmers to assess their risk of occupational falls is valuable. The current study aimed to evaluate the relationship between physical capacity and experience of occupational falls among middle-aged and older Thai farmers. Methods We conducted a cross-sectional survey of 419 Thai farmers aged 40 years and over during March and April, 2021. For the assessment of physical capacity, we used the Self-Check Risk Assessment of Falls and Other Accidents in the Workplace tool developed in Japan, consisting of five physical test components. Multiple logistic regression and receiver operating characteristic curves were used to analyze the data. Results The results revealed that 25.5% of participants had experienced occupational falls in the past 12 months. For each of the five physical test components, there was no significant association between physical capacity and experience of occupational falls. The area under the receiver operating characteristic curve was less than 0.60 for each of the five physical test components. A similar trend was observed when the analysis was limited to participants aged 50 years and over. Conclusions The current study did not reveal any associations between physical capacity in each test and experience of occupational falls among middle-aged and older Thai farmers. Because the mechanisms underlying occupational falls are complex, multiple intervention approaches may be important for preventing accidents.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este trabajo se centró en analizar la asociación entre la capacidad física y las caídas en el trabajo en agricultores mayores y de mediana edad en Tailandia. Se llevó a cabo una encuesta a 419 trabajadores de 40 años y de mayor edad. También se emplearon otras herramientas. Entre otros resultados, se determinó que el 25,5% de los trabajadores evaluados se había caído en el trabajo en los últimos 12 meses. Se concluyó que no existía relación entre capacidad física y las caídas en el trabajo.
TEMÁTICA	Seguridad en el trabajo; Caídas

TÍTULO DEL TRABAJO	
Risk assessment of farmers handling pelleted seeds containing crystalline silica and attapulgite (Evaluación de riesgos de los agricultores que manipulan semillas granuladas que contienen sílice cristalina y atapulgita)	
PUBLICADO EN:	Journal of Occupational Health, Diciembre 2021, Volumen 63, Número 1, Número de artículo e12304
AUTORES:	Hirano, Mitsugu ; Mbelambela, Etongola Papy; Eitoku, Masamitsu; J-P, Naw Awn; Iida, Yukiko; Terada, Masaichi; Suganuma, Narufumi
DOI:	10.1002/1348-9585.12304
RESUMEN:	<p>Objectives This study aimed to assess the risk to farmers from handling pelleted seeds that include crystalline silica and attapulgite. Methods We measured personal exposure levels to respirable crystalline silica and attapulgite in the experimenter representing a farmer in a simulated workplace. From these values, the annual occupational exposure levels were estimated and compared with the established occupational exposure limits. To assess the toxicity of respirable crystalline silica and attapulgite, digital chest images of workers in a factory producing pelleted seeds were examined. Results The personal exposure measurement results showed that the concentrations of total dust, respirable dust, and respirable crystalline silica generated during work handling of pelleted seeds were 0.27, 0.06, and 0.00043 mg/m(3), respectively. The estimated annual occupational exposure level to total dust, respirable dust, and respirable crystalline silica in farmers was 10(3) to 10(4) times lower than established occupational exposure limits. Attapulgite was not detected by analysis of the pelleted seeds themselves or dust collected during the personal exposure measurements. No pulmonary parenchymal or pleural lesions were detected in the digital chest images of the factory workers. Conclusion We found that farmers handling pelleted seeds would not be exposed to levels of total dust, respirable dust, respirable crystalline silica, and attapulgite derived from pelleted seeds exceeding occupational exposure limits. These results suggest that the risk to farmers of handling pelleted seeds is negligible.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se investigó el riesgo en trabajadores debido a la manipulación de semillas granuladas que incluían sílice cristalina y atapulgita. Se midieron los niveles de exposición en un entorno laboral simulado y se analizaron imágenes de tórax de trabajadores. Se concluyó que los agricultores no se exponían a niveles peligrosos que fueran superiores a los establecidos, por lo que no se trata de un riesgo importante.
TEMÁTICA	Exposición; Sílice cristalina y atapulgita

6. SPANISH JOURNAL OF AGRICULTURAL RESEARCH

TÍTULO DEL TRABAJO	
User-centred design to promote the effective use of rear-mounted foldable roll-over protective structures (FROPSs): prototype evaluation among novice and expert farmers <i>[Diseño centrado en el usuario para promover el uso eficaz de estructuras protectoras en caso de vuelco (FROPS) plegables montadas en la parte trasera: evaluación de prototipos entre agricultores novatos y expertos]</i>	
PUBLICADO EN:	Spanish Journal of Agricultural Research, Septiembre 2021, Volumen 19, Número 3, Número de artículo e0207
AUTORES:	Vigoro, Lucia; Caffaro, Federica; Cavallo, Eugenio; Cremasco, Margherita Micheletti
DOI:	10.5424/sjar/2021193-17768
RESUMEN:	<p>Aim of study: We tested the perceived quality in use of a prototype of a handling supporting device, developed through a user-centred design process intended for rear-mounted foldable rollover protective-structures (FROPSs).</p> <p>Area of study: The study was performed in the Province of Cuneo, which has the largest number of farms and the highest share of utilized agricultural area (UAA) in Piedmont Region, NW Italy.</p> <p>Material and methods: Three groups of users, novice-novice (NN), novice-expert (NE) and expert-expert (EE) were asked to raise two rear-mounted FROPSs: a traditional one and a second one equipped with a supporting device which consisted of a gas spring and a rod. A questionnaire has been used to record the perceived quality in use of both FROPSs (effort, physical discomfort, temporal demand and ease of use) and perceived usefulness and attitudes toward the adoption of the supporting device.</p> <p>Main results: All groups reported less physical effort, more stable postures, higher ease of use in handling the FROPS equipped with the supporting device; NN users, in particular, declared to be willing to adopt the supporting device in the future on their tractors when commercially available.</p> <p>Research highlights: Previous studies reported discomfort in operating the FROPS as the main cause of its improper use. A solution to improve FROPS reachability was developed and tested with users. Benefits were perceived by both novice users and expert users.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analizó un prototipo, realizado mediante un procedimiento de diseño centrado en el usuario, para estructuras protectoras en caso de vuelco plegables montadas en la parte trasera de tractores. Tres grupos de personas de diferente experiencia levantaron dos tipos de este dispositivo, uno tradicional y uno nuevo. Se empleó un cuestionario para la evaluación. Los resultados mostraron para todos los grupos un esfuerzo menor, posiciones menos incómodas y manejo más sencillo con el nuevo dispositivo.
TEMÁTICA	Tractores

7. JOURNAL OF SAFETY RESEARCH

TÍTULO DEL TRABAJO	
Worker-fatigue contributing to workplace incidents in New Zealand Forestry (<i>La fatiga de los trabajadores contribuye a los incidentes en el lugar de trabajo en la silvicultura de Nueva Zelanda</i>)	
PUBLICADO EN:	Journal of Safety Research, Diciembre 2021, Volumen 79, pp. 304-320
AUTORES:	Hinze, Annika; König, Jemma L; Bowen, Judy
DOI:	10.1016/j.jsr.2021.09.012
RESUMEN:	Reports of incidents in dangerous work environments can be analysed to identify common hazards, in turn aiding in the prevention of future accidents. Whilst studies exist that do this, most focus on causes that involve physical risks. In this paper we propose an alternative approach, and illustrate causes of forestry incidents from the perspective of worker-failure and fatigue. Method This paper outlines the analysis of eight years' worth of New Zealand forestry incident data, with a focus on the cause of, and time that, incidents occur. Results This has resulted in two main findings. First, 70% of incidents can be attributed, at least in part, to worker-failures. Second, 78% of worker-failure based causes show indications of fatigue. This indicates that a significant number of forestry incidents are caused by worker-fatigue. Finally, this dataset showed inconsistencies in data quality, similar to those that exist in other datasets. This did not affect our analysis. However, these types of errors have the potential to affect the data quality in the national reporting system. Impact on industry The results from this study will be used in a larger project on detecting fatigue in forestry workers for injury and incident prevention. It is also our hope that other researchers may find these results of interest for further fatigue prevention research in hazardous industries.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se revisaron datos sobre incidentes en el ámbito forestal en Nueva Zelanda, correspondientes a ocho años. Se analizaron las causas y el momento en que se produjeron. Se concluyó que el 70% de estos incidentes se debían principalmente a fallos de los trabajadores. El 78% de estos fallos estaban relacionados con la fatiga. Por lo tanto, la fatiga de los trabajadores fue una de las causas de este tipo de accidentes.
TEMÁTICA	Accidentes o lesiones laborales; Fatiga

8. SAFETY SCIENCE

TÍTULO DEL TRABAJO	
Evaluation of the Lifejackets for Lobstermen program: A social marketing initiative to increase lifejacket use in the Northeast lobster fishing industry (Evaluación del programa Chalecos salvavidas para pescadores de langosta: una iniciativa de marketing social para aumentar el uso de chalecos salvavidas en la industria pesquera de langosta del noreste)	
PUBLICADO EN:	Safety Science, Octubre 2021, Volumen 142, Número de artículo 105354
AUTORES:	Sorensen, Julie A.; Weil, Rebecca; Echard, Jessica; Tinc, Pam; Hirabayashi, Liane; Roome, Amanda; Lally, Erin; Jenkins, Paul
DOI:	10.1016/j.ssci.2021.105354
RESUMEN:	<p>Background: Fatality data from the U.S. commercial fishing industry indicates workers in this industry suffer from comparatively high rates of work-related death, in relation to other U.S. industries. Falls overboard are the most frequent cause of death among Northeast lobster fishermen, who make up a large proportion of the commercial fishing industry in this region. PFDs can be an effective solution for preventing fatalities due to falls overboard and vessel sinkings. This study describes the implementation and impact of an intervention focused on increasing PFD use among lobster fishermen in MA and ME.</p> <p>Methods: The intervention, entitled "Lifejackets for Lobstermen", utilized social marketing principles to make PFDs an appealing and accessible option for lobster fishermen. This included offering a variety of fishermen-approved PFDs, as well as making access to these PFDs easy and affordable by bringing them to ports and offering 50% discounts. The program was also promoted widely using slogans and pictures that connected PFD use to fishermen's values and interests. Intervention impact was measured using pre and post intervention surveys measuring changes in fishermen's readiness to wear PFDs and through intervention PFD sales.</p> <p>Results: Survey data indicate a significant shift in readiness to wear PFDs in the ME and MA lobster fishing industry in both the treatment and control regions of the study. The largest shifts occurred among fishermen who had not considered wearing PFDs previously. However, during the study assessment period, 88% of intervention PFD sales came from fishermen in the treatment region.</p> <p>Conclusions: The application of social marketing principles to increase the use of PFDs among lobster fishermen in MA and ME successfully increased fishermen's willingness to consider and purchase PFDs on fishing vessels.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este trabajo se basó en fomentar la utilización de chalecos salvavidas por parte de los pescadores de langosta. Para ello, se llevaron a los puertos, se ofreció una gran variedad, se realizaron descuentos y se utilizaron lemas e imágenes que llamaran su atención. El éxito de la intervención se evaluó mediante encuestas y a través de las ventas. Esta intervención

	mejoró la idea de los pecadores acerca de considerar la utilización y de comprar este tipo de chalecos durante su trabajo.
TEMÁTICA	Mejoras en el trabajo; Chalecos salvavidas

TÍTULO DEL TRABAJO	
Severity of occupational agricultural accidents in Spain, 2013-2018 (<i>Gravedad de los accidentes laborales agrarios en España, 2013-2018</i>)	
PUBLICADO EN:	Safety Science, Noviembre 2021, Volumen 143, Número de artículo 105422
AUTORES:	Baraza, Xavier; Cuguero-Escofet, Natalia
DOI:	10.1016/j.ssci.2021.105422
RESUMEN:	The objective of this paper is to understand the causes of work accidents in Spain in the agricultural sector, and to propose possible plans and actions to improve the sector's accident rates in the future. The paper analyses the complete pool of accidents in Spain from 2013 to 2018. Fourteen variables are studied, with the influence of each relating to accident severity, divided into three types (light, serious, and fatal). The analysis is based on a total of 158,166 accidents. Results show that the severity of the accident is related to age, gender, nationality, economic activity, company staff, length of service, location of accident, deviation, injury, days of absence, day of the week, injury, and region of Spain. This sector produces a high rate of serious accidents compared to all other sectors, employs the most foreign workers, and uses heavy machinery at work that also serves as a means of transport. We offer conclusions and future lines of research to improve worker safety and also help regulators. These results provide information that should be of use for both companies and regulators, to increase the safety of agricultural activities. This study analyzes accidents in the agriculture sector in Spain in the period between 2013 and 2018, therefore conclusions may be different when other countries of the European Union or of the rest of the world are considered.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio se centró en determinar las causas de la siniestralidad relacionada con el trabajo en el ámbito de la agricultura en España. Además, también se recomendaron medidas de mejora. Se analizaron todos los accidentes ocurridos entre los años 2013 y 2018. Se evaluaron 14 variables y se relacionaron con la gravedad del accidente. Según los resultados, la gravedad se asocia con el sexo, la edad, lugar, nacionalidad, etc. Se concluye que en la agricultura el número de accidentes de gravedad es mayor que en otros ámbitos de trabajo.
TEMÁTICA	Accidentes o lesiones laborales; Gravedad

9. SAFETY AND HEALTH AT WORK

TÍTULO DEL TRABAJO	
Prevalence of Low Back Pain and Associated Risk Factors among Farmers in Jeju (Prevalencia del dolor lumbar y los factores de riesgo asociados entre los agricultores de Jeju)	
PUBLICADO EN:	Safety and Health at Work, Diciembre 2021, Volumen 12, Número 4, pp. 432-438
AUTORES:	Lee, Hyun Jung; Oh, Jung-Hwan; Yoo, Jeong Rae; Ko, Seo Young; Kang, Jeong Ho; Lee, Sung Kgun; Jeong, Wooseong; Seong, Gil Myeong; Kang, Chul Hoo; Song, Sung Wook
DOI:	10.1016/j.shaw.2021.06.003
RESUMEN:	<p>Background: We aimed to investigate the prevalence of low back pain (LBP) and its associated agricultural work-related, biomechanical factors among this population.</p> <p>Methods: We analyzed initial survey data from the Safety for Agricultural Injury of Farmers cohort study involving adult farmers in Jeju Island. The prevalence of LBP was calculated with associated factors.</p> <p>Results: In total, 1,209 participants were included in the analysis. The overall prevalence of LBP was 23.7%. Significant associations for LBP were the type of farming activity, length of farming career, prior agricultural injury within 1 year, and stress levels. Multivariate logistic regression analysis revealed three biomechanical factors significantly related to LBP: repetitive use of particular body parts; the inappropriate posture of the lower back and neck.</p> <p>Conclusions: Some occupational, and biomechanical risk factors contribute to LBP. Therefore, postural education, injury prevention education, and psychological support will be needed to prevent LBP. (C) 2021 Occupational Safety and Health Research Institute, Published by Elsevier Korea LLC.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se estudió el dolor en la zona lumbar y los factores biomecánicos que lo provocaban en trabajadores agrícolas. Se analizaron los datos de una encuesta en adultos de la isla de Jeju. Participaron 1209 personas. Un 23,7% correspondía a dolor en esta zona. Se relacionó con el tipo de labor, el estrés, etc. Los factores biomecánicos fueron las posturas repetitivas de ciertas zonas del cuerpo y posiciones perjudiciales de la zona lumbar y el cuello. Formación sobre posturas, sobre prevención de lesiones y apoyo psicológico podrían contribuir a la prevención de esta molestia.
TEMÁTICA	Accidentes o lesiones laborales; Dolor lumbar

10. AGRICULTURE-BASEL

TÍTULO DEL TRABAJO	
Characteristics of Agricultural Dust Emissions from Harvesting Operations: Case Study of a Whole-Feed Peanut Combine <i>(Características de las emisiones de polvo agrícola de las operaciones de recolección: estudio de caso de una cosechadora de maní de alimento completo)</i>	
PUBLICADO EN:	Agriculture-Basel, Noviembre 2021, Volumen 11, Número 11, Número de artículo 1068
AUTORES:	Zhang, Peng; Xu, Hongbo; Hu, Zhichao; Chen, Youqing; Cao, Mingzhu; Yu, Zhaoyang; Mao, Enrong
DOI:	10.3390/agriculture11111068
RESUMEN:	<p>The rapid development of peanut mechanization has increased the amount of dust expelled from peanut mechanized operations, which degrades the air quality and endangers the health of agricultural workers. Therefore, the purpose of this study is to figure out the characteristics of dust emission from mechanized peanut harvesting. To this end, the particulate matters of diameters <math>\leq 2.5 \mu\text{m}</math> and <math>\leq 10 \mu\text{m}</math> and the total suspended particles were sampled in real time during peanut harvesting in Henan Province, China, and the airborne particle concentrations and particle size distributions were measured. The dust particles discharged during the mechanized peanut harvesting were concentrated within the 2~30 μm size range. When the wind speed was reduced below the settling velocity of the largest particles, the more massive particles were carried in the downwind. The amount of free silica in the dust samples was determined by X-ray diffraction analysis. Both the total dust and free silica concentrations exceeded the occupational exposure and threshold limits. To improve the characteristics of dust emission, the microstructure and dispersion of the dust were also investigated. Reducing the agricultural operations during periods of high wind speed, low crop-moisture content, and low air humidity is recommended for reducing the dust exposure of workers. The results will provide guidance and technical support for reducing the dust emissions of mechanized harvesting operations, improving air quality, and reducing the health hazards to operators.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	<p>Se analizó el polvo al que se exponían los trabajadores durante la recolección de maní realizada mediante mecanización. Se realizaron mediciones y se llevaron a cabo otras técnicas. El polvo y las concentraciones de sílice superaron los valores límite de exposición en el trabajo. Se recomendó disminuir esta labor en períodos en los que la velocidad del viento fuera elevada y la humedad del cultivo y del aire baja.</p>
TEMÁTICA	Exposición; Polvo

11. INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH

TÍTULO DEL TRABAJO	
The Increase in Frequency of Protective Behavior against Pesticide Poisoning in Narail, Bangladesh through Use of an Easy Paper Checklist; an Interventional Study <i>(El aumento de la frecuencia de las conductas de protección contra el envenenamiento por plaguicidas en Narail, Bangladesh, mediante el uso de una lista de verificación sencilla en papel; un estudio intervencionista)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Septiembre 2021, Volumen 18, Número 17, Número de artículo 9349
AUTORES:	Kobashi, Yurie; Haque, Syed Emdadul; Nishikawa, Yoshitaka; Morita, Tomohiro; Nagami, Hiroshi; Sakisaka, Kayako; Mubassara, Sanzida; Tsubokura, Masaharu
DOI:	10.3390/ijerph18179349
RESUMEN:	Protecting the health of farmworkers is a crucial issue. Previous studies report that safety training and educational interventions might increase farmworkers' protective behaviors. The present study aimed to investigate the effectiveness of distributing a checklist as an interventional measure for pesticide protection in rural Asia, where pesticide poisoning is a major problem. This study was a community-based interventional study, using the distribution of a checklist with pesticide protective habits in Narail district, Bangladesh, with a total of 100 eligible males. Two questionnaire surveys were conducted before distributing the checklist and 25 days after. Change between the baseline and follow-up surveys was measured by frequency scores of protective behavior. The average pesticide-protective behavioral score increased from 4.58 in the baseline survey to 8.11 in the follow-up. Additionally, the checklist was more effective in the group with higher education, the younger group, and the group with lower pesticide-protective behavioral scores in the baseline survey. The paper checklist on protective behaviors against pesticide poisoning was effective because of the increase in the frequency of such positive behavior among farmworkers. Thus, intervention measures should be implemented to increase the knowledge and awareness regarding pesticide protection habits to protect the health of farmworkers.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se investigó el uso de una lista de verificación sobre comportamientos para protegerse de la intoxicación por plaguicidas en trabajadores agrícolas en Narail. Ésta se pasó a 100 participantes hombres y además se realizaron encuestas. Se consideró una buena medida de intervención debido al incremento de comportamientos correctos ante este problema.
TEMÁTICA	Plaguicidas; Intoxicación; Hombres

TÍTULO DEL TRABAJO	
High Prevalence of Overweight and Its Association with Mid-Upper Arm Circumference among Female and Male Farmers in Tanzania and Mozambique (Alta prevalencia de sobrepeso y su asociación con la circunferencia del brazo medio superior entre mujeres y hombres agricultores en Tanzania y Mozambique)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Septiembre 2021, Volumen 18, Número 17, Número de artículo 9128
AUTORES:	Eleraky, Laila; Issa, Ramula; Maciel, Sonia; Mbwana, Hadijah; Rybak, Constance; Frank, Jan; Stuetz, Wolfgang
DOI:	10.3390/ijerph18179128
RESUMEN:	The increasing prevalence of overweight/obesity may already have reached the farmers in Tanzania and Mozambique. Here, the measurement of the mid-upper-arm-circumference (MUAC) could become a simple and sensitive tool for early detection of at-risk groups of overweight as well as underweight. Body Mass Index (BMI) and MUAC of female and male farmers (n = 2106) from different regions of Tanzania and the Zambezia province, Mozambique, were analyzed by region, sex, age, and correlates. MUAC cut-offs, calculated via BMI cut-offs (<18.5, >= 25, and >= 30 kg/m(2)), and multiple linear regression (MLR), compared to those selected by highest Youden's index (YI) value, were assessed. The study showed an overall higher prevalence of overweight (19%) than underweight (10%) due to the high number of overweight female farmers (up to 35%) in southern Tanzania. BMI, which was mainly and positively predicted by MUAC, was higher in Tanzania and among female farmers, and decreased significantly from the age of >= 65 years. MUAC cut-offs of <24 cm and >= 30.5 cm, calculated by MLR, detected 55% of farmers being underweight and 74% being overweight, with a specificity of 96%; the higher cut-off <25 cm and lower cut-off >= 29 cm, each selected according to YI, consequently detected more underweight (80%) and overweight farmers (91%), but on the basis of a lower specificity (87-88%). Overweight was evident among female farmers in East Africa. MUAC cut-offs, whether defined via linear regression or Youden's Index, could prove to be easy-to-use tools for large-scale screenings of both underweight and overweight.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analizó el índice de masa corporal y la circunferencia del brazo medio superior a 2016 hombres y mujeres dedicados al sector agrícola en Tanzania y Mozambique, para determinar el riesgo de obesidad o de poco peso. Se concluyó que el sobrepeso era frecuente entre las agricultoras. Además, se determinó que esta era una forma sencilla de detectar sobrepeso y bajo peso en los trabajadores.
TEMÁTICA	Riesgos; Obesidad

TÍTULO DEL TRABAJO	
Long-Term Neurological and Psychological Distress Symptoms among Smallholder Farmers in Costa Rica with a History of Acute Pesticide Poisoning <i>(Síntomas de angustia neurológica y psicológica a largo plazo entre los pequeños agricultores de Costa Rica con antecedentes de intoxicación aguda por plaguicidas)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Septiembre 2021, Volumen 18, Número 17, Número de artículo 9021
AUTORES:	Farnham, Andrea; Fuhrmann, Samuel; Staudacher, Philipp; Quiros-Lepiz, Marcela; Hyland, Carly; Winkler, Mirko S.; Mora, Ana M.
DOI:	10.3390/ijerph18179021
RESUMEN:	Studies suggest that acute pesticide poisonings (APP) may be linked with long-term neurological effects. To examine long-term neurological and psychological distress symptoms associated with having experienced an APP, we conducted a cross-sectional study of 300 conventional and organic smallholder farmers from Zarcero County, Costa Rica, May-August 2016. We collected self-reported data on sociodemographic characteristics, occupational history, pesticide exposure, APPs, neurological and psychological distress symptoms (using the Brief Symptom Inventory (BSI)). Adjusted logistic regression models were fit. A total of 14% of the farmers (98% male) reported experiencing at least one APP during their lifetime. Self-reported APP was associated with neurological symptoms during the 12 months prior to interview (e.g., fainting (Odds Ratio: 7.48, 95% Confidence Interval: 1.83, 30.74), shaking hands (3.50; 1.60, 7.60), numbness/tingling in hands or feet (3.23; 1.66, 6.32), insomnia (2.53; 1.34, 4.79), accelerated heartrate (2.42; 1.03, 5.47), dizziness (2.38; 1.19, 4.72), increased irritability/anger (2.37; 1.23, 4.55), low energy (2.33; 1.23, 4.46), and difficulty concentrating (2.01; 1.05, 3.85)). Farmers who reported an APP in the ten years prior to interview experienced increased odds of abnormal BSI scores for hostility (4.51; 1.16, 17.70) and paranoid ideation (3.76; 0.99, 18.18). Having experienced an APP may be associated with long-term neurological and psychological distress symptoms.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se llevó a cabo un estudio sobre los síntomas neurológicos y psicológicos que podían sufrir los pequeños agricultores tras un período largo de tiempo después de una intoxicación por plaguicidas importante. Se recopilaron datos de 300 participantes que realizaban agricultura convencional y ecológica en Zarcero (Costa Rica). Los resultados mostraron que un 14% de los trabajadores habían sufrido una intoxicación de este tipo y que podía estar asociada con síntomas neurológicos y psicológicos que aparecían después de un tiempo.
TEMÁTICA	Plaguicidas; Intoxicación; Pequeños agricultores

TÍTULO DEL TRABAJO	
Working Conditions and Urinalysis Dipstick Testing among Female Rice Farmers: A Preliminary Cross-Sectional Study (<i>Condiciones de trabajo y análisis de orina con tira reactiva entre mujeres productoras de arroz: un estudio transversal preliminar</i>)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Septiembre 2021, Volumen 18, Número 17, Número de artículo 8942
AUTORES:	Arphorn, Sara; Manothum, Aniruth; Santiwung, Kotchakorn; Pangunta, Kanograt; Hara, Kunio; Ishimaru, Tomohiro
DOI:	10.3390/ijerph18178942
RESUMEN:	This cross-sectional study aimed to assess working conditions and renal function among female rice farmers in Nan Province, Thailand. Purposive random sampling was used to select participants who met the inclusion criteria. Data were collected from 65 female rice farmers using in-depth interviews. A walk-through survey was performed to examine hazards in the rice farm and a dipstick test was used for urinalysis. The results demonstrated that all rice farming stages contained risks from physical, chemical, biological and ergonomic hazards and that no measures had been implemented to protect participants' health from these risks. The screening test results showed low urinary pH (5-6) in 54 women (83.0%), but high urinary specific gravity (1.030) in 25 women (38.5%). Participants' urine contained leukocytes in 15 women (23.1%), protein in 14 women (21.5%) and blood in 13 women (20%). This study results suggest that farming activities affect female rice farmers' health and safety. Urinalysis dipstick tests, which can be administered at the local public health promoting hospital, should be used to assess the occupational health status. The results will be useful for health surveillance and follow-up of the participants. These preliminary findings need to be confirmed in a larger study including non-farmers.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analizaron las condiciones laborales y la función renal de agricultoras de arroz en Nan (Tailandia). Participaron 65 mujeres. Se hicieron entrevistas, se identificaron los riesgos en el cultivo de arroz y se hicieron análisis de orina. Según los resultados, durante el cultivo de arroz existían riesgos físicos, químicos, biológicos y ergonómicos para las trabajadoras, pero no se habían tomado medidas. Se debe prestar atención a la salud de trabajadores de este ámbito.
TEMÁTICA	Agricultoras de arroz; Condiciones laborales; Función renal

TÍTULO DEL TRABAJO	
Coping with Adversity: Resilience Dynamics of Livestock Farmers in Two Agroecological Zones of Ghana <i>(Hacer frente a la adversidad: dinámica de resiliencia de los ganaderos en dos zonas agroecológicas de Ghana)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Septiembre 2021, Volumen 18, Número 17, Número de artículo 9008
AUTORES:	Nuvey, Francis Sena; Addo-Lartey, Adolphina; Nortey, Priscillia Awo; Addo, Kennedy Kwasi; Bonfoh, Bassirou
DOI:	10.3390/ijerph18179008
RESUMEN:	Despite the increasing occurrence of adverse events including droughts and conflicts, livestock farmers in Ghana continue to raise animals to support their livelihoods and the national economy. We assessed the resilience of cattle farmers (CF) to adverse events they faced using a cross-sectional survey of 287 CF in two agroecological zones in Ghana. Resilience to adversities was assessed using the Resilience Scale (RS-14). Resilience scores and categories were computed and factors that explained variations in resilience categories assessed. The farmers kept, on average, 31 cattle per household, with a majority (91%) also growing crops. Key adverse events confronting them in both districts were animal disease outbreaks, pasture shortages, and theft, with 85% (240/287) losing, on average, seven cattle (15% of the herd size) over a one-year period. The mean resilience score was 71 (SD = 8) out of 98; 52% were highly resilient. Resilience was higher in the southern district (72 versus 70), albeit not statistically significant ($p = 0.06$). The resilience significantly improved with age, each unit increase in cattle in the herd, and having experience raising livestock ($p < 0.001$). The CF have relatively high resilience to adverse events affecting their productivity. The findings provide relevant information for implementing mitigation measures to improve production by reducing animal mortalities through high-quality veterinary services.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analiza la resiliencia de los ganaderos en Ghana ante la aparición de contratiempos en su trabajo. Participaron 287 trabajadores de dos zonas agroecológicas. Se empleó la escala de resiliencia (RS-14). Los principales contratiempos a los que tuvieron que hacer frente fueron enfermedades de animales, escasez de pastos y robos de animales. El 52% de los trabajadores mostraron tener gran resiliencia. Se deben llevar a cabo medidas para mejorar el trabajo, como reducir la mortalidad del ganado mediante servicios veterinarios de buena calidad.
TEMÁTICA	Resiliencia; Ganaderos

TÍTULO DEL TRABAJO	
Impact of Pesticide Exposure among Rural and Urban Female Population. An Overview (<i>Impacto de la exposición a plaguicidas entre la población femenina rural y urbana. Una descripción general</i>)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Septiembre 2021, Volumen 18, Número 18, Número de artículo 9907
AUTORES:	Dahiri, Bouchra; Martin-Reina, Jose; Carbonero-Aguilar, Pilar; Raul Aguilera-Velazquez, Jose; Bautista, Juan; Moreno, Isabel
DOI:	10.3390/ijerph18189907
RESUMEN:	Pesticides are substances that have become widely used in agriculture and the human exposure to these substances may cause adverse health outcomes. Non-occupational exposure to them can come from many sources, such as food or water. For occupational exposure, many studies have been conducted in men, as they have been mostly in charge of work related to these substances. Nonetheless, the information available concerning the exposure in women is very scarce. In addition, an important differentiation between rural and urban areas has been established, rural areas being known as the most exposed ones due to plantation fields. However, the application of higher concentrations of herbicides in small urban areas is taking a lot of importance currently as well. Regardless of gender, the conditions of exposure, and the environment, the exposure to these pesticides can have different effects on health from early life stages, resulting in different outcomes ranging from neurodevelopmental effects in newborns to different types of cancers. In this review, we discussed the toxicity of the most commonly used pesticides and the main impact on the health of the general population, focusing mainly on the effect in women from both rural and urban areas, and the different stages of development, from pregnancy or lactation to the outcomes of these exposures for their children.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se lleva a cabo una revisión sobre los efectos adversos de los plaguicidas en la salud de la población. Este trabajo se centra, principalmente, en mujeres, de zonas rurales y urbanas. Se tienen en cuenta diversas etapas, entre ellas el embarazo y lactancia. También se consideran las consecuencias para sus hijos debidas a la exposición a estos productos.
TEMÁTICA	Plaguicidas; Intoxicación; Mujeres

TÍTULO DEL TRABAJO	
Improving Well-Being of Farmers Using Ecological Awareness around Protected Areas: Evidence from Qinling Region, China <i>(Mejorar el bienestar de los agricultores mediante la conciencia ecológica en torno a las áreas protegidas: evidencia de la región de Qinling, China)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Septiembre 2021, Volumen 18, Número 18, Número de artículo 9792
AUTORES:	Li Ma; Qin, Yueting; Zhang, Han; Zheng, Jie; Hou, Yilei; Wen, Yali
DOI:	10.3390/ijerph18189792
RESUMEN:	Sustainability of ecosystems is crucial for improving human well-being and sustainably developing human society. In recent years, global attention towards ecosystems and human well-being has been increasing. Exploring and understanding the relationship between ecosystems and human well-being, and establishing the well-being of residents while protecting the ecosystem have become urgent problems. Based on 618 valid samples collected from communities surrounding seven nature reserves in the Qinling Mountains region of China, this study analyzed the impact of ecosystem services on farmers' well-being from the perspective of their subjective perception of ecosystem services by using multiple linear regression and seemingly unrelated regression methods. The main conclusions are as follows: supply of vegetation and clean water improves farmers' well-being, improvement of air quality increases farmers' life satisfaction, and the sense of belonging and tourism value brought by the ecosystem are important factors for farmers' physical and mental pleasure and economic benefits. Therefore, the following countermeasures and suggestions are proposed: focusing on establishing the ecological well-being of farmers, improve implementation of the services and benefits provided by the ecosystem to farmers, increase publicity and education to improve the protection consciousness of farmers, and improve community participation mechanisms while mobilizing enthusiasm for protection. This article starts from the perspective of farmers' perception, attempting to explore whether changes in ecosystem service functions will affect farmers' well-being, so as to provide new opinions and suggestions for improving farmers' well-being.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se evaluó la relación entre el bienestar de los trabajadores agrícolas y los ecosistemas (desde la percepción de los agricultores). Se emplearon 618 muestras recogidas alrededor de siete reservas naturales en las montañas de Qinling (China). Se concluyó que la vegetación, agua limpia, calidad del aire, pertenencia y valor turístico del ecosistema son factores que mejoran el bienestar de estos trabajadores. Además, en este estudio se proponen medidas de mejora.
TEMÁTICA	Bienestar trabajadores; Ecosistema

TÍTULO DEL TRABAJO	
Pesticide Use, Perceived Health Risks and Management in Ethiopia and in Hungary: A Comparative Analysis (Uso de plaguicidas, riesgos para la salud percibidos y gestión en Etiopía y Hungría: un análisis comparativo)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Octubre 2021, Volumen 18, Número 19, Número de artículo 10431
AUTORES:	Tessema, Roba Argaw; Nagy, Karoly; Adam, Balazs
DOI:	10.3390/ijerph181910431
RESUMEN:	Pesticides play a very important role for ensuring food security and economic growth but their use can cause harmful effects to human health and to the environment. The study aimed to investigate the level of knowledge, health risk perceptions, and experiences on the practice of pesticide use and management among extension officers in Ethiopia and plant doctors in Hungary. A questionnaire survey among 326 officers was conducted in the two study areas and data were analyzed by ordinal logistic regression. According to the findings, Hungarian officers had much better knowledge of pesticide products (92%), and less frequently experienced pesticide poisoning among applicators (7%) than the Ethiopians (66% and 41%, respectively). Hungarian officers perceived less health risk of pesticide use (AOR = 0.46, 95% CI: 0.27-0.80), were ten times more likely to deem the pesticide management system effective (AOR = 10.23, 95% CI: 5.68-18.46) and were nine times more likely to report that applicators used personal protective equipment (AOR = 8.95, 95% CI: 4.94-16.28). A significant proportion of officers from both countries reported inappropriate methods of pesticide residue disposal. These observations point out that the situation of pesticide use and knowledge and management of pesticide products is definitely better in Hungary; nevertheless, the issue continues to need more attention in both settings.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analizó el conocimiento, percepción de los riesgos y experiencia en la aplicación de plaguicidas en oficiales de extensión de Etiopía y doctores de plantas de Hungría. Participaron 326 trabajadores y se realizó un cuestionario mediante encuesta. Los resultados mostraron un mayor conocimiento sobre plaguicidas, menor frecuencia de intoxicación y percepción de riesgos más baja en los trabajadores de Hungría. Gran parte de los trabajadores de los dos países expuso la utilización de métodos incorrectos para la eliminación de residuos de estos productos.
TEMÁTICA	Plaguicidas; Conocimientos

TÍTULO DEL TRABAJO	
Association of Pesticides and Kidney Function among Adults in the US Population 2001-2010 (Asociación de plaguicidas y función renal entre adultos en la población de EE. UU. 2001-2010)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Octubre 2021, Volumen 18, Número 19, Número de artículo 10249
AUTORES:	Wan, En-Tzu; Darssan, Darsy; Karatela, Shamshad; Reid, Simon A.; Osborne, Nicholas John
DOI:	10.3390/ijerph181910249
RESUMEN:	Chronic kidney disease of unknown cause is prevalent in a range of communities; however, its etiology remains unclear. We examined the association between pesticide exposures and the risk of kidney function loss using four waves of the National Health and Nutrition Examination Survey (NHANES) to identify a pathological pathway. We pooled data from four cross-sectional waves of NHANES, with 41,847 participants in total. Exposure to malathion increased the risk of low kidney function (aOR = 1.26, 95% CI = 1.01-1.56) in the adjusted model. Increased risk of low kidney function was not found among those exposed to 2,4-D (aOR = 0.88, 95% CI = 0.72-1.09), 3,5,6-trichloropyridinol (aOR = 0.96, 95% CI = 0.83-1.12), and 3-PBA (aOR = 1.03, 95% CI = 0.94-1.13). Our findings provide evidence of altered kidney function in people exposed to malathion, highlighting the potential of organophosphate pesticides' role in renal injury.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se investigó la relación entre los problemas en la función renal y la exposición a plaguicidas, mediante el uso de una encuesta. Participaron 41847 personas. Se concluyó que la función renal se veía afectada por plaguicidas como el malatión y por organofosforados.
TEMÁTICA	Plaguicidas; Función renal

TÍTULO DEL TRABAJO	
Evaluation of an Online Training for Supervisors of Young Agricultural Workers (Evaluación de una formación online para supervisores de jóvenes trabajadores agrícolas)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Octubre 2021, Volumen 18, Número 19, Número de artículo 10395
AUTORES:	Rohlman, Diane S.; TePoel, Megan; Campo, Shelly
DOI:	10.3390/ijerph181910395
RESUMEN:	Adolescents and young adults (< 25 years) working in agriculture are at greater risk of injury than youth working in other industries. Supervisors play an important role in protecting these young workers who lack workplace experience and whose bodies and brains are still developing. A theoretically based approach was used to develop an online training for supervisors of young agricultural workers. The training addresses an expanded view of occupational safety that not only addresses injury prevention, but also focuses on health promotion and worker well-being using a Total Worker Health approach. A pre-post/post study design was used to evaluate the training. Questionnaires included demographics, workplace characteristics, knowledge, beliefs about protecting young workers, and supervisors' communication behaviors. One-hundred-eighty-two participants completed all parts of the efficacy trial. A post-test administered immediately after completing the training, indicated that supervisors had greater understanding of the risks to young workers and at 3-month follow-up were more likely to engage in communication behaviors to protect the safety and health of young workers. Positive changes in when, how, and under what circumstances supervisors talk about safety and health occurred. Establishing patterns of protective behaviors in the workplace can have lifelong impact, particularly among young workers.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se realizó una formación online destinada a supervisores de agricultores jóvenes. El tema principal que se trató fue la seguridad en el trabajo centrada en la prevención de daños, promoción de salud y bienestar de los agricultores. Se evaluó la formación recibida con cuestionarios principalmente y participaron 182 trabajadores. Se concluyó que la formación tuvo beneficios para los supervisores con respecto a su trabajo en este ámbito.
TEMÁTICA	Seguridad en el trabajo; Formación online

TÍTULO DEL TRABAJO	
Farmers' Knowledge, Attitudes, and Perceptions Regarding Carcinogenic Pesticides in Fez Meknes Region (Morocco) <i>[Conocimientos, actitudes y percepciones de los agricultores con respecto a los plaguicidas cancerígenos en la región de Fez Meknes (Marruecos)]</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Octubre 2021, Volumen 18, Número 20, Número de artículo 10879
AUTORES:	Ben Khadda, Zineb; Fagroud, Mustapha; El Karmoudi, Yahya; Ezrari, Said; Berni, Imane; De Broe, Marc; Behl, Tapan; Bungau, Simona Gabriela; Sqalli Houssaini, Tarik
DOI:	10.3390/ijerph182010879
RESUMEN:	<p>Pesticides play an important role in the improvement of agricultural production, but their use may result in adverse effects on the environment, consumers, and farmers' health. As there are limited data focusing on the factors influencing safety behavior toward pesticide use in Morocco, we conducted a cross-sectional survey in 15 rural communities of Morocco's Fes Meknes region to assess the attitudes, knowledge, and practices regarding pesticide use. A structured questionnaire was completed, containing the data of the interviewed farmers, their behavior towards safety measures, the type of active ingredient used, as well as the perception of risks to their own health following exposure to pesticides by the existence of chronic, self-perceived symptoms. Non-probability (empirical) sampling with the quota method was carried out, which consists of constructing the sample. Results showed that most respondents have not been trained in the application of pesticides, with almost half of the farmers using a category of pesticides which are classified by the International Agency for Research on Cancer as probable human carcinogenic (i.e., Glyphosate, Malathion). In terms of pesticide storage, 40% of farmers said that they did not store pesticides in a separate room after purchasing or using them. The empty containers were buried or burnt by half of the responders, while the remainder were thrown at the edge of fields or in public dumps. Although the participants were aware of the negative effects on their own health and on the environment caused by the application of pesticides in use, the protection measures by individual equipment were insufficient. A canonical analysis indicates that these behaviors were influenced by the farming experience, the benefit of the agricultural council services, the follow-up of training, and the education level. These variables are important factors in explaining and understanding the dangers to both the environment and health caused by pesticides. The most recorded likely consequences of pesticide exposure were visual impairment (46%), followed by dizziness (44.3%), headache (39.4%), and excessive sweating (34.4%), and 30.2% of participants identified consequent respiratory problems. Extension services targeted at safety and protection measures should be developed and accompanied by educational programs to put farmers' perceptions into practice and encourage them to adopt healthy and environmentally friendly behaviors.</p>

RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analizó el conocimiento, actitud y prácticas de agricultores sobre el uso de plaguicidas en 15 zonas rurales en una región de Marruecos. Se empleó un cuestionario y un método para el muestreo. Según los resultados, la mayoría de los participantes del estudio no habían recibido formación sobre plaguicidas, cerca de la mitad utilizaban plaguicidas clasificados como cancerígenos, el 40% no almacenaban estos productos en un lugar correcto y no se gestionaban bien los residuos. Además, no se empleaban equipos de protección individual. Se detectaron problemas para la salud como mareos, problemas de visión, dolor de cabeza, sudoración excesiva y enfermedades respiratorias. Se concluyó la necesidad de adoptar medidas.
TEMÁTICA	Plaguicidas; Conocimientos

TÍTULO DEL TRABAJO	
Association between Haematological Parameters and Exposure to a Mixture of Organophosphate and Neonicotinoid Insecticides among Male Farmworkers in Northern Thailand <i>(Asociación entre parámetros hematológicos y exposición a una mezcla de insecticidas organofosforados y neonicotinoides entre trabajadores agrícolas hombres en el norte de Tailandia)</i>	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Octubre 2021, Volumen 18, Número 20, Número de artículo 10849
AUTORES:	Suwannarin, Neeranuch; Prapamontol, Tippawan; Isobe, Tomohiko; Nishihama, Yukiko; Mangklabruks, Ampica; Pantasri, Tawiwat; Chantara, Somporn; Naksen, Warangkana; Nakayama, Shoji F.
DOI:	10.3390/ijerph182010849
RESUMEN:	Exposure to insecticides may result in various health problems. This study investigated the association between haematological parameters and exposure to a mixture of organophosphate (OP) and neonicotinoid (NEO) insecticides among male farmworkers in Fang district, Chiang Mai province, northern Thailand. Concentrations of urinary dialkylphosphates, non-specific metabolites of OPs, and NEOs and their metabolites and haematological parameters were measured in 143 male farmworkers. The Bayesian kernel machine regression model was employed to evaluate the associations. Exposure to a mixture of insecticides was significantly associated with the mean corpuscular haemoglobin concentration (MCHC) when the concentrations of all the compounds and their metabolites were at the 60th percentile or higher compared with the 50th percentile. Furthermore, exposure to clothianidin (CLO) showed a decreasing association with MCHC when all the other insecticides were at their mean concentrations. CLO was the most likely compound to reduce MCHC, and this was confirmed by sensitivity analysis. These findings suggest that exposure to NEO insecticides, especially CLO, affects the haematological status relating to haemoglobin parameters.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se analizó en agricultores la relación entre parámetros hematológicos y exposición a mezcla de insecticidas organofosforados y neonicotinoides en el norte de Tailandia. Se realizaron mediciones en 143 trabajadores hombres. Se determinó que los insecticidas neonicotinoides afectaban a los parámetros hematológicos.
TEMÁTICA	Exposición; Insecticidas

TÍTULO DEL TRABAJO	
Autism Spectrum Disorder and Prenatal or Early Life Exposure to Pesticides: A Short Review (<i>Trastorno del espectro autista y exposición prenatal o temprana a plaguicidas: una breve reseña</i>)	
PUBLICADO EN:	International Journal of Environmental Research and Public Health, Octubre 2021, Volumen 18, Número 20, Número de artículo 10991
AUTORES:	Miani, Alessandro; Imbriani, Giovanni; De Filippis, Giovanni; De Giorgi, Donato; Peccarisi, Luigi; Colangelo, Manuela; Pulimeno, Manuela; Castellone, Maria Domenica; Nicolardi, Giuseppe; Logroscino, Giancarlo; Piscitelli, Prisco
DOI:	10.3390/ijerph182010991
RESUMEN:	Background: Autism spectrum disorder (ASD) diagnoses have rapidly increased globally. Both environmental and genetic factors appear to contribute to the development of ASD. Several studies have shown a potential association between prenatal or postnatal pesticide exposure and the risk of developing ASD. Methods: We reviewed the available literature concerning the relationship between early life exposure to pesticides used in agriculture, such as organochlorines, organophosphates and pyrethroids, and ASD onset in childhood. We searched on Medline and Scopus for cohort or case-control studies published in English from 1977 to 2020. Results: A total of seven articles were selected for the review. We found a remarkable association between the maternal exposure to pyrethroid, as well as the exposure to organophosphate during pregnancy or in the first years of childhood, and the risk of ASD onset. This association was found to be less evident with organochlorine pesticides. Pregnancy seems to be the time when pesticide exposure appears to have the greatest impact on the onset of ASD in children. Conclusions: Among the different environmental pollutants, pesticides should be considered as emerging risk factors for ASD. The potential association identified between the exposure to pesticides and ASD needs to be implemented and confirmed by further epidemiological studies based on individual assessment both in outdoor and indoor conditions, including multiple confounding factors, and using statistical models that take into account single and multiple pesticide residues.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se realizó una revisión para conocer si existía una asociación entre el trastorno de espectro autista y la exposición temprana a plaguicidas. Se utilizó Medline y Scopus y se analizó el período de tiempo entre 1977 y 2020. Se eligieron siete artículos finalmente. Se encontró que este trastorno si estaba relacionado con la exposición, siendo durante el embarazo el momento más perjudicial para el desarrollo posterior de estos trastornos en niños.
TEMÁTICA	Plaguicidas; Trastorno de espectro autista

12. GACETA SANITARIA

TÍTULO DEL TRABAJO	
Exposición a plaguicidas en Chile y salud poblacional: urgencia para la toma de decisiones	
PUBLICADO EN:	Gaceta Sanitaria, Septiembre-Octubre 2021, Volumen 35, Número 5, pp. 480-487
AUTORES:	Zuniga-Venegas, Liliana; Saracini, Chiara; Pancetti, Flavia; Muñoz-Quezada, María Teresa; Lucero, Boris; Foerster, Claudia; Cortes, Sandra
DOI:	10.1016/j.gaceta.2020.04.020
RESUMEN:	In the last 25 years, Chile has had an expanding role as an agro-export country in the global economy, with efficient rates of productivity in the region, based on the technological development of agriculture, with of large monocultures whose productivity depends on the intensive application of agrochemicals. This form of agriculture has also lacked efficient regulations and surveillance, so it is difficult to estimate the real magnitude of the exposed population and its effects on health in the short or long term. This systematic review compiles the epidemiological evidence generated from studies conducted in several regions of Chile regarding pesticide exposure and health effects. Of the total number of articles, 50% included agricultural workers, 25% children, and 25% women of childbearing age, with the greatest effects being the neurotoxic (54%), genotoxic (31%) and reproductive (15%). The evidence collected shows that in Chile the levels of exposure to pesticides in the general and occupational population are higher than international studies levels. It is urgent to protect the health of both the occupational and general population and especially children through a stricter control of the sale and use of pesticides, with comprehensive surveillance systems in environmental health and educational actions in the social and cultural context of rural communities. It is a priority to strengthen research with national relevance on health effects, and strictly restrict the use of pesticides already prohibited in developed countries due to their high level of risk to human and environmental health.
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Se realizó una revisión sobre la exposición a plaguicidas y sus consecuencias para la población en Chile. El 50% de las publicaciones revisadas se centraban en agricultores, el 25% en niños y el 25% en mujeres. Además, se recopilaron los efectos más frecuentes. Se concluyó, que en Chile la exposición en la población y trabajadores es mayor que en otros lugares. Se deben llevar a cabo medidas para reducir este riesgo.
TEMÁTICA	Exposición; Plaguicidas

13. RISK MANAGEMENT AND HEALTHCARE POLICY

TÍTULO DEL TRABAJO	
Occupational Health Problems among Seasonal and Migrant Farmworkers in Ethiopia: A Cross-Sectional Study <i>(Problemas de salud en el trabajo entre trabajadores agrícolas temporales y migrantes en Etiopía: un estudio transversal)</i>	
PUBLICADO EN:	Risk Management and Healthcare Policy, Octubre 2021, Volumen 14, pp. 4447-4456
AUTORES:	Gelaye, Kasahun Alemu; Debalke, Getu; Ayele, Tadesse Awoke; Wolde, Haileab Fekadu; Sisay, Malede Mequanent; Teshome, Destaw Fetene; Akalu, Temesgen Yihunie; Wami, Sintayehu Daba
DOI:	10.2147/RMHP.S323503
RESUMEN:	<p>Background: Migrant and seasonal farmworkers are at increased risk for occupational fatalities and injuries. Although such employment-related geographical mobility is receiving increasing attention, there is limited evidence about occupational health problems among seasonal farmworkers. Therefore, this study aims to investigate occupational health problems among seasonal and migrant farmworkers in Ethiopia.</p> <p>Methods: A cross-sectional study design was employed from October to December 2019 among seasonal and migrant farmworkers. The study was carried out in two sites of Amhara regional state, northwest Ethiopia. A cluster sampling technique was used to recruit 990 study participants. Bivariable and multivariable binary logistic regression analyses were performed using SPSS version 20 to identify factors associated with injuries. The significance level was obtained at 95% CI and p-value ≤ 0.05.</p> <p>Results: In this study, the period prevalence of work-related injury among seasonal and migrant farmworkers was 32.5% (95% CI: 29.7, 35.9). Being unemployed before migration (AOR = 2.22, 95% CI: 1.26, 3.91), working for >8 h/day (AOR = 1.62, 95% CI: 1.16, 2.27), stress (AOR = 1.38, 95% CI: 1.02, 1.88) and thermal discomfort (AOR = 1.48, 95% CI: 1.09, 1.98) were the significant risk factors for work-related injury. In addition, nearly two-third (60.9%) of the study participants have shown three or more heat-related illness symptoms. Moreover, the prevalence of work-related stress among seasonal and migrant farmworkers was 67.6% (95% CI: 64.6, 70.7).</p> <p>Conclusion: Occupational health problems among seasonal and migrant farmworkers in northwest Ethiopia remain a major public health problem. Hence, implementing tailored preventive measures like training on health and safety, and hazard control measures would be supremely important to minimize the risk.</p>
RESUMEN DE CONCLUSIONES EN ESPAÑOL:	Este estudio se centró en la salud en el trabajo de agricultores temporales y migrantes en Etiopía. Participaron 990 trabajadores y se emplearon herramientas para determinar los factores de riesgo de lesiones. Los resultados mostraron que algunos de estos factores fueron jornadas diarias de más de 8 horas, estrés, temperatura, etc. Se deben

	adoptar medidas preventivas para estos trabajadores para reducir el riesgo al que se exponen.
TEMÁTICA	Seguridad y salud en el trabajo