Journal of Agriculture, Food Systems, and Community Development
ISSN: 2152-0801 online
https://foodsystemsjournal.org

COMMENTARY

Implementing Spanish-language pesticide labeling: The role of internet access for migrant and seasonal farmworkers

Catherine E. LePrevost [a] *
NC State University

Joseph G. L. Lee [b]
Wake Forest University School of Medicine

Modjulie A. Moore [c]
North Carolina Department of Health and Human Services
and UNC School of Medicine

Submitted January 31, 2025 / Published online April 25, 2025

Citation: LePrevost, C. E., Lee, J. G. L., & Moore, M. A. (2025). Implementing Spanish-language pesticide labeling: The role of internet access for migrant and seasonal farmworkers [Commentary]. *Journal of Agriculture, Food Systems, and Community Development*, *14*(2), 301–304. https://doi.org/10.5304/jafscd.2025.142.025

Mitigating pesticide exposure among migrant and seasonal farmworkers (both referred to as "farmworkers" herein) is important for agricultural safety and health. Among farmworker patients served by the North Carolina (NC) Farmworker Health Program in 2021 (N = 11,518), 99% identified as Latine, 98% reported being nonfluent in English, 94% reported incomes below the federal poverty level, and 92% indicated they were uninsured. Prior community-led work in NC with farmworkers, advocates, and others working closely with farmworkers has highlighted demands for expanded employment benefits and improved living and working conditions, including pesticide

[a] * *Corresponding author:* Catherine E. LePrevost, Extension Professor and Agromedicine Extension Specialist, Department of Applied Ecology, College of Agriculture and Life Sciences, NC State University; Campus Box 7617; NC State University, Raleigh, NC 27695 USA; celeprev@ncsu.edu; https://orcid.org/0000-0001-7360-0021

[b] Joseph G. L. Lee, Professor, Department of Implementation Science, Division of Public Health Sciences, and Scientific Member, Cancer Prevention and Control Program, Atrium Health Wake Forest Baptist Comprehensive Cancer Center, Wake Forest University School of Medicine; joglee@wakehealth.edu; https://orcid.org/0000-0001-9698-649X

[c] Modjulie A. Moore, Medical Director, North Carolina Farmworker Health Program, Office of Rural Health, North Carolina Department of Health and Human Services; and Assistant Professor, Department of Family Medicine, UNC School of Medicine.

Funding Disclosure
This project was made possible in part by the Institute of Museum and Library Services (LG-252351-OLS-22). The views, findings, conclusions, or recommendations expressed in this publication do not necessarily represent those of the Institute of Museum and Library Services.

protections, as well as expanded access to high-quality health care, improved visibility of farm work, and policy change for a better future (Cofie et al., 2023). Efforts to address pesticide exposure are critically important.

Worker protections related to pesticides are regulated by the U.S. Environmental Protection Agency (U.S. EPA). The Pesticide Registration Improvement Act (PRIA) was reauthorized in December 2022 as "PRIA 5," and it mandated new provisions for the protection of farmworkers, including requirements for Spanish-language pesticide labeling and farmworker training and education. These new provisions were informed by input from farmworker advocacy groups and environmental nongovernmental organizations. As information is an independent determinant of health that operates both directly and indirectly through other social determinants of health (Graham et al., 2024), requiring Spanish-language labels has the potential to prevent pesticide exposure and thus to promote farmworker health. The U.S. EPA has been working through the implementation of these new requirements (U.S. EPA, 2024), although we recognize that a change in administration may change the priorities of the EPA's implementation of PRIA 5. The intention of PRIA 5 implementation, however, remains important regardless of political changes. In this commentary, we provide considerations for implementation based on research and experience from NC.

PRIA 5 requires Spanish-language translation of health and safety sections of pesticide product labels (U.S. EPA, 2023). Translations must be available on the pesticide container or via a hyperlink or QR code, and farmworkers must have access to bilingual pesticide labeling starting in December 2025 (U.S. EPA, 2023). Previously, pesticide use instructions, warnings, and health information on containers had no specific requirements for languages beyond English. Spanish-language pesticide label information provided on the container or online should thus result in better access to important health and safety information.

However, Spanish-language label information will not be accessible to all farmworkers if only available in digital formats. A recent survey of NC farmworkers used time-venue sampling in partnership with eight health service sites that were simultaneously conducting outreach to farmworker housing (Lee et al., 2024). Collected across the 2023 growing season, the survey's 1,034 participants reported multiple barriers to internet access. Specifically, nearly one-quarter of participants did not have consistent, reliable internet access. Common reasons for inconsistent internet were weak cellular signal, too many people using an access point, and running out of data on cellular data plans. Importantly, the vast majority of participants used smart phones and cellular networks for their internet access.

In results from the NC survey, most participants paid for their own internet, with a small percentage reporting that internet was paid for by their employer (Lee et al., 2024). The average cost of internet to workers was just under US$45 a month. Currently, federal regulation places the onus on the employer to provide access to pesticide information through the Worker Protection Standard. These survey findings suggest, however, that the burden of securing internet access, which would be necessary to access digital pesticide labels, thus falls upon the farmworker. Additionally, stories from the field highlight the complexities associated with employer-provided internet access in employer-provided housing, including instances in which employers have cut off internet access as punishment for what was considered improper use of the internet.

Interviews with farmworkers and community health workers, who facilitate farmworkers' access to healthcare and social services, elucidate the problems associated with relying on cellular data to access critical information (Harwell et al., 2022; LePrevost et al., 2024). As shown in Box 1, from a research project by LePrevost et al. (2024), community health workers have reported losing contact with farmworkers who run out of cellular data. During these time periods of disconnection, farmworkers would not have the ability to access critical health and safety information, including the Spanish-language pesticide labels if only available digitally.

There are other considerations for regulators regarding online access to pesticide label information beyond connectivity to the internet. Anecdotal

Box 1. Community Health Worker Comments about Internet Access

"The first few days we were able to talk to [farmworkers in a housing unit] daily, and then we stopped hearing from some of them. And so then it was 'What's happening?,' and when we would go out there to do medication drop-offs or give them more food or something, they would tell us, 'Oh, well, my data plan ended,' or, 'I can't go to the store, so I can't add more minutes to my phone, and so there's no way for me to use my phone.'" (Community health worker, ID:2) (LePrevost et al., 2024, p. 4)

reports suggest that some farms restrict workers' bringing cell phones into the field as a safety measure (e.g., to reduce distracted driving while operating a tractor), but these restrictions may have unintended and deleterious consequences for access to digital pesticide information. Additionally, there is a need to consider digital literacy skills among farmworkers and optimization of the display of pesticide information for small screens and potential offline access after downloading. To maximize the benefits of digital pesticide information, it is crucial to follow best practices that make shared information both scientifically accurate as well as linguistically and culturally appropriate to the intended audience (Griffith et al., 2023).

In conclusion, increasing the accessibility of Spanish-language pesticide labeling is a critically important regulatory intervention for protecting health and encouraging safe practices. Availability of information by hyperlink or QR code will increase access compared to the status quo, but regulators must also recognize that use of these features will require internet access that may not be available to all farmworkers. Indeed, in NC, nearly one in four farmworkers might not have the consistent internet access needed to utilize a hyperlink or QR code. Further research is therefore needed to assess user accessibility of Spanish-language labeling in the locations where pesticide containers and labels are stored and used. Farmworkers with limited data plans should not have to choose between video calling their families or talking with their medical provider and accessing safety information at work.

References

Cofie, L. E., LePrevost, C. E., Harwell, E. L., Bustos, Y. Y., Welborn, J., Firnhaber, G. C., & Lee, J. G. L. (2023). "Valorar el trabajo de farmworkers": A thematic analysis of input from farmworkers, advocates, and students in a community documentary project about the future of farm work. *Public Health Nursing*, *41*(2), 193–197. https://doi.org/10.1111/phn.13263

Graham, G., Goren, N., Sounderajah, V., & DeSalvo, K. (2024). Information is a determinant of health. *Nature Medicine*, *30*, 927–928. https://doi.org/10.1038/s41591-023-02792-9

Griffith, D. M., Efird, C. R., Baskin, M. L., Webb Hooper, M., Davis, R. E., & Resnicow, K. (2023). Cultural sensitivity and cultural tailoring: Lessons learned and refinements after two decades of incorporating culture in health communication research. *Annual Review of Public Health*, *45*, 195–212. https://doi.org/10.1146/annurev-publhealth-060722-031158

Harwell, E. L., LePrevost, C. E., Cofie, L. E., & Lee, J. G. L. (2022). Community health workers' role in addressing farmworker health disparities. *Journal of Agromedicine*, *27*, 391–401. https://doi.org/10.1080/1059924X.2022.2040069

Lambar, E. F., & Thomas, G. (2019). The health and well-being of North Carolina's farmworkers: The importance of inclusion, accessible services and personal connection. *North Carolina Medical Journal*, *80*(2), 107–112. https://doi.org/10.18043/ncm.80.2.107

Lee, J. G. L., Roby, M., Cofie, L. E., LePrevost, C. E., Harwell, E. L., Reed, E. C., Nieuwsma, J., Bloss, J. E., Anderson, G. C., Santillán-Deras, J. R., Moore, M. A., Ketterman, E., & Russell, R. G. (2024). Internet devices and internet access among migrant and seasonal farmworkers, North Carolina, 2023. *Public Health Reports*. Advance online publication. https://doi.org/10.1177/00333549241295632

LePrevost, C. E., Cofie, L. E., Nieuwsma, J., Harwell, E. L., Rivera, N. D., Acevedo, P. A., & Lee, J. G. L. (2024). Community health worker outreach to farmworkers in rural North Carolina: Learning from adaptations to the SARS-CoV-2 pandemic. *Health Expectations*, *27*(2), Article e14047. https://doi.org/10.1111/hex.14047

U.S. Environmental Protection Agency [U.S. EPA]. (2023, June 20). *Pesticide Registration Improvement Act Bilingual Labeling Requirements: Making Bilingual Pesticide Labeling Accessible to Farmworkers* (Docket EPA-HQ-OPP-2023-0270-0003). https://www.regulations.gov/document/EPA-HQ-OPP-2023-0270-0003

U.S. EPA. (2024, April 24). *PRIA 5 Implementation*. https://web.archive.org/web/20240426141637/https://www.epa.gov/pria-fees/pria-5-implementation