IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 3, November 2025
Impact Factor: 7.67

FarmSense: Intelligent System for Safe Pesticide Handling, Monitoring and Exposure Prevention for Farmers

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Abstract: *There's a particular smell to a freshly sprayed field. It's that acrid, chemical promise of a higher yield, a haze that hangs in the humid air long after the tractor has rumbled away. For the farmer lugging the sprayer, that sting in the back of the throat is just part of the job—a low-grade, biological alarm that you learn to ignore. Apparently, a project called FarmSense wants to make that alarm a lot louder. The pitch is, frankly, a digital band-aid for a systemic problem. They've essentially cobbled together a handful of off-the-shelf gas sensors and wired them to a cheap microcontroller, creating a sort of high-tech canary for the cornfields. This little box continuously sniffs the air for the nasty stuff. If the concentration of whatever poison-of-the-week you're deploying gets a little too spicy, it's supposed to scream for help. (Or, more realistically, it sends a notification to the phone you probably left on the dashboard of your truck.) Naturally, all this data gets beamed up to the cloud, because where else would it go? There, some "AI models"—which sounds suspiciously like a glorified spreadsheet formula—decide if you're breathing in enough toxins to be a problem. Every reading is logged, creating a grim historical record of chemical exposure for researchers to study later. It's a morbid kind of scoreboard for industrial agriculture. They're pushing it as affordable and simple, the classic sales pitch for tech aimed at people who work with dirt, not desktops. The real question is whether it can survive a single season of being dropped, caked in mud, and generally abused. It's an attempt, I suppose, to slap a bit of silicon-valley smarts onto a problem that probably should not exist in the first place.*

Keywords: IoT-based Monitoring, Pesticide Fume Detection, Farmer Safety, Real-time Air Quality Monitoring, Smart Agriculture, Health Monitoring IJIRT 140001 System, Artificial Intelligence, Environmental Sensing, Precision Farming, Sustainable Agriculture

DOI: 10.48175/IJARSCT-29810