

A Global View of Precision Agriculture: Opportunities for California

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Precision agriculture (PA) tools, technologies, and information management strategies are becoming mainstream in many regions of the world. Several technologies such as automated guidance, yield monitoring, and georeferenced soil sampling are no longer considered premium services, but are standard offerings from many agricultural providers. Information needed for farm management is also more accessible and delivered faster through mobile device technology than ever before. Precision agriculture has been identified as a key component in developing the high-production, high-efficiency systems needed to meet the food demands of the future. For the past two decades, Purdue University has conducted a survey of agriculture service providers in the Midwest USA regarding the use of PA. Those participating in the survey were asked about customer adoption of PA, how PA is used at the dealership, and the profitability and expected future investment in PA. The history of the survey begins when GPS was first used to guide soil sampling, apply fertilizers, and create yield maps; which are now technologies ubiquitous on US farms. Adoption of these types of technologies that don't depend on site-specific information to extract value has been rapid and steady, while others that require agronomic calibration or some level of data management such as remote sensing, soil management zone delineation, and using yield maps to characterize and understand field variability has been slower and a much greater challenge than many would have predicted two decades ago. Despite the lower costs and much greater capacity to store data compared to twenty years ago, the information side of PA also continues to struggle in demonstrating value. The objective of this presentation is to evaluate trends in PA use around the world and to discuss current industry and academic efforts to overcome existing barriers to adoption and how these efforts might affect CA agriculture.