Science Societies

New book: *Precision Agriculture Basics, 2nd Edition*

A needed textbook for a rapidly advancing field

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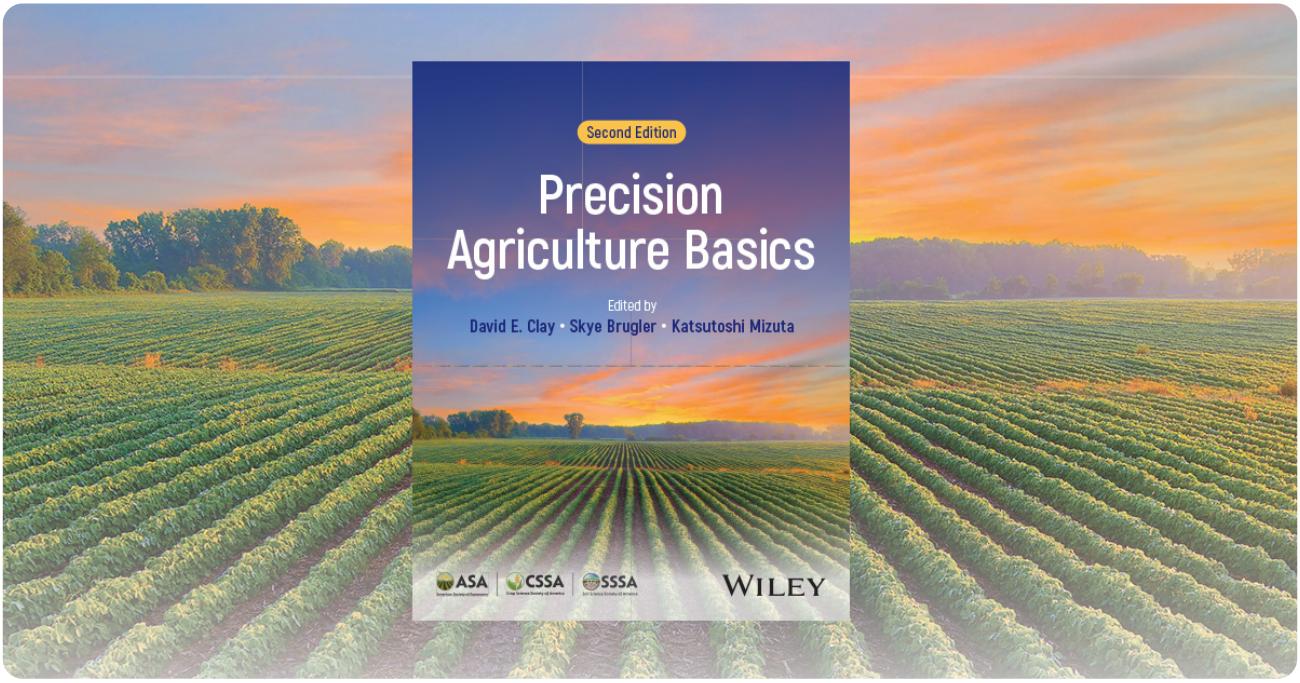

Precision agriculture is synonymous with innovation, and thanks to rapid advancements in technology, machine learning and artificial intelligence, and even our

own understanding of the crop field, it's no surprise that our ability to create the most efficient crop systems has quickly evolved, even over just a few years. That's why, eight years after publishing their first book on precision agriculture, ASA, CSSA, and SSSA are publishing *Precision Agriculture Basics, 2nd Edition* this October. This new textbook expands on its predecessor by updating 15 of the first edition's chapters and adding 17 new chapters that describe advancements in areas such as remote sensing technologies, AI in agriculture, soil health and soil biology, and precision conservation.

Using information from the land to make agricultural decisions isn't a new concept—in fact, humans have been doing just that for centuries. An often-taught example is the concept of the "three sisters" crops: Indigenous Americans would plant corn, beans, and squash together, knowing that the companion plants would create a harmonious trio that kept the soil fertile and the weeds out, which in turn increased food yields. And with years of farming and research under our belts, our understanding of how to support agricultural systems has only improved—today, precision agriculture takes that basic concept of using the land to inform management practices and pushes it to the next level.

By gathering massive amounts of data from the field and analyzing it over space and time, precision agriculturalists aim to describe the variability within a crop field and design site-specific management plans to create productive yet efficient and sustainable cropping systems, making the most out of your crop with the least amount of inputs as possible.

Sensor-based, on-the-go technology to estimate field conditions in real time and continuously adjust application rates. (Source: Figure 4.4 from Chapter 4 of Precision Agriculture Basics, 2nd Edition.)

Precision Agriculture Basics, 2nd Edition was written by more than 80 agricultural professionals from across the globe. The book aims to be clear yet comprehensive and thus is suitable for both students and seasoned professionals. Purchasing the book also provides access to video interviews from researchers, archived datasets to practice data analytics, and end-of-chapter questions and answers for self-studying.

Society members can get an additional 20% off of the textbook's price (use promo code **PAB2E**) in addition to free access to an upcoming webinar about the book on September 10. Attending the webinar gives members the chance to discuss the book's four main topics (precision technologies, machine learning and precision farming tools, pest management, and soil health's role in precision farming) with the editors.

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Editors David Clay, Skye Brugler, and Katsutoshi Mizuta are experts in soil health, climate-smart agriculture, crop inputs, and crop resilience. With an updated text that describes the latest research developments and an extensive library of training materials, they hope that *Precision Agriculture Basics*, *2nd Edition* can be a helpful resource for anyone interested in precision agriculture.

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