

Barriers to Adoption of Improved Nitrogen Management Practices

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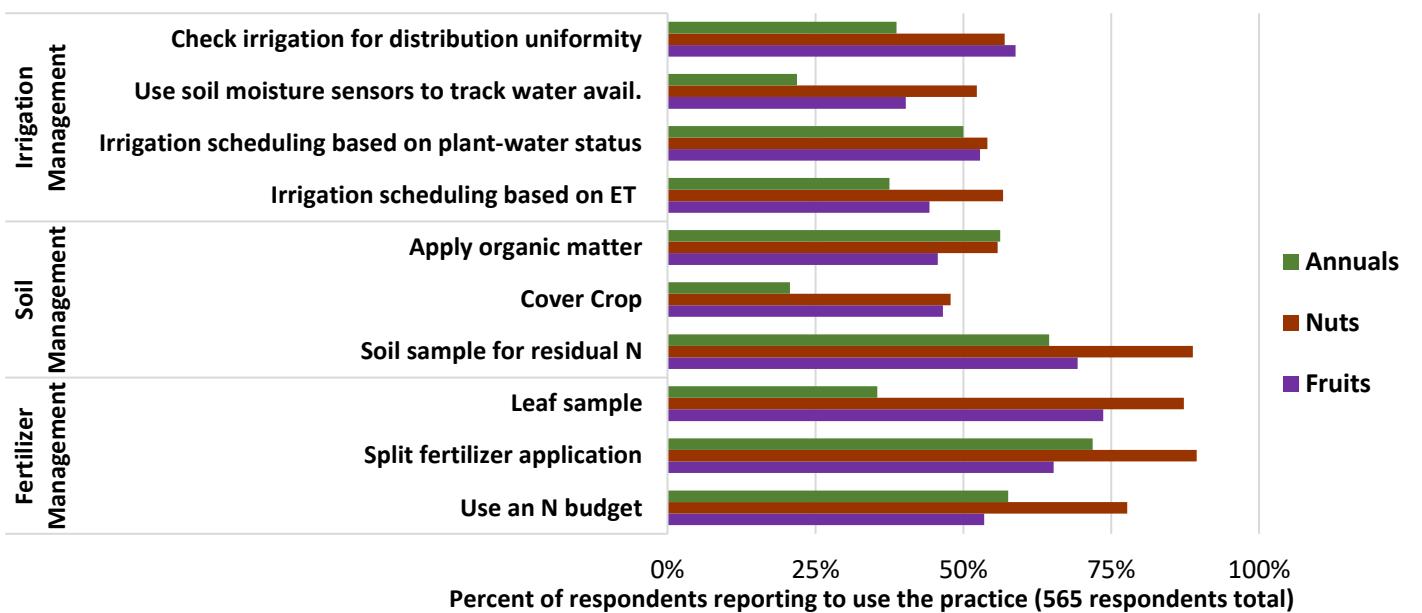
Summary: Central Valley growers adopt on average 5 out of 10 recommended practices for improved nitrogen (N) management. UC Davis is conducting a study to understand which practices are most important under different conditions and what barriers to adoption exist for those practices. Adoption of these practices is an important step in improving N use efficiency, minimizing N losses, reducing contamination of surface and groundwater drinking supplies, meeting regulatory requirements, and maintaining the agricultural sector's strong land and water stewardship. We focus on three areas which improve N management while maintaining productivity:

- ❖ **Fertilizer practices:** Use a nitrogen budget to determine fertilizer rates; split fertilizer applications; verify plant nutrient status by using in-season leaf sampling
- ❖ **Soil practices:** Take soil samples to measure residual nitrate; apply organic matter (compost or manure); plant cover crops
- ❖ **Irrigation practices:** Schedule irrigation by measuring plant-water status or using evapotranspiration (ET) measurements; use soil moisture sensors, test irrigation systems for distribution uniformity

Map of Sacramento Valley (green) and Northern San Joaquin Valley (purple) study areas

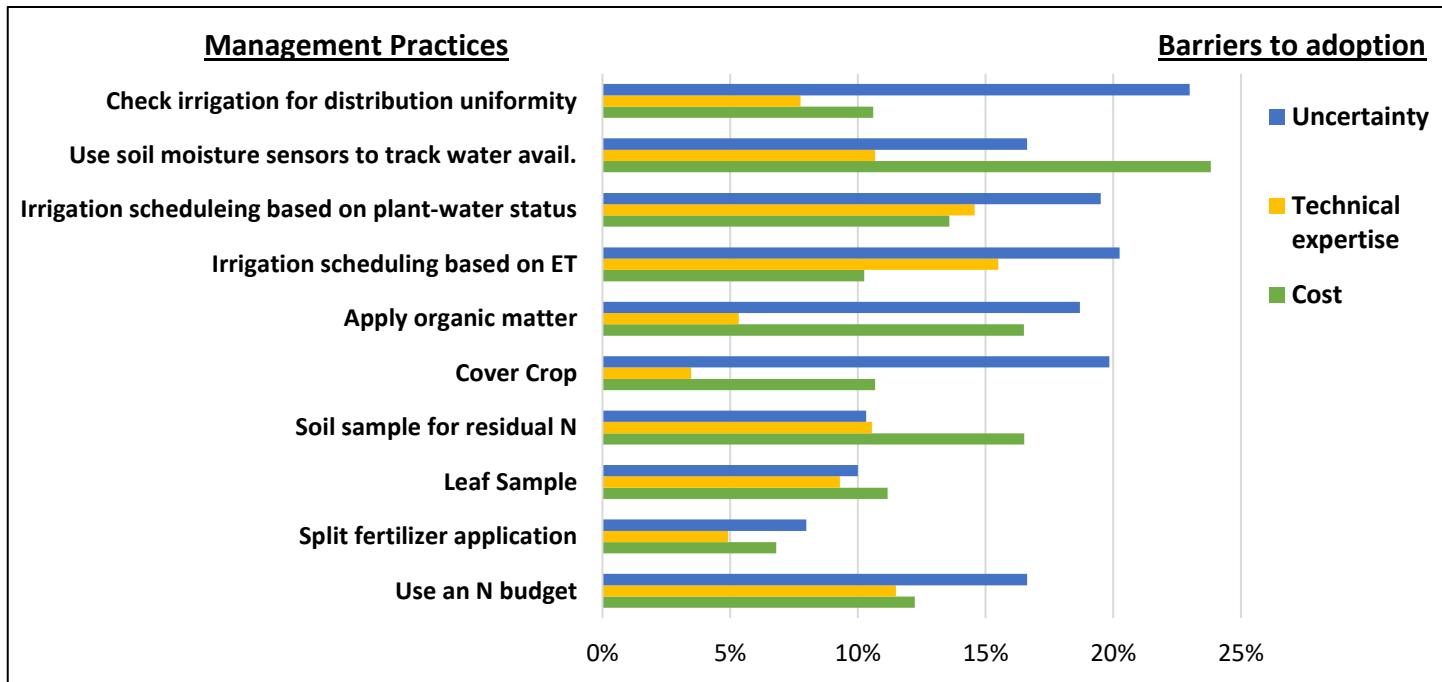


Adoption of management practices in different cropping systems



Key Barriers to Adoption of Improved N Management Practices:

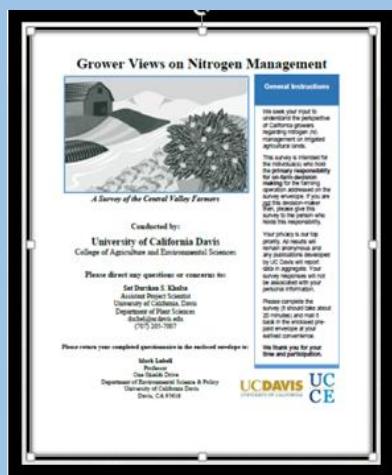
- ❖ **Cost** and **uncertainty** about practice are the most frequently named barriers to adoption.
- ❖ Irrigation practices are essential to better N management, but growers have said the connection between water and N movement isn't always clear and irrigation technical expertise is hard to come by.
- ❖ Outreach and extension on N management practices is needed and should focus on the on-farm benefits of recommended practices.



SURVEY COMING SOON!

Our next step in this work is to survey 5,000 Central Valley growers on barriers to practice adoption. This is your chance to weigh in on this important issues. Keep an eye on your mailbox and please respond!

Survey out in Sacramento Valley in Spring 2018 & San Joaquin Valley in Summer 2018.



Questions or comments? Contact Jessica Rudnick at jrudnick@ucdavis.edu or Sat Darshan S. Khalsa at dschel@ucdavis.edu.

Grower Meeting Surveys
The data here comes from surveys we collected from **565 growers** at 7 annual grower education meetings in 2 Central Valley Water Quality Coalitions (see map on pg. 1) in **winter 2017**. These coalitions represent ~8,000 individual growers and 1.6 million acres of irrigated farmland in the Central Valley.

Parcel size: 53% small (0-50 acres); 47% large (51-250 acres)

Land tenure: 84% land owners

Water source: 38% surface water only; 30% groundwater only; 31% mixed sources

Crop type of respondents:

