



4R Nutrient Stewardship

Survey of Agricultural Retailers and Conservation Districts NRCS State Conservationists Briefing



Surveys Sponsored by:
 American Society of Agronomy (Certified Crop Advisors)
 Agricultural Retailers Association
 National Association of Conservation Districts
 National Council of Farmer Cooperatives
 The Fertilizer Institute

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Survey Purpose

Accelerate 4R Nutrient Stewardship Practice Adoption by:


- Identifying the strengths of the Agricultural Retailer-Conservation District working relationship
- Identifying opportunities to improve the Agricultural Retailer-Conservation District working relationship
- Providing input to develop strategies for these groups to work more closely together
- Establishing baseline information about the use of 4R practices

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1. Survey Methodology







Survey Methodology


- e-mails were sent in late February to 2,600 Ag Retailers and 2,600 Conservation District employees (Conservationists) inviting them to respond to an Internet survey
- 396 Agricultural Retailers responded (15.2% response rate)
- 481 Conservationists responded (18.5% response rate)

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2. Respondent Profile






Profile

- Corn, soybean, wheat, forage represent the major crops grown in the service area for both groups
- 58% of Ag Retailers and 48% of Conservationists, serve less than 250 farmers
- On average, Ag Retailers service 400,000 acres and Conservation Districts service 300,000 acres
 - 27% of Conservationists and 4% of Ag Retailers service less than 10,000 acres


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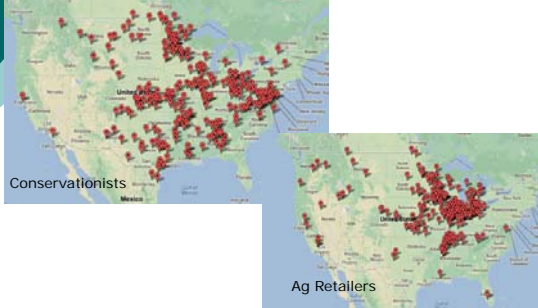
Profile

- 55% of Ag Retailers are CCAs, but only 5% of Conservationists are CCAs
- Conservationists are certified as TSPs, soil scientists and erosion control specialists
- 60% of Ag Retailers and 30% of Conservationists are managers

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Profile: Respondent Location




Ag Retailers



3. 4R Awareness






Where Did You First Learn About 4R Nutrient Stewardship?

<p>Ag Retailers (n=277)</p> <ul style="list-style-type: none"> ○ Meetings (specifically Dr. Howard Brown & Lara Moody), Growmark, TFI, in house, managers, Trade & Farm Magazines, IFCA, conferences, state level meetings, suppliers meetings ○ This survey (n=7) 	<p>Conservation Districts (n=273)</p> <ul style="list-style-type: none"> ○ Meetings and publications (NRCS, SWCD, NACD), training in nutrient management ○ This survey (n=100)
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4R Awareness


- Each group's awareness of agricultural conservation efforts of the other group is low:
 - Ag Retailers rate awareness of Conservation District activities at 5.4
 - Conservation Districts rate awareness of Ag Retailer activities at 3.3
- The groups differ regarding their awareness of:
 - 4Rs (AR – 7.2; Cons. – 4.6),
 - NRCS Tech Assistance (AR – 4.6; Cons. – 8.9),
 - Federal cost sharing (AR – 4.9; Cons. – 8.9)
 - State cost sharing (AR – 4.4; Cons. – 6.6)
- Both groups rated:
 - “Customer loyalty” high (AR 9.4; Cons. 9.1)
 - “Having a positive environmental impact” high (AR 9.1; Cons. 9.4)

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4. Working Relationships

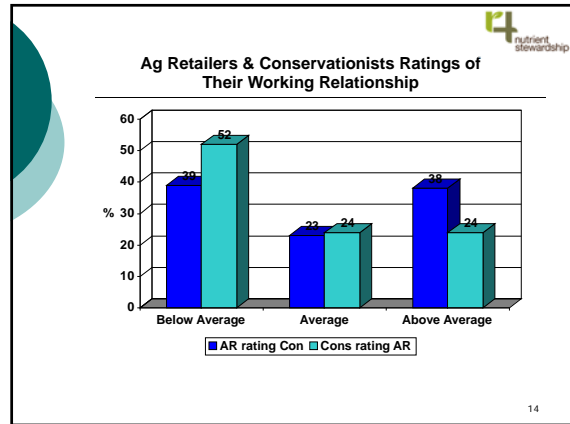






How Closely Do Ag Retailers and Conservationists Work with Other Groups


Ag Retailers (Mean Rating)		Conservation Districts (Mean Rating)	
Certified Crop Advisor	7.5	NRCS	9.3
Other Ag Retailers	6.2	State Ag/Env Agency	7.3
Land Grant/Extension	5.9	Land Grant/Extension	6.6
Producer Org	5.9	TSP	6.2
State Ag/Env Agency	5.4	Producer Org	5.5
NRCS staff	5.0	Ag Retailers	4.2
SWCD staff	5.0	Certified Crop Adv	3.5
TSP	4.6		


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- ### Barriers to Working Closer Together
- Both groups agreed “**different objectives**” of the organizations are major barriers
 - A high number of Ag Retailers listed the following barriers:
 - **Lack of outreach from their organization**
 - **Lack of understanding of the role of conservationists**
 - Conservation Districts rated “**lack of time**” as their second biggest barrier
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- ### Ways of Overcoming Barriers
- #### High Priority
- Improve professional relations (AR-74%; C-58%)
 - Sharing tech information (AR-60%; C-56%)
 - Regular meetings (AR-57%; C-52%)
 - Joint training (AR-50%; C-51%)
- #### Low Priority
- Provide access to nutrient stewardship data (AR-45%; C-30%)
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- ### Information sharing
- 41% of Ag Retailers and 43% of Conservationists receive no information from the other group
 - Even with limited understanding of what conservationists do, Ag Retailers are interested in receiving information from Conservation Districts on:
 - Cost share programs (55%)
 - Conservation plans (40%)
 - New technology (38%)
 - Phosphorous index (35%)
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- ### Information sharing
- About 30% of Conservation District staff would like to receive information on the 4Rs
 - 63% of Conservation Districts indicated that they wanted additional information from Ag Retailers
 - 82% of Ag Retailers indicated that they wanted additional information from Conservationists
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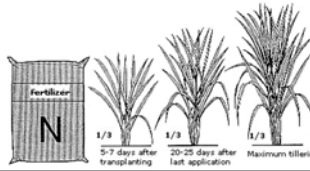
Preferred Information Distribution Methods


- Both rated “on-farm demonstrations” and “field days” highest – Conservation Districts (8.3) Ag Retailers (7.6)
- Ag Retailers and Conservation Districts rated media type methods similarly
 - Ag media (AR-6.9; C-7.6),
 - e-mail/newsletters (AR-6.9; C-7.1),
 - Websites (AR-6.8; C-6.7)
 - Conferences/meetings (AR-6.8; C-7.0)
- Conservation Districts had higher ratings for “word of mouth” or “coffee shop” (AR-6.4; C-8.3)

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5. Practice Recommendations






Practice recommendations

- Ag Retailers recommend nutrient-based practices; Conservationists recommended a broader array of practices
- The only common practice in both groups top 7 is “testing soil fertility”
- The most frequently recommended practices have a lower probability of being omitted by the farmer
- Ag Retailers agree more on their recommended practices than Conservationists
 - 75-98% of AR compared to 48-75% of Conservationists recommend their top 7 practices

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Practices Customers OMIT from Nutrient Stewardship Plans?


- Agricultural Retailers (top 4)
 - Using aerial photos (52%)
 - Mapping environ. sensitive areas (47%)
 - Pre-side nitrate testing (47%)
 - Using risk assess tool (P-index) (44%)
- Conservation Districts (top 4)
 - Testing plant tissues (44%)
 - Mapping environ. sensitive areas (36%)
 - Manure testing (32%)
 - Using risk assess tool (P-index) (32%)

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6. Benefits and Barriers





Economic Net Returns

- Agricultural Retailers (top 4)

● Variable rate application	Mean (8.0)
● Water mg (tile drainage)	(8.0)
● Split applications	(8.0)
● Crop Rotations	(7.9)
- Conservation Districts (top 4)

● Conservation tillage	(7.8)
● Crop Rotations	(7.8)
● Cover Crops	(7.5)
● Variable rate application	(7.4)

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Environmental benefits

- Agricultural Retailers (top 4) **Mean**
 - Conservation tillage (8.2)
 - Variable rate application (8.2)
 - Buffer strips (8.1)
 - Split applications (8.1)
- Conservation Districts (top 4)
 - Cover crops (8.9)
 - Conservation tillage (8.8)
 - Buffer strips (8.8)
 - Crop rotations (8.5)

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Differences

- Variable rate application practice is rated high for economic net returns and environmental benefits by both groups
 - But only 27% of Conservation Districts recommend this practice
- Ag Retailers rate the economic and environmental benefits of conservation tillage relatively high
 - Only 60% of Ag Retailers recommended CT to producers. This is RELATIVELY LOW number, which did not fall in their top 7 recommended practices

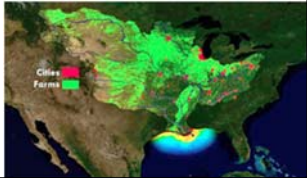
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Major Barriers Preventing Farmers from Adopting Additional Nutrient Stewardship

Ag Retailers	Conservation Districts
○ Perceived cost	○ Perceived cost
○ Farm mgmt. tradition	○ Farm mgmt. tradition
○ Farm profit motive	○ Farm profit motive
○ Low knowledge of Fed/state/co. Cost Share	○ Low understanding of env. benefits
○ Low knowledge of Fed/state/co TA	○ Perceived risk
○ Perceived risk	○ Low knowledge of Fed/state/co. Cost Share

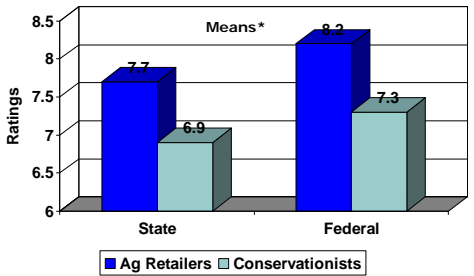
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7. Anticipation of Regulations



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Likelihood of commercial fertilizer regulation




Category	Ag Retailers	Conservationists
State	7.7	6.9
Federal	8.2	7.3

Means*


*Both categories are statistical significant at the .001 level

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8. Science, Tools, Training, & Ideas




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Ag Retailers – Science-Based Tools Needed

- In-field, iPhone/iPad/smart phone apps that instantly estimate nitrate levels, soils, plant tissue, microbial actions
- Sensors that estimate field nutrient levels, yields, soils, drainage, etc.
- Grid sampling and analysis
- Demonstration sites and test plots
- Tool to display 4R practice economic and environmental impacts


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Conservation Districts – Science-Based Tools Needed

- Soil sensors, irrigation/fertigation controllers, yield maps, better use of GIS
- Tools that are understandable for farmers and not just professionals
- Nitrogen loss calculator that considers moisture, soil, air temperature, nitrogen source
- Tools that measure soil health, ground and surface water quality, phosphorous
- HD aerial imagery of cropland


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Additional Training and Education Needs


Ag Retailers	Conservation Districts
<ul style="list-style-type: none"> ○ Training in 4R basics through field days, e-mail, webinars, newsletters, on-line ○ Meetings - jointly with producers & NRCS, training on programs and roles of Fed and state staffs 	<ul style="list-style-type: none"> ○ Training in 4R basics, workshops, field days, annual meetings, on-line information, emails, in-field training, joint training with NRCS and Retailers ○ Nutrient management information - field days, case studies, advanced fertilizer applications (GPS, precision ag) ○ Meetings with fertilizer companies, newsletters, videos

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9. Summary





Summary

- As expected, the survey revealed differences between the two groups reflecting their different objectives
- Different awareness levels and skill sets:
 - Ag Retailers – high awareness of 4Rs and CCAs but low awareness of Federal conservation system, especially cost share programs
 - Conservationists –high awareness of cost share programs, NRCS, & TSPs but low awareness of 4Rs. Skills more in area of erosion control and soils
- Each group has low knowledge or awareness of the other
- Both groups want to have a positive environmental impact, and support customer loyalty and expanding customer base.

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Summary

- The groups recommend different practices to growers – Ag Retailers recommend 4R related practices; conservation Districts recommend a broader array of conservation-oriented practices
- The groups evaluated the economic and environmental benefits of practices differently
- The groups agreed that perceived cost and farming traditions are major barriers to the adoption of nutrient stewardship practices
- Ag Retailers have greater concerns than Conservation Districts about increased state and Federal government regulation

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Summary

- In field, instant monitoring of 4R related indicators is supported by both groups. A preference is to develop an app for hand-held devices i.e., smart phones and tablets
- Both groups desire joint training and joint meetings on the basics of the 4Rs

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Potential Next Steps

- Revise 4R Stewardship Strategy
- Disseminate survey results
- Encourage quarterly, local meetings with Agricultural Retailers, Conservation Districts, and NRCS
- Conduct joint training
- Jointly host 4R field days
- Explore data sharing and field app development
- Develop 4R economic information
- Involvement with NRCS?

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Thank You!










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