Soil Health Education and Communication

ROB MYERS, PH.D.

UNIVERSITY OF MISSOURI AND NCR-SARE
Audiences for Soil Health Information

- Farmers and ranchers
- Agriculture advisors
  - Extension, NRCS, SWCDs
  - Ag retailers and independent CCAs
  - Seed and equipment dealers
  - Ag lenders and farm managers
- Land owners
- General public
  - Teachers
  - Students
  - Consumers
Soil Health Communication and Education

• Audiences
  • Reaching across audiences
  • Key targets
    • Ag retailers
    • Landowners
    • Consumers

• Messages
  • Key messages
  • Resources and activities

• Strategies

Example message: Keep the soil covered!
Soil Health Messages

Soil health messages can be about facts and statistics, principles and concepts, farming and ranching practices, and producer stories, but they can also be creative!

Catchy messaging:
Cover your assets
or
Don’t farm naked!

Secretary of Agriculture
Sonny Perdue
May 5, 2017 in Iowa
Photo credit: Chris Clayton, DTN
NRCS’ “Unlock the Secrets in the Soil” awareness & education campaign…
The most powerful tool: Farmers’ stories
Dan DeSutter farms 4,500 acres in west central Indiana with his wife and three sons. Formerly a financial analyst and commodity broker, Dan uses no-till, cover crops and manure to improve soil quality while maintaining high levels of crop production. In 2013, he was selected National No-Till Innovator of the Year. A partner in Hoosier Grassfed Beef, Dan is active in his community, serving as president of the Attica School Board and the Attica Community Foundation. He is also an avid pilot and skier.

Watch more videos in this series about cover crop innovators.
A common message from farmers pursuing soil health

Keeping living roots in the soil
Soil Health Messages for Ag Retailers

1) Sell seed
2) Plant seed
3) Terminate covers
4) Soil health testing
5) Management advice
Training for ag retailers and CCAs

NRCS print materials...
SARE Bulletins & Topic Briefs

- **SARE Bulletins**
  - **Cover Cropping for Pollinators and Beneficial Insects**
    - Overview of pollinator & beneficial insect ecology
    - Cover crop selection & management
    - Helpful & proven rotations
    - 16 pages

- **Cover Crops for Sustainable Crop Rotations**
  - PDF that highlights the resources found in the cover crop topic room
  - Selection & management
  - Crop rotations, no-till management, & pest management.
Library of Cover Crop and Soil Health Images

- Database of visuals to encourage farmers and landowners to improve soil health.
- Photo database includes aerial shots, equipment, photos of species, growers.
- Soil health gallery of illustrations with explanatory notes
- Two dozen farmer videos
- Powerpoint slide sets
cover crop benefits

- Prevent soil erosion
- Scavenge nitrogen
- Improve soil health
- Increase yields
- Build soil organic matter
- Improve rainfall infiltration
- Provide nitrogen (legumes)
- Economic returns
- Reduce soil compaction
- Encourage pollinators and beneficial insects
- Control weeds
**Summer 1**
Soybeans Before Cover Crop

**Fall 1**
Cereal Rye Cover Crop
- Cereal Rye stabilizes soil helps to retain moisture

**Summer 2**
Soybeans After Cover Crop
- Soybean plants rooting more deeply
We need creative and visual ways of communicating soil health concepts. For example:

“Feeding all the soil organisms below ground in one acre is like feeding two African elephants.”

Jerry Hatfield, ARS
Considering Soil Health And Biodiversity
Soil Health Messages for Land Owners

- 54% of U.S. cropland is rented
- 80% of rented farmland is owned by non-operators
  - 62% of those did not previously farm

Data from 2014 TOTAL Survey – USDA ERS & NASS
Investment in productivity of their land

Percent yield improvement following cover crops

<table>
<thead>
<tr>
<th>Crop Year</th>
<th>Corn</th>
<th>Soybeans</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>9.6%</td>
<td>11.6%</td>
</tr>
<tr>
<td>2013</td>
<td>3.1%</td>
<td>4.3%</td>
</tr>
<tr>
<td>2014</td>
<td>2.1%</td>
<td>4.2%</td>
</tr>
<tr>
<td>2015</td>
<td>1.9%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

Data provided from farmers in the SARE/CTIC national cover crop survey. Differences are statistically significant based on analysis by Purdue University.
Funding resources for landowners and farmers

- NRCS Environmental Quality Incentives Program
- NRCS Conservation Stewardship Program
- SARE Program Farmer Rancher grants
- State cost-share programs
Soil Health Messages for Consumers

• 1) Make soil health relevant to the general public, such as connecting it to:
  ➢ Food they eat and clothing they wear
  ➢ Their drinking water and recreational water bodies
  ➢ Other environmental issues they may care about, including pollinators, wildlife and climate

• 2) Bring the idea of a diverse soil ecosystem to light, showing how there are more than just earthworms and “dirt” underneath their feet.
  ➢ Not all bacteria and fungi are bad and many are good in terms of food production.

• 3) Explain about how farmer choices (and home gardener choices) can affect the health of the soil.

• 4) Briefly illustrate some basic approaches for improving soil health, such as cover crops, diversified rotations, less tillage, nutrient management, etc.

• 5) Communicate why we all depend on the soil - thin layer on which all life depends, shrinking base of fertile farmland, etc.
Wide distribution of radio PSAs in rural markets via National Association of Farm Broadcasters
TV PSA campaign...

80,000 air plays worth $9 million
NRCS out of home PSA ads…
Soil health education and communication strategies

• **Basic communicating:**
  - Building awareness – PSAs, farmer stories, etc.
  - Sparking interest, including desire to learn more

• **Truly educating:**
  - Developing the ability to act and do so successfully
  - Multiplying educator numbers through train the trainer approaches
  - In-depth workshops and field days
  - Farmer to farmer learning

• **Major farming changes requires:**
  - Repeated exposure to the concept
  - Developing personal realization of why a change is needed
  - The opportunity to ask questions – best if asking other farmers
  - Committing to a first step (cost share or trial field or just soil health testing)