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Inside this issue:
Inhoud:

Nuus/News

Hallo All

We are racing towards the middle of the year and it looks like the Swartland will be experiencing a shortish growing season this year, with little to no rain falling up to today.

In the growing areas to the east of the Southern Cape, such as Riversdale fodder crops and canola has already emerged and are growing nicely. The crop rotation trials planted here and in the Napky area has also emerged.

Sterkte aan almal. Ons hou duim vas die reën kom gou.

Groete van huis tot huis

Johann Strauss

The url to the Science of soil health Channel videos

Upcoming farmers' days and events:

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Wes-Kaapse Regering
Landbou

BETER TESAME.

Groentoere vir 2015

Die groen toer datums is as volg:

Tygerhoek: 23 Julie 2015

Swellendam: 6 Augustus 2015

Swartland: 20 Augustus 2015

Ons sal nader aan die tyd meer inligitng deurgee aangaande elke spesifieke groentoer.

Die datums vir die konferensie week is as volg:

Suidkaap toer—7 September

Swartlandtoer—8 September

Konferensie dag—10 September

Green tours in 2015

The dates for the green tours are as follows:

Tygerhoek: 23 July 2015

Swellendam: 6 August 2015

Swartland: 20 August 2015

More information will be given on each tour closer to the date.

The dates for the conference week are as follows:

Southern Cape tour—7 September
Swartland tour—8 September
Conference day—10 September

Is 2015 The Year Soil Becomes Climate Change's Hottest Topic?

by Natasha Geiling (Twitter)

Environmental groups want to make soil a red hot climate change issue.

CREDIT: Shutterstock

Last week, 650 people from 80 countries gathered in Germany for a week-long discussion about an increasingly important topic in climate change: soil. Dubbed Global Soil Week by the Global Soil Forum — an international body dedicated to achieving responsible land use and soil management — the conference brought together scientists and environmental advocates from all over the world who hoped to translate scientific research about soil into tangible policies for its management.

2015 is shaping up to be a big year for soil — in addition to being Global Soil Week's third year running, the United Nations Food and Agriculture Organization has declared it the International Year of Soil. José Graziano da Silva, director of the FAO, has called soil a "nearly forgotten resource," and has implemented more than 120 soil-related projects around the world to mark the International Year of Soil. Farming First, a global agriculture coalition with more than 150 support organizations, has also called for soil health to be a top priority in the UN's new Sustainable Development Goals.

So why is soil so important?

"If you look at the global carbon created in nature under land-based systems, soil and trees are the two dominant reservoirs where carbon is," Rattan Lal, director of the Carbon Management and Sequestration Center at Ohio State University, told ThinkProgress.

Soils — and the microbes that live within them — store three times as much carbon as is in the atmosphere, and four and a half times as much as in all plants and animals. "If the soil carbon reserve is not managed properly," Lal said, "it can easily overwhelm the atmosphere."

Climate change can stimulate the release of carbon from soil in a few different ways. Normally, carbon is bonded to minerals in the soil, which helps keep carbon locked in the soil and out of the atmosphere. A recent report by scientists at Oregon State University, however, found that when chemicals emitted by plant roots interact with minerals in soil, it can cause carbon to break free. This exposes the carbon to decomposition by microbes in the soil, which pass it into the atmosphere as carbon dioxide. As the climate warms, the scientists found, more carbon dioxide in the atmosphere will stimulate the growth of plants, which will in turn stimulate the production of the root compounds that breakdown carbon and soil minerals.

"We thought for many many years if you just increase plant productivity, soil carbon will just go up," Kate Lajtha, professor of biogeochemistry at Oregon State University, told ThinkProgress. "What more and more models are seeing now is that the opposite is true."

The microbes that break down stored carbon are also likely to become more active in a warmer world, according to a 2014 study published in Nature. The study looked at microbes in 22 different kinds of soil from along a climatic gradient, testing samples of soil from the Arctic to the Amazon. They found that as temperature increased, the respiratory activity of the microbes in the soil also increased, releasing more carbon dioxide — and that effect was most pronounced in northern soils, which tend to store more carbon than soils at other latitudes.

Soil isn't just useful for storing carbon — it also grows 95 percent of the food we eat, according to the FAO. But even beyond climate change, agriculture is the number one cause of soil disruption.

"What we're seeing is probably the biggest drivers aren't going to be those direct effects of climate," Lajtha said. "Really, the big driver of soil carbon change is what humans are doing to the

soil, and a lot of that is agriculture." The UN estimates that nearly a third of the world's soil is degraded — in sub-Saharan Africa, that figure is closer to two-thirds. Degraded soils are less effective for growing crops, threatening food security in places where most of the population lives off of subsistence farming. According to the Montpellier Panel — an international group working to support national and regional agricultural development and food security priorities in sub-Saharan Africa — soil degradation costs sub-Saharan Africa $68 billion per year. If soil degradation continues at its current rate, the UN estimates that all of the world's topsoil could be gone in 60 years.

Topsoil, Lajtha says, is where most soil carbon is stored — it's where decomposed plant matter and plant roots are deposited — so losing topsoil means losing a huge amount of carbon currently stored in the soil.

But soil degradation isn't irreversible. "If we manage the soil properly, we can reverse the degradation and some of that carbon that we lost can be put back," Lal said.

Conservation practices like no-till agriculture can help minimize soil degradation, according to Lal. Other practices — like planting cover crops in the winter season or continously applying compost to soil — can also help boost soil's ability to retain carbon.

"In some ways, it's as simple as a disrupted soil loses carbon and intact soil with vegetation retains carbon," Lajtha said.

But conservation practices aren't widely adopted yet — in Ohio, according to Lal, cover crop use and no-till agriculture is practiced on just one-third of the cropland. Worldwide, such conservation practices account for only 10 percent of cropland.

For some farmers, switching to no-till agriculture means replacing seed drills, which can cost upwards of $100,000.

"Even though the community as a whole benefits, there might be a reduction in yield that is prohibitive to farmers that adopt it," Lal said, noting that the adoption rate of no-till agriculture has been almost zero in places like Africa and Southeast Asia. "We have a long way to go," he said.

Scientists have also seen promise in the practice of agroforestry — combining trees with cropland or livestock systems. Elizabeth Teague, senior associate for environmental performance at Root Capital, an investing fund that works with small agribusinesses in Africa and Latin America, have seen a slew of benefits associated with agroforestry, mostly with coffee and cocoa crops.

"Trees can help enrich the soil, and if done properly you can help avoid erosion, which is a big problem in coffee producing environments," Teague told ThinkProgress. "Many studies have also shown that the agroforestry system can help mitigate climate change by helping with carbon sequestration. compared to other type of cropping systems, the trees are sequestering carbon and increasing above and below ground carbon stocks."

Like no-till and cover crops, however, certain barriers still exist between small-hold farmers in developing countries and agroforestry. Planting trees alongside crops requires a certain level of finesse — plant too many trees and the crops won't thrive; plant too few, and the environment suffers.

"Farmers have to figure out what this sweet spot is where they are maintaining a diverse, robust agroforestry system that also allows them to have a commercially viable farm," Teague said. "For small

farmers without education, resources, and technical assistance, that can be very difficult."

To Lal, who contributed to the Montpelier Panel's 2014 report on soil restoration, agriculture might be the problem — but it can also be the solution.

"Most of the time the perception is that agriculture is a big time problem," he said. "Yes, agriculture done improperly can definitely be a problem, but agriculture done in a proper way is an important solution to environmental issues including climate change, water issues, and biodiversity."

New No-till Transplanter

A REALITY CHECK ON RESEARCH IN AGRICULTURE

BY HOWARD G. BUFFETT

There is a serious disconnect between academic research in agriculture and the practical realities of farming that undermines how agricultural policy is developed. The consequences here in the U.S. are the threats of a highly regulated, less profitable and an environmentally unacceptable farming system; in the developing world, it keeps millions of smallholder farmers hungry. I was reminded of this by a recent academic article published in the science journal Nature that suggests that conservation agriculture practices, and particularly no-till, produces lower yields as compared to conventional farming. This conclusion is based on the authors' "global meta-analysis" of 610 studies across 48 crops (I did not know there were even 48 types of crops you could no-till) and 63 countries. The analysis incorporates no-till fields with no cover – that is like taking a shower without any water. It is time for a reality check from the field.

I have been farming in Nebraska, Illinois, Arizona, and South Africa for a number of years. Twenty-two years ago, I adopted conservation agriculture practices. Meanwhile, our foundation has funded a number of partners, including academics, to support research in agriculture for the past decade. Knowing both worlds, I can say with confidence that academics and farmers rarely speak the same language.

Yet academics have a megaphone when it comes to influencing decision-making around priorities for agricultural policy, particularly in the developing world. That outsized influence means recommendations may look good on paper but do not necessarily translate to progress on the farm. Let me illustrate my point using a personal example.

I recently had to have four kidney stones surgically removed. The most important thing I anted to know was the doctor's surgical experience and success rate for kidney stone surgery. I didn't care about the doctor's test scores in medical school or how high he graduated in his class. Second, the proposed procedure mattered. One surgeon was suggesting a highly invasive procedure with risks for complications; the other recommended a much less invasive approach with high success rates. It shouldn't surprise you that I selected the surgeon with the best track record performing the least invasive approach. The surgery was a success.

Unfortunately, when it comes to big decisions that affect agriculture, policymakers seem tovalue academic pedigree more than farming experience. The result can be that development decisions are made in agriculture that make sense to other academics but do not necessarily work for farmers in the real world. For example, I have made three visits to a well-established research station in Africa (not to be named so I can return). The maize yields at the research station exceeded six tons per hectare, but the average for the country's farmers remained below one ton per hectare. The researchers were thrilled with their progress but the farmers' families remained hungry. The highly controlled conditions of those maize research plots could not possibly be replicated by poor farmers.

On our own research farms in South Africa (9,200 acres), Illinois (4,400 acres), Arizona (1,500 acres), and Nebraska (1,000 acres) we divide our research into two types: standard plot-sized research run by our university partners that is designed to develop better plants and traits; and practically applied research conducted at farm-scale, which is our attempt to learn what works and what doesn't work in reallife farming. This is the antithesis of what our friends at the African research facility are doing and is counter to the desk peer review analyses performed by non-farmer academics for the benefit of other non-farmer academics.

The practical issues that farmers run into in the real world are important to understand. We regularly see conflicts between the academic research needs and the real-world decisions we must make on our farms, underscoring the gap between theory and reality. For example, we wanted to make a practical management change on a 320-acre field but found ourselves arguing with a master's student because it created problems for her thesis. Another time we found ourselves in disagreement with a professor because we needed to change the hybrid seeds we were planting, a "catastrophic" decision in his eyes. However, after four years that hybrid was no longer available, and there was better technology that farmers would choose to use in the real world. Another professor was upset with us because he wanted conditions to be "perfect."

He suggested that we use a software program that eliminates imperfections and averages the results. I wish Cargill or ADM would consider using this software when they buy my grain. Real-world farming isn't perfect and conditions cannot be controlled. A 320-acre "plot" is big and has a range of variables that are unpredictable: it has wet spots, varying soil types, areas with compaction, different weed pressure, different varieties of bugs, etc. You cannot make 320 acres perfect, which is why most research takes place on small test plots or in greenhouses, just as it is why champion growers reach peak yields on 30 acres, not 300.

Let me give you an example from this past farming year in Nebraska. We planted our corn on a date well within the University recommended guidance and typical for our area. We then got a late frost, which transformed our green rows of corn into limp brown plants. Then we discovered that our anhydrous applicator had not been registering properly on our monitor, meaning we put on 106 pounds of nitrogen, instead of the targeted 165

pounds. We planned on making up for it by applying additional nitrogen through the pivots and by side dressing the corners, however, continuous rain made side dressing impossible. Then one of our pivots on our corn acres got blown over so we couldn't fertilize through the pivot (we also lost several grain bins). Then a neighbor mentioned the possibility of flying on nitrogen, which I didn't even know you could do, but we were quick to call the pilot. In between, we had hail and flooding. I estimate we lost 15 acres to ponding, and more like 30 acres if you count reduced yields from standing water in addition to reduced yields overall because of the difficulty of the nitrogen applications. So in this single farming year, on one 400-acre farm, we were faced with a reduced crop and significantly increased expenses from both human error and Mother Nature.

Not one issue influencing our yields had anything to do with our no-till process. But I guess a desk peer review analysis would have concluded, "No-till doesn't work." That is our commercial farm in Nebraska, and I could go on and on with more examples from our other farms, but I think you get the point. There is, however, one other important factor we consider in our research. Our commercial scale research, which is focused on conservation agriculture, has little value if a farmer who farms 2,000 or 5,000 acres thinks it has no applicability to his or her farm. For example, the equipment we needed for our research, a 60-foot roller crimper to match our 24-row planter, is not available for purchase, we needed to custom-build one. First we had to convince John Deere to do something that wasn't so easy: sell us a 1770NT tool bar with only a hydraulic package and electrical package. This took a number of calls and emails, and one of the last calls I had was with the President of John Deere Agriculture and four John Deere engineers. They were trying to figure out how to run the tool bar down the automated assembly line without adding the elements we didn't need on the planter, such as the planter units, the openers, the vacuum system, the CCS tanks, etc.

John Deere, to its credit, figured out how to get us the basic frame we needed. We then hired an Amish farmer in Pennsylvania named Jake to take that frame and build what we think is the world's largest roller crimper. Jake is currently working on a 40-foot version to match our 16-row planter. The significance of these custom roller crimpers is we can demonstrate to commercial farmers how to incorporate cover crops into their farming systems using equipment that matches up with the planters they already own. Convincing equipment manufacturers there is a viable and growing market for these roller crimpers is a future step of course, but none of this research and analysis can be done at a desk or from a book, it needs to be demonstrated in the field.

Water savings, higher yields, environmental benefits, and reduced costs are real world facts when it comes to no-till. It doesn't mean everyone gets the same results and it doesn't mean everyone manages no-till well enough to achieve all of the benefits. It does, however, mean that no-till is an important solution to soil health, resource management and some of the other challenges farmers face, particularly in the developing world where

This custom-built 60-foot roller crimper helps to manage cover crops on commercial scale research farms. We believe this is the largest roller crimper in the world, designed on a John Deere 1770 NT tool bar to match up with a 24-row 1770 NT planter and to fold to 12-feet wide for transportation.

Side dressing with a John Deere 2510H Nutrient Applicator toolbar allows for minimal soil disturbance in this no-till field. It also splits nutrient applications to reduce leaching and improve nitrogen use by corn plants.

alternatives are limited. To say otherwise undermines an important solution to improving production and food security for farmers.

There is no silver bullet just as there is no one size fits all for farmers. Farming is difficult, unpredictable, and sometimes frustrating. You only find solutions by trying them in the field. I cannot tell you how many times I have had a farmer say to me, "I tried no-till for one year and it didn't work." There is no control in real world farming. There is no new practice of significance that can be tested in a single farming year because there is no such thing as a typical farming year.

I understand the barriers that farmers face when it comes to implementing new management practices on the farm. Whether it is equipment, a lack of information and training, a need for better support, or a concern about the risk of a big change, there are very real reasons farmers do not make the change to no-till. But when no-till is done well, it improves everything we care about as farmers, conservationists and consumers. After no-tilling thousands of acres for over 20 years, operating no-till farms on two continents, visiting hundreds of no-till and minimum-till projects in dozens of countries in Latin America and Africa, I know the facts in the field. I cannot compete with a desk review researcher who knows how to use a computer and run a regression analysis, but who has never set up a planter or un-slugged a combine; or a farmer who wants to turn a field black because his family has always farmed this way, or because he can, or because he simply likes to "recreational till." I appreciate how difficult it is to change behavior.

Howard G. Buffett on his farm in Illinois. Buffett uses no-till coulters and trash cleaners on this planter to no-till corn into soybean stubble. Preliminary indications from Channel representatives show that for on-farm production in 2014, no-till soybeans on HGBF ground yielded the highest in the area.

A few years ago I had to work a field that had not been tilled for 18 years so I could replant corn. It happened because of a reduced stand of corn from frost and rootworms and I was concerned about controlling volunteer corn from too many years of using glyphosate back to back. My son and I drove by the field and the corn was up about six inches. Nice green rows against the dark Illinois earth. My son said to me, "Dad, it is good you started me on no-till, because this field looks really nice." We must get beyond what looks nice. We must realize that trying anything new is difficult, but the results justify the effort. We should treat no-till more like our marriage: don't just do it for a year and give up but make a serious commitment to success. And we must listen to more farmers when talking about what works or doesn't work in the field. This is our approach with our Harvesting the Potential campaign. U.S. farmers will face increasing pressures from activists, regulators, consumers and companies to improve on our farming system.

Conservation agriculture is part of the answer to this challenge. Unfortunately, the disconnect between theory and reality has caused policy makers to treat conservation agriculture as an afterthought. In fact, no-till reduces soil erosion, maintains water quality, increases resiliency, sequesters carbon, enhances the diversity of our farming systems, and increases crop yields. Achieving these gains will depend on listening to farmers who understand real world farming and scientists who provide support that translates into workable and scalable applications in the field.

THE HOWARD G.
BUFFETT
FOUNDATION

Howard G. Buffett is a farmer and Chairman and CEO of the Howard G. Buffett Foundation. He has farmed for over thirty years and the foundation has invested over $100 million in research to improve agriculture and invested more than $250 million in agriculture-related programs. Visit www.HarvestingthePotential.org and www.BrownRevolution.org to learn more about the foundation's efforts to improve farming techniques in the United States and around the world.

www.harvestingthepotential.org

Foto's van die 2015 Swartland Bruintoer

CHARL VAN ROOYEN VERDUIDELIK HOEKOM HY NIE HIERDIE GROND SAL **"RIP" NIE. Hierdie man ken sy grond en** lewer telkens waardevolle bydraes tot die groen en bruintoere van die vereniging

CHARL VAN ROOYEN EXPLAINS WHY THIS SOIL SHOULD NOT BE RIPPED. This man knows his soil and always makes valuable contributions to the brown and green tours of the society

GERT VAN COLLER EXPLAINS ABOUT FUSARIAM AND ITS EFFECT ON WHEAT

GERT VAN COLLER VERDUIDELIK OOR DIE EFFEK VAN FUSARIUM OP KORING

DAAR WORD AANDAGTIG GELUISTER OP DIE PLASE VAN ABRIE RIGHTER (BO), NABY POOLS EN SAKKIE RUST (ONDER) NABY RIEBEECK-WES

PAYING CLOSE ATTENTION TO WHAT IS BEING SAID ON THE FARMS OF ABRIE RIGHTER (ABOVE), NEAR POOLS, AND SAKKIE RUST FARM (BELOW) NEAR RIEBEECK WEST

WEBTUISTE

WEBSITE

Die webtuiste is na opdatering en bietjie skaafwerk terug aanlyn en kan daar nou video's van vorige kongresse ook gesien word. Die vra en antwoord seksie is ook verbeter sodat vinnger antwoorde deurgegee kan word.

www.blwk.co.za

The website is back online, following some much needed repairs and updating. Video's of previous conferences are also now available and the question and answer section has been improved so that reposnes can be given much quicker.

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