Sue Martin: Shaken Not Stirred: Will 2018 be Bearish?

Ag Investment Services, Inc., 800-527-0051
www.futurescashinfo.com

1. China buys 60 percent+ of soybeans produced in South America and the U.S.

2. Acres to remain similar in 2018 but South American weather?

3. Commodities undervalued to assets.

4. Open Interest record high in face of declining quiet markets?

5. Best time to make sales in 2018.

Kevin Bradley: Weed Management Strategies for Soybeans

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1. Palmer amaranth is spreading through the U.S. through machinery, feed, hay, contaminated seed, etc.

2. Multiple herbicide resistance continues to increase in weeds like waterhemp and marestail.

3. Cultural weed control practices, like harvest weed seed management, are likely to increase in soybean.

4. Effective waterhemp management includes residual herbicides with multiple modes of action integrated with other cultural weed control practices.

5. Off-target movement of dicamba was a major problem in 2017 due to physical and secondary drift, and volatility of dicamba.

Doug Peterson: Understanding Basic Soil Health

Contact your local NRCS office or www.ia.usda.gov for soil health information.

1. Aggregate stability is the most important feature of the soil.

2. Aggregate stability is reduced by tillage.

3. Two things build aggregate stability: soil biology and plant roots.

4. Healthy soils are productive and profitable soils.

5. Principles of soil health: No disturbance, soil cover, year-round living roots, and diversity.

Greg Tylka: SCN — Past, Present and Future

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1. Soybean Cyst Nematode (SCN) continues to be Iowa's most damaging soybean pathogen.

2. For decades SCN was held in check by growing SCN-resistant soybean varieties.

3. Iowa's SCN populations are now overcoming resistant soybean varieties.

4. Active monitoring of SCN numbers is advised.

5. Consider managing with non-host corn, resistant soybeans, and seed treatments.

John Pauley & Simpson College Students: Palmer Amaranth Risk in Iowa

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1. Social factors influence Palmer amaranth risk.

2. Ecological factors influence Palmer amaranth risk.

3. Synthesis map calculates risk throughout Iowa.

4. Even modest Palmer amaranth infestation could have drastic economic consequences.

5. Our results can be used to determine Palmer amaranth risk on your own farm.

Jason Webster: New Technology for the Planter

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1. Soil sensing: Can it be done and what can we do with the information?

2. Soil moisture at planting: Can it be measured to ensure ideal planting depth?

3. Soil organic matter: Can it be measured and is it a good indicator of yield potential?

4. Starter fertilizers: How do we effectively apply starter fertilizer with simple attachments?

5. Dual band nitrogen: what it is, how do we do it, and yield results.

Brett McArtor, Anthony Martin: Evaluation of Fungicide and Insecticide on Soybeans

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1. Economic return of fungicide or fungicide + insecticide can vary greatly depending on price of soybeans and cost of treatment.

2. Monitor weather patterns and morning dew to anticipate disease outbreaks.

3. Insecticide resistance is a growing concern.

4. Across all trials, average yield response to fungicide was 2.1 bu/acre.

5. Across all trials, average yield response to fungicide + insecticide was 3 bu/acre.

Daniel Andersen, Brian Dougherty: An Ancient Fertilizer in a Precision Age

Dan Andersen: dsa@iastate.edu, Brian Dougherty: brian1@iastate.edu

1. Manure can be a cost-effective alternative to commercial fertilizer.

2. Manure and soil sampling are necessary to get the most value from manure.

3. Application timing is a critical factor for manure maximizing benefits.

4. Cover crops can work with manure and reduce nitrogen loss.

5. Managing application equipment is crucial for successful application.

Jane Frankenberger: Drainage Water Recycling

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1. Drainage water recycling stores drained water for use by crops later in the season.

2. Benefits include increased crop yield and reduced nitrogen and phosphorus losses downstream.

3. Water storage reservoirs must be large, ranging from 2% to more than 10% of the field area.

4. Optimal size must balance benefits with costs, and depends on climate, topography, soils, and crops.

5. A new tool at http://drainage.agriculture.purdue.edu can help estimate benefits for various sizes.

Chris Hay: Potential Impact of Drainage Water Recycling

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1. Drainage water recycling has the potential to increase crop yields and reduce nutrient losses.

2. Out of 23 years, corn was water-short in 12 to 20 years, depending on location in Iowa.

3. Average net irrigation requirements ranged from 1.4 to 3.3 inches.

4. In most years, stored drainage water could meet irrigation requirements if storage is large enough.

5. Potential average corn yield increases from 22 to 64 bu/acre from supplemental irrigation.

Dean Sponheim: Strip-till Management

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1. Strip-till makes economic sense.

2. It's the best tillage practice that will work with soil cover.

3. Strip-till improves soil health.

4. Transitional tool to use when making the switch from full width tillage to no-till.

5.   Strip-till will work for you.

Matt Helmers, Lisa Schulte Moore: What Happens When Your Crop Field STRIPS?

Matt Helmers: mhelmers@iastate.edu, Lisa Schulte Moore; lschulte@iastate.edu

1. Strategic placement of prairie strips in the row crop landscape hold great promise for reducing soil and nutrient loss at the field-scale.

2. Strategic placement of prairie strips in the row crop landscape hold great promise for providing biodiversity benefits.

3. Early management of prairie strips is critical for ensuring greatest chance for prairie establishment.

4. Cost of prairie strips is similar to practices such as cover crops and is much less than terraces.

5. Federal and state cost-share programs are available to aid in establishment of prairie strips.

Susanne Fey: In-Field Profitability Assessment

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1. Sustainable land use requires continuous analyses of within-field profitability in addition to general productivity.

2. Farmers lack control over key factors that significantly drive profitability: input costs, market prices and the weather.

3. Soil condition is one factor that farmers can improve. ISA is conducting multi-year trials to explore the economic aspects of cover crops.

4. Tools to track in-season probability of N loss due to rainfall like the ISA Online Nitrogen Risk Calculator, can help farmers minimize risk.

5. Tools to calculate probabilities of break-even response to different products and practices, (currently in development with ISU), can help farmers determine whether there could be positive economic outcomes.

Chris Wilkins, Brad Wirt: ISA Mapping Corn Nitrogen Usage via Aerial Imagery

Chris Wilkins: cwilkins@iasoybeans.com; Brad Wirt, bwirt@iasoybeans.com

1. Late-season imagery along with the stalk nitrate test or other soil or tissue data is a low-cost way to evaluate corn N status.

2. Nitrogen rate alone was not the best predictor of corn nitrogen status for 220 fields in eastern Iowa in 2016 and 2017.

3. Predicted in-field deficient area was 25% in 2016 and about 5% in 2017 while excessive area was 40% in both years.

4. With almost similar field fertilization in both years, the percentage of optimal areas increased with drier weather.

5. For fields surveyed in 2016-17, cost efficiency could be improved by better managing fall DAP and MAP applications and accounting for "insurance applications."

Fernando Miguez, Annabelle Laurent: Better Agronomic Decisions from Historical Data

Fernando Miguez: femiguez@iastate.edu, Annabelle Laurent; alaurent@iastate.edu

1. We have developed an online tool to visualize and analyze data from the ISA On-Farm Network.

2. This tool allows for efficient, anonymous and transparent access to data.

3. The goal of the online tool is to promote better assessment of effectiveness of practices and improved decision making.

4. Important question to ask: How effective was a given practice across the network in previous years? 5. Important question to ask: How does the information gained influence my decisions for the next year?

Adam Kiel, Anthony Seeman: Field Scale Water Monitoring Results

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1. Average tile nitrate concentration was 13.1 mg/L, similar to 2016 and lower than 2014-15.

2. Tile nitrate concentration averaged 13.9 mg/L from corn and 11.1 mg/L from soybean fields.

3. No strong correlation between nitrogen application rates and tile water nitrate concentrations.

4. The average amount of nitrate lost was 0.10 pounds per acre per day.

5. Cover crops showed water quality benefits.

Sean McMahon, Ray Gaesser, and Mike Naig: Conservation Infrastructure

Sean McMahon: smcmahon@iaagwateralliance.com

1. Scaling up conservation efforts will require more public/private engagement and investment.

2. Improving Conservation Infrastructure will create economic development opportunities and jobs.

3. This initiative strives to improve the profitability and the ease of implementing practices.

4. Improving soil health and water quality benefits all Iowans, upstream and downstream.

5. What should farmers/landowners do? Just start - one field at a time or one practice at a time.

Adam Kiel: The Nutrient Reduction Exchange (NRE)

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1. The NRE is a tracking system to allow for registering of nutrient reductions.

2. Farmers may have new cost share opportunities by working with cities.

3. The NRE may create conditions to encourage cities to work with farmers and vice versa.

4. The NRE may drive investment in practices resulting in the highest water quality benefit for the lowest cost.

5. The NRE is slated to be developed by October 2018.

Joshua Pritsolas, Randall Pearson: Vegetation Indices' Relationship to Crop Yield

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1. True vegetation indices should be calculated from imagery that has been converted into percent reflectance.
2. There is a very strong relationship between multi-date remotely sensed imagery and soybean yield.
3. There is a strong relationship between multi-date remotely sensed imagery and corn yield.
4. NDVI is not necessarily the best vegetation index for identifying crop stresses that relate to yield.
5. Image acquisition date (crop stage) plays an important role in identifying crop stresses that relate to yield loss.

Matt Hoffman, Soybean Trial Results
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1. On-farm trials are invaluable before making a change to your farm management.

2. Soybean inoculants didn't pay in the trials, but they are worth a second look.

3. The trial results in soybean foliar responses were negligible.

4. The trial results indicated a yield bump in soybeans when using fungicide.

5. ISA is seeking farmers for upcoming on-farm trials. Contact ISU if you are interested in participating.

Anthony Martin, Nitrogen Management Results
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1. Testing nitrogen rates and prescriptions in your own field is essential to determine whether optimal return is being met.

2. The more soil sampling data you provide a nitrogen modeling tool, the better and more fine-tuned the results will be.

3. First time users should utilize service providers to help set up and calibrate crop/nitrogen sensors.

4. Early season weather events and possible nitrogen losses should be considered when making in-season nitrogen decisions.

5. Just because there was a positive yield response, it does not guarantee a positive economic return.

Nathan Paul, Digital Prescription Agriculture
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1. Even though it has slowed a bit, adoption of precision ag is still incredibly high.

2. Management Zones within crop fields are useless without farmer validation.

3. More and more industry offerings will be coming every year.

4. Choosing an industry solution may not be necessary, depending on your operation.

5. Commit to the long haul and prepare to trust a process.

Rich Stessman, Digital Prescription Agriculture
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1. Long-term cover crop research important to understanding full benefits

2. Weather plays a factor in corn rootworm production

3. Two types corn nematodes reached levels above the economic threshold in Iowa fields

4. Land elevation is a good criteria for creating management zones

5. The On-Farm Network will be testing a variety of products and practices in 2018

Peter Kyveryga and Theo Gunther, Improving Performance of Rye Cover Crop Systems
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1. Modeling of crop systems calibrated by data from farmers' fields allows researchers to study soil nitrogen, water and crop dynamics efficiently.

2. Modeling scenarios and observed data confirmed that cover crops can reduce nitrogen loads and soil nitrate in the soil, especially early in the season.

3. However, nitrogen availability for the following corn crop can be an issue, especially in years with large amounts of rye biomass.

4. Planting cover crops can reduce the risk of nitrogen loss from fall manure applications.

5. Modeling can generate field-specific estimates of nitrogen loss without intensive water sampling.

Theo Gunther, A New Low-Cost Tool for Nitrogen Evaluation
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1. 360 Soilscan machines are an option available to test soil and water nitrate concentrations.

2. If considering edge-of-field practices or cover crops, measuring the status of nitrate in tile lines can help prioritize which outlets and fields are best candidates.

3. Maintenance and use of calibration standards will improve interpretation of results.

4. Rye cover crops create low soil nitrate conditions in early spring. When planting corn, adjust fertilizer management to address this condition.

5. It is not necessary or feasible to assess nitrate in soil and water for all fields, but it can provide feedback on the effect of some conservation practices.