Managing High Fertilizer Prices

4R BASICS | **Written by PA4R Partner, Eric Rosenbaum of Rosetree Consulting LLC**

Often, the biggest return on investment on a farm comes when the operation is not only good, but *great*, at doing fundamental things. Things like placing a corn seed uniformly & consistently 2" deep at the right population, or using yield data to make variety decisions, can have the greatest impact on yield & profit. Think of fertility decisions in the same way.

Be *great* at fertility fundamentals – the **Right Source** of fertilizer or manure, applied at the **Right Rate** to maximize yield, applied at the **Right Time** & the **Right Place** for maximum uptake.

Here's where to start:

Soil Testing

The most fundamental 4R fertility tool, soil testing should occur **at least once every 3 years**. At Rosetree Consulting, we prefer to sample once every 2 years to make sure fertilizer decisions are made with current information. Current information is critical for monitoring pH, phosphorus and potassium levels in the soil and making the right fertilizer recommendations for your yield goal. Have large fields? Consider precision soil testing like grid or zone sampling to manage variability. If you have not taken soil tests recently there is still time – reach out to your trusted CCA today!

Manure Testing

If you apply manure, how will you know the nutrient contribution of your manure application unless you have a current analysis for it? **Don't rely on "book values."** Manure analysis can vary widely based on animal diet, method of storage, bedding usage, washwater & rainfall contributions and moisture. If you're importing manure from a CAO or CAFO operation, ask them for the analysis – they're required to sample manure annually. For non-regulated farms, we recommend sampling each manure source every 1-2 years to ensure manure contributions are accurately calculated. Analyze manure for Ammonia Nitrogen, in addition to Total Nitrogen, Phosphorus and Potassium.

Nutrient Planning

Success does not happen by accident – it is planned. **Start with a reasonable yield goal.** Then, calculate nitrogen contributions from all nitrogen sources assuming 1-pound of nitrogen is needed for every bushel. Subtract contributions from current manure applications, historic manure applications, legume contributions, cover crop contributions and soil organic matter. Include planned starter fertilizer applications. The number that remains?? That's the amount of nitrogen fertilizer you'll need. If it sounds like an Act 38 Nutrient Management Plan calculation, it is! It's the same tried & true method trusted by agribusiness & regulators to calculate nitrogen needs.

Use ALL the "R's"

You used a planning tool to calculate the Right Rate of fertilizer. Great! Now, think about the other R's – Source, Time & Place, to **maximize nutrient uptake & the impact of your fertilizer dollar.**

Source – Use nitrogen stabilizers with all broadcast applications to reduce nitrogen loss. Think about foliar fertilizers to offset broadcast needs.

Time – Avoid pre-emerge broadcast applications of nitrogen. Shift applications to match crop uptake through one or more sidedress applications.

Place – Place nutrients where roots can get them. Manure injection can double nitrogen retention from liquid manure and nitrogen banded with your planter is more efficient than broadcast nitrogen.

RIGHT **Rate** | RIGHT **Source** | RIGHT **Time** | RIGHT **Place**

Talk to your trusted CCA today to discuss

4R Nutrient Stewardship

on your farm!

PA4RAlliance@gmail.com | 4RMidAtlantic.com