Corn Approach and Budget

We can approach regenerative corn crop nutrition in a number of ways, from individual applications to a full, customized nutritional program. Each application below is a part of a comprehensive approach, and each may be used as a standalone treatment. They are arranged, in order from the top, by greatest potential return on investment and ease of implementation, not according to seasonal timing. Estimated costs per acre are based on an average 80 acre field.

1. **BioCoat Gold Mycorrhizal Seed Coat: $2.70-5.40 per acre** (depending on seed weight and planting population).
   The most cost-effective step into regenerative agriculture is to use our dry seed inoculant **BioCoat Gold**. In addition to assisting early germination, seedling vigor, and root development, BioCoat Gold contributes to greater nutrient uptake and drought resistance and is the easiest way to establish beneficial bacterial and fungal species throughout your fields while you are planting seeds. There is no additional equipment needed; simply mix the BioCoat Gold powder dry onto seeds before planting. BioCoat Gold can still be used to good effect on seeds treated with fungicides.

2. **Nitrogen Efficiency for Corn** is calculated according this formula:
   - X= total amount of nitrogen product, not units of N
   - Maintain 10:1 nitrogen to sulfur ratio
   - 1 pint **Rebound Molybdenum** (per acre)
   - 3% of X as **Humacarb**
   - 3% of X as **Rejuvenate** (optional)

   The **Nitrogen Efficiency Application** makes best use of one of your largest and most expensive inputs. It complexes N with soil biology and the right mineral balance to provide slow release according to crop demand. This can reduce the dependency and cost of synthetic nitrogen inputs while still allowing biology its best chance for symbiotic function with plant roots. While it is not realistic to make universal recommendations given the wide variability in soils, crops, and management practices, we do commonly observe that many growers are able to reduce nitrogen application rates by 30%-50% from typical recommendations in the first year and produce the same or higher yields, compared to controls. This calculation works in the majority of situations, yet the specific application rates may vary according to need.

In the majority of sap results we have seen, corn rarely needs supplemental nitrogen prior to V5, when rapid vegetative growth commences. This depends on cover crop residues, moisture, etc. Moving or reducing preplant/at-planting N to later in the season, in multiple smaller applications, is a key part of any N efficiency program and will result in major cost savings. Use sap analysis and other data to diagnose precisely whether the crop has adequate N.

3. **Corn Planter Solution: $35-45 an acre.**
   If your planter is set up to apply liquid nutrition, use this opportunity to build biological health from germination onward. The single simplest product to use here is AEA's **Planter Solution**. This is an all-around booster of both macro- and micronutrients and includes a carbon solution that helps to create a biologically active mineral environment around the seed and root zone. Planter Solution can be applied in-furrow, 2x2, or banded over the row and is compatible with, and can replace, many other in-furrow materials. Rates of 4 to 6 quarts per acre are effective depending on need and other materials in the planter. One gallon is often adequate, and is improved with 2 quarts of **Rejuvenate**.

4. **V4-V7 Foliar Application: $38-$45 per acre.**
   Foliar applications are a highly effective way to bring new energy into the ecosystem and bridge nutritional gaps for plants because of its very high impact on future yield potential. A basic application rate is 3-4 quarts of **Forage Foliar** blend plus 1 gallon of **Accelerate**.

5. **Plant Sap Analysis: $95**
   Plant Sap Analysis results help growers gain the confidence to make calculated changes in their fertility program. A first young leaf sap sample at V2-3 provides an early look at your planter program's success and can be valuable, but a full young and old leaf sap test at V5-7 is critical. This test timing can inform at least one foliar before the corn is too tall for low sprayers. For those with the ability to spray later in the season, one or two more sap sets later in the season allow fine-tuning of nutrition during pollination and grain fill. Use sap analysis to identify the greatest limiting factors in your crop, then apply foliar nutrients and side-dress nitrogen as needed. AEA has developed recommendations for an early season application before sap testing is available, often including manganese, iron, calcium and boron. Each sap test set costs $95, or less when ordered in bulk, and can generate data for an entire field if all of the same variety and similar soil type.

6. **Tasseling and grain fill foliars** *informed by sap analysis* provide a strong potential for yield, by impacting kernel length and test weight, as well as protein and vitamin content. There is evidence that by delaying black layering, we can dramatically increase yield, up to 5 bushels a day for each day delayed. See John Kempf' Regenerative Agriculture Podcast episode with Michael McNeil: **Disease Resistance and Regenerating Soil with Michael McNeill.**

7. **Regenerative Soil Primer: $52-70 an acre.**
   The most effective step toward long-term soil regeneration independent of crop-type, is to start in the fall with the **Regenerative Soil Primer**. This builds soil by increasing microbial digestion, building long-chain carbon structures, sequestering nitrogen, and recycling nutrients like phosphorus and essential micronutrients—all this can point to a decrease in your input costs for subsequent seasons. For corn, a reasonable rate is 4-6 quarts of **Rejuvenate** and 4-6 quarts of **SeaShield,** along with 50 grams of **Spectrum** per acre.

We understand that decisions are often compelled by the budgeting considerations between this year's crop and long-term soil-building. Because many markets do not reward increased quality and conventional commodity prices are beyond growers' control, the cost of our complete corn program averages under $120 an acre. Where the grower stands to benefit from organic or food-grade premiums, future soil health, and corn nutrient content, even more gains can be achieved. Suitability on your operation depends on when during the season you start working with us, equipment availability, and your goals.