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Growing season 2020 is upon us and hopefully all is well and this is the only case of Corona you may encounter this year. All jokes aside, I have recently gotten a window of opportunity to write about a subject I have been wanting to tackle for a while now. My basic checklist of things a grower needs to do to raise a high yielding corn and soybean crop. Now to make this article as short as I can, I will be going right into it with the checklist. It must be noted that I will not be going into exhausted detail on every step needed as every farm operation is different so I will be keeping this as general as possible.

Chem Gro High Yielding Corn Checklist

1. Soil Test
    a. Grid Sampling- In order to adequately account for every bit of the fields needs we need accurate tests throughout the field in a way that we can address the needs of those portions
2. Adjust Field pH- Soil pH is essential not only for nutrient availability but herbicidal performance
3. Fertilizer for P and K- optimal soil test P and K readings are 45 and 350 respectively. When fertilizing for these tests we make a 4-year plan which allows us to reach those levels. Once we have accounted for any soil test build needs, we must account for crop removal. Corn removes 0.38# of phosphorus per bushel and 0.27# of potassium per bushel.
4. Plan for Secondary macronutrient and Micronutrient needs:
    a. Calcium
    b. Magnesium
    c. Sulfur
    d. Zinc
    e. Boron
    f. Manganese
    g. Molybdenum
    h. Iron
    i. Copper
5. Nitrogen management plan
    a. Fall applied anhydrous ammonia- Make sure to use a nitrogen stabilizer such as N-Serve or Centuro.
    b. Spring applied anhydrous ammonia- Nitrogen stabilizers might not seem to make much sense in this situation but our nitrogen has a long journey to make it into the plant.
    c. Starter Nitrogen- Watch out for how many credits of nitrogen you put in furrow and in a 2x2 position as excess nitrogen could damage a seedling.
    d. Sidedress- Both anhydrous ammonia and 32% UAN can be used. 32% UAN can also be used to apply other nutrients such as sulfur and micronutrients.
    e. Topdress Nitrogen
    f. Y-drop Nitrogen- 32% UAN is the main source of nitrogen and should be applied at 6 to 8 leaf collars.
6. Hybrid selection- Choose the right hybrid for your field
7. Seed treatment- Most corn comes pretreated with fungicide and insecticide with more and more now being treated with biologics and biostimulants.
8. Chemical program- 2 passes is always preferred to allow for burndown if necessary and a 2nd pass to clean up any escapes. Remember, start clean stay clean.
9. Equipment maintenance- Proper planting depth of 1.5”-2”
10. Planting date- Soil temperatures averaging 50 degrees and relatively warm moisture to the seed the first 48-72 hours after planting is critical for crop growth.

11. Plant population- Contact your seed dealer for more info
12. Scouting- The most successful growers and in the nation have 1 thing in common, they all scout their fields religiously.
13. Tissue testing- Early season tissue testing can give indication of deficiencies and late season tissue tests will indicate which nutrients need to be adjusted before the corn plant enters its reproductive phase.
14. Consider a fungicide or biostimulant- Both chemicals are designed to reduce crop stress and keep the plants healthier longer.

Chem Gro High Yielding Soybean Checklist

1. Soil Test
    a. Grid Sampling- In order to adequately account for every bit of the fields needs we need accurate tests throughout the field in a way that we can address the needs of those portions.
2. Adjust Field pH- Soil pH is essential not only for nutrient availability but herbicidal performance.
3. Fertilizer for P and K- Soybeans removes an average of 0.85# of phosphorus per bushel and 1.3# of potassium per bushel. There is a common misconception that soybeans don't need phosphorus, this is a case of response vs removal. Soybeans don't typically respond with extra yield at phosphorus soil tests above 35 but they are a high protein crop which still removes phosphorus with grain.
4. Variety selection
5. Seed treatment- Fungicide seed treatments help stave off early season stresses and provide a more uniform stand. Sudden death seed treatments such as Ilevo or Soltero are also recommended to prevent late season yield loss.
6. Chemical program- Like corn, start clean and stay clean. Make sure to choose a herbicidal trait which is appropriate for the field you are planting your soybeans to. Non GMO soybeans have no post emergent herbicidal options which are effective so your best hopes are to have heavy residuals to prevent any weeds from even emerging.
7. Equipment maintenance- Proper planting depth of 1"-1.5"
8. Planting date- Soil temperatures averaging 50 degrees and relatively warm moisture to the seed the first 48-72 hours after planting is critical for crop growth.
9. Plant population- Contact your seed dealer for more info
10. Scouting- Again, keep track of your acres through scouting.
11. Tissue testing- Early season tissue testing can give indication of deficiencies and late season tissue tests will indicate which nutrients need to be adjusted while the soybean plant enters its reproductive phase.
12. Consider a fungicide or biostimulant- Both chemicals are designed to reduce crop stress and keep the plants healthier longer. In field trials we have conducted prove time and time again that soybean fungicides provide a positive return on investment.

Final Thoughts

When the idea of a checklist for high yielding was first proposed to me, I didn't know right away where to start for such a checklist and how to make it so that anybody can pick it up and start marking things off their list. In order to make things as simple as possible, I found it necessary to look at high yielding growers not only in our county but our nation and find out what all of them have in common. As with everything else in ag, there is no cookie cutter approach towards doing things and what is beneficial for one operation might not be that way for another. Like always, my job is to give you the best advice possible, what you do with it is up to you.