



**Thank you for downloading the Genesis Ag corn program!**

Since many people are curious how we are able to repeatedly break yield records in different environments, we are providing a full season corn program for your information. In addition to explanations for how the products work, we are also including the reasons/rationale for these applications and a wealth of knowledge that's taken many elite growers many years to accumulate.

But, before we dive in...

**SOME WORDS OF WARNING:**

**The full season corn program in its entirety will not be relevant to most growers.**

If you're like most people getting started, you will find a few products and timings from our full program that work for you and your operation. So, in addition to the Full Season Corn Program, we have also developed a First Steps Corn Program which can be viewed by clicking on the link:

[First Steps Corn Program](#)

The First Steps Corn program takes those things from the full program that are most applicable to the most growers and deliver the most consistent return on investment (R.O.I.) or "bang for the buck".

**The Genesis Ag corn program is not meant to be used as a full fertility program.**

Due to individual differences between farms, we cannot offer blanket advice on what to apply for baseline fertility. The Genesis Ag products should be viewed as an addition to your baseline fertility, and as your biology starts to function more efficiently, you should be able to slowly reduce some of your traditional inputs.

**Getting Started:**

**Treating the seed.**

		oz/unit	\$/unit
Invigor 8	Accelerates Germination and Seedling Emergence	0.8	\$ 17.00

**Invigor 8™** is Genesis Ag's seed treatment we recommend for corn. The benefits of **Invigor 8™** include:



- Increased germination
- More even & vigorous emergence
- Higher yields

The product “works” by a combination. First, higher germination rates mean more plants in your final stand. In addition, a more stand means a reduction in the number of “runt” plants, or corn plants that aren’t on pace with their neighbors. Together, these two factors mean you can expect somewhere between a five to 15 bushel yield increase.

Environments where **Invigor 8™** tends to especially thrive, relative to a control or check plot, include cold and/or wet planting conditions in spring.

## **FAQ**

The seed treatment ships as a powder and must be dissolved into distilled or de-ionized water before being applied to the seed. Applications can take place through either a commercial seed treater, a box-to-box treater for those treating seed to be planted out of a pro-box, or by hand one bag at a time. Treating the seed by hand one bag at a time is the most time-consuming option but makes sense for those without access to a commercial treater or wanting to spread the application across several hybrids. A video of the process for treating the seed in smaller quantities can be seen here:

<https://www.youtube.com/watch?v=hfBtWI-h-ll>

You can treat your seed days, weeks or months in advance of planting.

One pound of **Invigor 8™** will treat twenty 80,000 count seed bags or “units” of corn seed.

**Invigor 8™** comes in one pound (20 units) and 2.5 lb (50 units) packages.

For treatment rates for cotton, sorghum, sunflower, or other crop seeds, please consult the product label. To check out the price and availability or to purchase online, click here: <https://www.genesis.ag/product/invigor-8-seed-treatment/>

## **(Optional) Broadcast Pre-plant**

We’ve noticed that the most dramatic impacts to a corn plant’s yield often come very

early in the growing season. Sometimes, dramatic impacts come from things that happen before the season even starts, like treating the corn seed, and preparing your soil.

An optional pre-plant broadcast is less common than seed treating but can be an important part of preparing a soil to handle higher yields -- especially when breaking through yield barriers.

While not part of our standard Full Season corn program, a pre-plant broadcast may include one or more products from the following list:

- **Carbose**
- **Revita-N**
- **Morphos**
- **Humin Resources**
- **SilaKate**

I've included a brief description of these products and their purpose in a pre-plant broadcast here for completeness.

**Carbose** is a relatively inexpensive “generated sugar-source”. Progressive growers are starting to recognize yield benefits from feeding their soil’s microlife with readily available energy sources, like sugar, molasses, etc.

**Carbose** has four different kinds of sugar, but what makes **Carbose** special are the microbes in the product that will scavenge from the environment to continue to make sugars for your microlife long after you’ve left your field. It’s like installing tiny microbial sugar factories in your field.

**Revita-N** is the granddaddy of our microbial products. It boasts a combination of Aerobic and Anaerobic species; bacteria, beneficial fungi, actinomycetes, algae, amoebas and protozoans. When applied to a field, especially in conjunction with **Carbose**, it sets the groundwork for revitalizing biologically depleted soils and jump-starting beneficial biological processes by installing a thriving soil food web.

Revita-N’s benefits cannot all be observed in the first year of application. There are significant carry-over benefits in yield and the ability to reduce fertilizer applications as the new biology installed with an application of Revita-N will continue to fix Nitrogen out of the air for seasons to come. Revita-N will reduce your crops reliance on artificial fertilizers by creating stronger, healthier plants. Revita-N will feed your crops biological amino-acid N, fixed from the atmosphere and fed to your plants’ roots from the remains

of nitrogen fixing bacteria deposited in the rhizosphere (against the plants roots) after microbial digestion by a protozoa.

**Morphos** is a biological amendment specifically designed for making Phosphorus more available in soils that have a difficult time with nutrient tie-up. Certain high Calcium or Magnesium soils can quickly tie up applied Phosphorus making it unavailable to the plant. By some estimates fully 95% of Phosphorus uptake in plants must first be mediated by a microbe. **Morphos** is your team of microbes, specially trained to go out, unlock Phosphorus, and bring it to the plant in readily available form.

**Humin Resources** is an amendment designed to address many of the most pressing nutrient needs we see in commercially farmed soils which can depress the microbial life, and thus nutrient uptake, in your fields. Many of the micronutrients included in Humin Resources are elements which have long been ignored in our soils and repeated soil, tissue and sap testing are indicating that these nutrients are what are capping our yields at their current level.

**SilaKate** is a readily available form of Silicon for our soils, micro-life and plants. Ironically, while silicon is one of the most abundant nutrients in the earth's crust almost all of it is locked up and unavailable to our plants microbes and plants. Significant benefits to soil aggregation, microlife, stalk strength, sap pressure, pest and disease resistance, and yield have been observed with applications of **SilaKate**. In addition, **SilaKate** can have a beneficial impact on soils prone to crusting when applied close to emergence.

## Corn In Furrow

		oz/acre	\$/acre
<b>Carbose</b>	<b>Highly Concentrated Energy Source</b>	<b>4</b>	<b>\$ 1.66</b>

If you have the ability to apply liquids in furrow on your corn plant, we see some of our most consistently significant yield benefits with biological applications at this stage.

The early application follows our philosophy of trying to impact the corn plant early. In addition, by placing the biology in furrow we are able to impact the root zone of that plant -- where all the action is happening -- while spending a lot less money than trying to impact an entire field's biological activity.

The downside of only running biologicals in furrow rather than a broadcast, of course, is that carry-over benefits, like those seen with whole field applications of products like **Revita-N** and **Morphos**, are not as pronounced. But, for many growers, who are renting

ground or on short-term leases it's a way to enjoy the immense benefits of biologicals without leaving money in your landlord's field for the next renter.

**Carbose** - The role of **Carbose** here is to act as a food source for the hungry native microbes in your seed trench, and those we are applying in a product like **Zenergy**.

## FAQ

The most frequent questions regarding our biologicals in furrow take the form of:

Can it mix with \_\_\_\_\_?

The general answer to this question is "yes".

The products have been designed with commercial agriculture in mind. They are not as sensitive to being tank mixed with other chemicals as many less sophisticated microbial solutions. However, your chances of maximizing your biological's effectiveness will be enhanced if you follow these simple rules:

1. When possible, use low-salt fertilizers as your starter.
2. Check your tank mix for variations in pH when in doubt. Your microbes will do best in a neutral pH, closer to 7.
3. Buffer in furrow biologicals like Carbose and Zenergy with a little bit of water. Around one ounce for every 12 ounces in Carbose and Zenergy will help them mix with other tank mixed products.
4. Put your Genesis Ag biologicals into the tank last before going to plant.
5. While there have been some reports of the biologicals lasting in a tank for days, try to plant the same day you place your products in their tank and do not leave sitting in direct sunshine while being stored in the tank. Excessive temperatures can start a fermentation process that will render some of the products unstable or unusable.

## (Optional 2x2 at Planting)

Some growers have the ability to place a strip of product "2x2" or (approximately) 2 inches off the side of the seed trench and 2 inches below the seed. The idea is that products can be placed there that might otherwise interfere with germination but that the seedlings' roots will intercept very quickly after germ.

Some growers, especially those that don't broadcast or run our biologicals in furrow, have used **Revita-N** in their 2x2.

## **V3 Foliar (250 to 350 GDU's)**

		oz/acre	\$/acre
<b>Carbose</b>	<b>Highly Concentrated Energy Source</b>	4	\$ 1.66
<b>VitaNterra+</b>	<b>Liquid Humic &amp; Fulvic Acids Containing Enzymes</b>	16	\$ 4.50
<b>Microboom</b>	<b>Micronutrient Package</b>	16	\$ 8.40

V-3 is an important time in the corn plant's life. The corn plant has just started really photosynthesizing and living off of its surrounding environment. Importantly, it's also sensing its environment and making important determinations about just how aggressive it wants to be in its reproductive phase of growth (when all the grain gets made).

It's an important time to make the corn plant, perhaps, believe that it is in a better environment than it actually is.

To that end we want to foliar on a combination of sugars, and sugar creating microbes, fulvic, humic acids, enzymes, and a balanced application of micro-nutrients and trace elements. These micro-nutrients and trace elements are many of the "forgotten" nutrients when we fertilize our fields, but each of those has a distinct purpose for the corn plant. And, some of them, have multiple purposes.

Our testing has shown that it is best to apply these without interference from other products. And, that includes, NP&K.

When applied with NP&K, the monovalent cation (positively charged cation) K<sup>+</sup> and the monovalent anion (negatively charged ion) nitrate are taken up preferentially by the plant and move across the soil/root gradient more readily than the ions with more complexity, like the host of divalent cations that make up many of the chelated metals in the **Microboom** product.

**Microboom** is a mix of 8 different micronutrients. Many of the micronutrients in **Microboom** have been chelated. Chelation provides a protective "shell" around the positively charged molecules making them effectively charge neutral, and keeps them from being hung up on the leaf's surface and keeps them from being tied up in the soil with other molecules. The nutrients stay in a plant available form.

The elements in Microboom make up many of the nutrients that are deficient in commercially farmed fields, and deficient in early tissue and sap tests. The eight micronutrients include:

1. Magnesium
2. Sulfur
3. Boron
4. Copper
5. Iron
6. Manganese
7. Molybdenum
8. Zinc

**Carbose** is used to enhance uptake through the plant's leaves, and to increase microbial populations in the soil. Where the foliar application hits the soil, we want to increase microbial digestion and encourage the integration of the micronutrients into the bodies of microbes where they will not be lost to tie-up or leaching.

**VitaNterra+** increases the uptake of nutrients and transport through cellular walls. In addition, it is a valuable microbial food, and excellent chelator, discouraging the tie up or environmental loss of important nutrients in the soil.

In addition, **VitaNterra+** is a valuable source of trace elements and plant growth promoting enzymes.

**Immerse** is a valuable source of balanced micronutrients and trace elements. **FAQ**

*The plants are still quite small. What about all the spray that hits the soil?*

This is to be expected and it is actually beneficial that some of the nutrients, like Boron, come up into the plant through the roots and into the xylem (tissue that moves nutrients up into the plant). Many of the elements in Microboom have been chelated which will keep them from tying up in the soil and keep them available to the plant's roots.

*Can I do this application with my herbicide pass?*

While this can be done, and has been done by many, it is probably a bad idea to combine these two passes.

One of the most popular Glyphosate and its generic versions, work by chelating divalent cations and rendering them unavailable to the plant, like:

- **Zinc**
- **Iron (2+)**
- **Manganese**
- **Copper**

The detrimental effects of combining these two passes (a micronutrient foliar and a glyphosate pass) is two fold:

1. The micronutrients, even if they get into the plant, could be tied up and thus not available to the plant (even though they show up in tissue tests), and
2. Your glyphosate will be occupied by nutrients it found in the spray tank and will be less effective at killing your weeds.

### **V5 Foliar (500 GDU's)**

		oz/acre	\$/acre
<b>Carbose</b>	<b>Highly Concentrated Energy Source</b>	<b>4</b>	<b>\$ 1.66</b>
<b>VitaNterra+</b>	<b>Liquid Humic &amp; Fulvic Acids Containing Enzymes</b>	<b>16</b>	<b>\$ 4.50</b>
<b>Microboom</b>	<b>Micronutrient Package</b>	<b>16</b>	<b>\$ 8.40</b>
<b>Immerse</b>	<b>Soluble Sea Minerals</b>	<b>16</b>	<b>\$ 3.63</b>

At approximately 500 GDU's many hybrids are, once again, making important distinctions about how aggressive they will be during their reproductive phase. Many people believe that this is when the corn plant determines how many rows around to put on its ears. Whether it is at 500 GDU's or earlier, we have found yield benefits at making sure that they plant is not lacking anything at this critical growth stage. Again, we are trying to "trick" the plant into thinking it's in a better environment than it is, so it will maximize its attempt to reproduce and provide grain.

### **Foliar at 750 GDU's**

		oz/acre	\$/acre
<b>Carbose</b>	<b>Highly Concentrated Energy Source</b>	<b>4</b>	<b>\$ 1.66</b>
<b>VitaNterra+</b>	<b>Liquid Humic &amp; Fulvic Acids Containing Enzymes</b>	<b>16</b>	<b>\$ 4.50</b>
<b>SilaKate</b>	<b>Plant Available Soluble Silicon</b>	<b>12.8</b>	<b>\$ 13.70</b>

At 750 GDUs we want to go back over the crop with:

- **Carbose**



- VitaNterra+
- SilaKate

**SilaKate** is a source of soluble silicon. While we wrote something about it about in the **(Optional) Broadcast** section above, we will add a bit here:

While much of the earth's surface is full of silicon, much of it has been rendered unavailable to plants, like sand, which inert as SiO<sub>2</sub>. Soluble silicon, like that found in **SilaKate**, is rare in soils and even in silicon based amendments. Many people are not aware of silicon's benefits to plants, and many labs don't even bother testing for it in soils or tissue. However, it plays an important role in soils and in plant physiology.

To go into all the benefits silicon plays in plant physiology would go beyond the scope of this document, but it plays an important role in:

1. Xylem and plant transport system, including sap pressure
2. Connective tissues in plant
3. Energy transport system from photosynthetic "source" to storage "sink"
4. Strength of cell walls and importantly resistance to insect and fungal injury
5. Resilience in the face of drought conditions

Importantly, many of our agricultural soils have become degraded in soluble silicon. Not much research has been done to determine the cause of this degradation, but we frequently see astounding yield benefits from very small applications of soluble silicon like that found in SilaKate.

### Foliar at 1000 GDU's

		oz/acre	\$/acre
<b>Carbose</b>	<b>Highly Concentrated Energy Source</b>	<b>4</b>	<b>\$ 1.66</b>
<b>VitaNterra+</b>	<b>Liquid Humic &amp; Fulvic Acids Containing Enzymes</b>	<b>16</b>	<b>\$ 4.50</b>
<b>Immerse</b>	<b>Soluble Sea Minerals</b>	<b>16</b>	<b>\$ 3.63</b>
<b>Sentry</b>	<b>Plant Health Benefactor</b>	<b>40</b>	<b>\$ 1 4.38</b>

**Sentry** is a potassium phosphite product that works by increasing the plant's natural ability to defend itself against pathogenic attack.

Rather than how traditional fungicides work, **Sentry** works by increasing the strength of the plant's own immune system.

### Foliar at Brown Silk

		oz/acre	\$/acre
<b>Carbose</b>	<b>Highly Concentrated Energy Source</b>	<b>4</b>	<b>\$ 1.66</b>
<b>Sentry</b>	<b>Plant Health Benefactor</b>	<b>40</b>	<b>\$ 14.38</b>

For those growers able to get out over their crops at Brownsilk, and especially those who live in regions prone to fungal disease we recommend another application of **Carbose** and **Sentry**.

### Foliar 2 Weeks After Brownsilk

		oz/acre	\$/acre
<b>Carbose</b>	<b>Highly Concentrated Energy Source</b>	<b>4</b>	<b>\$ 1.66</b>
<b>Sentry</b>	<b>Plant Health Benefactor</b>	<b>40</b>	<b>\$ 14.38</b>

For those growers able to get out over their crops two weeks after Brownsilk, and especially those who live in regions prone to fungal disease we recommend another application of **Carbose** and **Sentry**.

### Wrapping It Up

Congratulations! If you have further questions about either our full or “first step” crop programs we are here for you. We can be reached for advice or assistance in tailoring a program that will meet your needs either by emailing [info@genesis.ag](mailto:info@genesis.ag) or phoning 844-455-5511.