

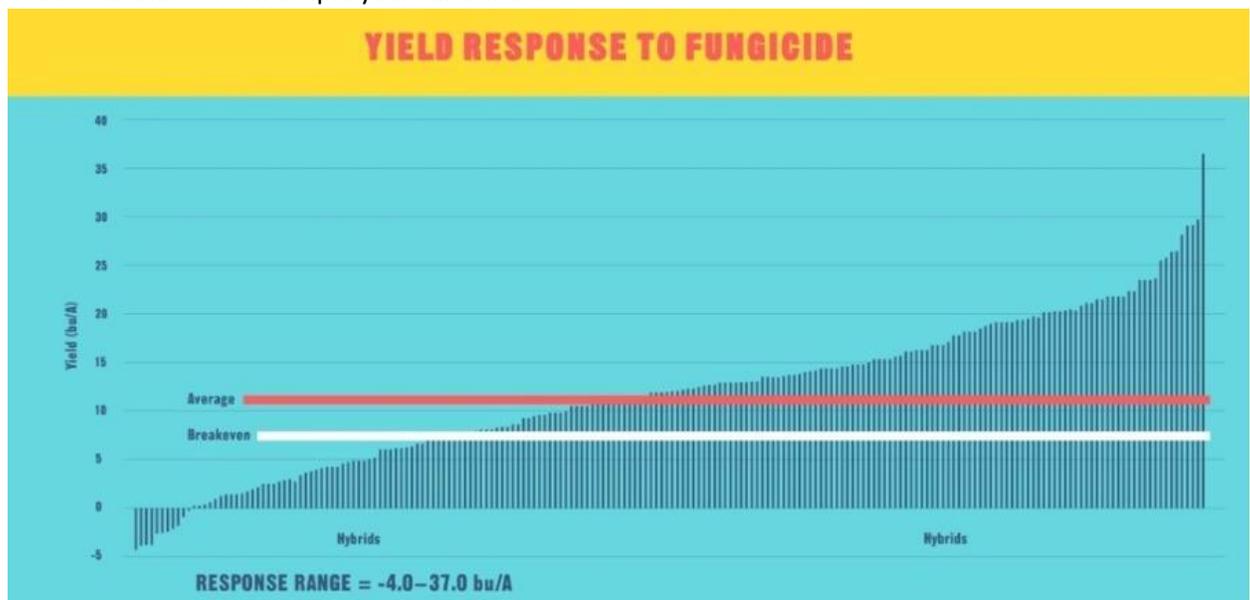
Corn Fungicide Facts

The use of fungicides in corn is becoming an ever more popular treatment to 'increase' yields of corn as well as other crops. While it has been proven that the use of a fungicide can help prevent a yield loss, not all acres benefit from fungicide use for a variety of factors.

1. **Environment.** By far the most important factor to consider with fungicide use. If you consider that 3 conditions need to be met to induce disease formation.
 - a. The first condition is the host crop. Always present!
 - b. The second condition is the presence of the disease. Nearly always present!
 - c. And the third condition is the environment. Un-predictable depending on disease, so is often referred to as the key condition.

Diseases differ in their favorable development conditions, so it is common to find some disease development throughout a season.

2. **Genetics.** Plant breeders have strived to find natural resistance and/or tolerance to certain diseases. This is the reason why we do not always encounter a disease every year on every acre. In addition, the prevailing genetics in a region often include the genes responsible for suppressing the common disease found in the region. Reference to your seed guides will often give you an idea as to what to expect from your varieties response to certain diseases.
3. **Timing.** Corn stage development timing will help ensure optimal response to fungicide usage. Because tasseling is one of those critical growth stages, many foliar fungicides are targeted to this time period. By keeping the corn plant health during this stage, more ovules are pollinated. The fungicides also help with water retention and keeping photosynthesis more active helping fill the extra ovules into a kernel. In addition, fungicides will slow down the aging process allowing more fill time in the kernel development.
4. **Yield Response.** When considering the above factors, yield responses will vary. The generally accepted response is 80-85% positive yields. The graph below is a compilation of fungicide use in various trials over multiple years and sites:



There are considerations that we can draw from this chart.

- a. **There will be negative yield responses.** This occurs because, despite our intentions of doing the 'right thing', timing of events after application can influence the crop development.
- b. **The Breakeven Point.** This represents the cost of product and application as a value against the crop value. Yield response levels below are not cost effective.
- c. **The Average.** This represents the average yield response across all applications for the product use.
- d. **What we don't know.** We do not know what the yields were for the various hybrids with and without applications. For example: the 37 bu. per acre. Does this come from a low yielding environment or a high yielding environment? So, when considering the average of 11 bu. per acre as shown, we can ask, what was the average yields across all trials. Example: $11\text{bu} / 100\text{bu per acre} = 11\%$ yield increase, whereas $11\text{bu} / 200\text{ per acre} = 5.5\%$ percent yield increase.

When considering using Fungicides on your crops it is important to remember that they need to be applied before diseases are present.

“Fungicides will not make poor crops good, they make good crops better”