The Upcoming Battle with the New Goss’s Wilt – Spring and Summer 2017
Bob Streit  CPCS, CCA  Boone, IA

As the 2017 corn planting and growing season arrives more growers are remembering the early death of their corn crops in the 2009 thru 2015 seasons. The later death (9/6) in 2016 resulted in their higher final yields. They realize they have seen it, the yields did not meet expectations and they often saw severe stalk lodging during that time period. None of their typical sources of information: their fertilizer and input suppliers; seed company agronomists; and Ext reps have not provided insightful answers or offered curative steps to control or minimize its impact. Farmers recognize it’s having an effect on their crops and income and need to know facts with accompanying recommendations to avoid the problem.

The ‘old Goss’s Wilt’ first appeared in the late 1960s in 8 western NE counties plus 2 in eastern CO until 2009, when it moved east to PA and north to Manitoba. It previously was a slow moving bacterial disease that appeared after a wind or hail storm that caused damage and entry into the corn leaves and stalks. It increased greatly in the incidence with the fields it was in and the severity it affected those plants. Its biology changed and that is part of the story. The typical symptomology was an orange/red flashing of the upper leaves followed by the appearance of watery, freckled lesions on the leaves followed by them drying down prematurely. It used to be problematic in second year corn where the inoculum overwintered on corn residue. What an investigative team found over 16 years was that a metallic crystal or biomatrix was present. A low mineral environment caused partly by reliance on an N-P-K only fertility programs and too much emphasis on chelating, biocidal herbicides were creating an environment for the biomatrix to form.

The ‘New Goss’s Wilt’ can produce the same foliar symptoms, but more often appears as caramel colored lesions appearing at ground level at V8 to V10 when the V3 or V4 leaf sheaths begin to slough off the stalk. Those leaves or stalks will show a brown mottling ranging from faint to very pronounced in color and appearance. Rookies scouting for the lesions should buy $5 strip test kits from Ag Diagnostics of Elkhart, IND to help them make the first diagnoses. In time they won’t need the strip kits. In wet or dry years there is enough dew to help the bacteria multiply and begin to cause problems. Later in the summer large brown or blackish fingerprint-like lesions will appear on the stalks. These have often been identified as Anthracnose.

As the plants grow and bacteria inside the stalk multiply, the stalks become progressively plugged at the nodes. Splitting the stalk lets you detect a brown or black layer at the lower nodes plus browning in the crown region of the roots. This plugging by the bacteria and the biomatrix continues during the summer until a hot, dry and windy with low humidity, 3 to 7 day period in mid to late August creates large water and mineral demands in the upper plant the plumbing system can’t meet and entire fields die in 1 to 3 days. The plants turn almost white and die from the top or bottom. Late season N shortages accentuate this as there can be cannibalization occurring in the upper leaves. The second ears often turn brown, mushy and stinky.

Growers and plant researchers have found that applying micronutrients at planting and during the season pays if leaf streaking and tissue analyses verify mineral deficiencies. Biologicals applied in-furrow to facilitate mineral uptake are important. The best product to fight Goss’s is a nutritional based Bio Empruv coming from a Utah biochemist, fermentation lab. We are recommending it be applied in stages: first at planting or thru V5-7, then again at V14 to VT. It acts systemically and lasts 2.5 to 3 months on the plant. Argosy polymer offers watering. Foliar NH3 can also help fight the bacteria. Consider canopy coverage and how growth dilutes it. In 2015 trials the fields stayed green to fill another 3 to 4 weeks, adding 20 to 33% more days of grain fill plus improved standability. BE is a safe product that can be tank mixed with other products (insecticides or fungicides) if desired. Too often corn growers have tried to fight this bacterial disease with fungicides, which proved futile. The surfactants (sorbitol) in fungicides can increase the threat of bacterial infection by providing cuticle penetration. Grain drydown also improves. Bio Empruv will be limited again in 2017, so growers need to order and place a deposit soon on this high ROI product.