

ISOXAFLUTOLE + CYPROSULFAMIDE, THIENCARBAZONE + ISOXAFLUTOLE + CYROSULFAMIDE: PERFORMANCE IN UNIVERSITY CORN TRIALS. Kevin K. Watteyne\*, Tate Castillo, John R. Hinz, Brent Philbrook and James R. Bloomberg, Bayer CropScience, Research Triangle Park, NC 27709.

Balance WDG (Isoxaflutole) was introduced into the corn market during 1999, with widespread acceptance to a new-mode of action in grass and broadleaf control in the Midwest corn market from pre-emergence applications. Balance Pro, a liquid formulation of Isoxaflutole was later introduced with the same consistent results that had been experienced with Balance WDG. In late 2008, Balance Flexx (Isoxaflutole + Cyprosulfamide) and Corvus (Thiencarbazone + Isoxaflutole + Cyprosulfamide) received EPA registration and were successfully launched into the corn market in 2009.

Balance Flexx and Corvus both contain Cyprosulfamide, an exclusive Bayer herbicide safener technology that makes Crop Safety Innovation (CSI) possible. CSI has both soil and foliar uptake allowing both products to have excellent crop safety from pre-emergence to early post emergence (V2) applications in corn. Both products control approximately 90 broadleaf and grass weed species including ALS-, triazine-, and glyphosate- resistant weeds. Balance Flexx and Corvus & Balance Flexx still have the unique power of re-activation after subsequent moisture with excellent burndown capabilities. Both Balance Flexx and Corvus use low use rates-apply ounces vs. pints and quarts with other pre-emergence herbicides.

Corvus is a new one-pass corn herbicide containing two modes of action. The first, known as a bleacher (isoxaflutole), inhibits the HPPD enzyme in the plants. HPPD is key to the production of protective pigments in the plants. The second, thiencarbazone, inhibits the acetolactate synthase enzyme, thus preventing the production of three essential branch-chain amino acids (thiencarbazone).

Studies were conducted in 2008 and 2009 by Bayer CropScience and all major Midwestern universities in major corn growing states. These trials confirmed the excellent crop safety of the products and the good to excellent activity on hard-to-control grass and broadleaf weeds and on herbicide-resistant weeds such as Palmer amaranth, marestalk and tall waterhemp.