

Sunflower (*Helianthus annuus* '63N82')  
 Target diseases: Downy mildew *Plasmopara halstedii*.

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### Syngenta sunflower downy mildew seed treatment performance trial near Dickinson, ND, 2010.

This experiment was conducted in a field located near Dickinson, ND (SW ¼, Section 36, T141N, R95W – Dunn County, ND). The previous crop was corn in 2009. The soil was a silt loam to fine sandy loam texture and the field had a history of sunflower downy mildew when it was last seeded to sunflower in 2007. A randomized complete block design with four replications was used. Plots were 2-row plots, 50 ft long. Prior to seeding, combinations and varying rates of Apron (mefenoxam), Maxim (fludioxonil), A9765, A12050, STP27399, A15945, A12050, A16148, STP15255, STP17182, and STP15142 were applied to the seed. An untreated check was not included with this study. Urea at the rate of 100 lbs/a (46 lbs/a N) was broadcast applied on 16 May followed by an application of glyphosate at the rate of 0.75 lbs/a to control emerged weeds. Plots were seeded no-till with a two-row, modified Allis Chalmers plate planter on 4 Jun 2010 at the rate of 20,000 pls/a.. Row spacing was on 30 inches. The stand was thinned by hand to 18,000 plants/a after emergence on 18 Jun. A post emergent herbicide, Express SG at the rate of 0.5 oz/a + Poast at 0.5 pt/a was applied on 9 Jul. Plant evaluations for sunflower downy mildew were made on 11, 18 Jun and 2, 16 Jul. Harvest was with a Massy Ferguson 8 XP combine on 16 Nov. See yield and test weight were adjusted to a 10% moisture basis. All data was statistically analyzed using SAS Statistical Software.

Soil temperature at the time of seeding was measured at 60.7°F. Rainfall occurred on 6 of the first 14 days following planting and 7 of the next 14 days after planting. Downy mildew was not observed in any of the treatments at any time during the growing season though trace amounts of the disease were observed in the surrounding field. No significant differences were detected in yield or test weight in this trial.

| Treatment                                | Rate<br>mgai/seed                | ----- Seed <sup>1</sup> ----- |               |
|--|----------------------------------|-------------------------------|---------------|
|  |                                  | Test wt<br>lb/bu              | Yield<br>lb/a |
| Apron, Maxim, A9765                      | .029,.0025,0.25                  | 29.5                          | 1844.9        |
| Apron, Maxim, A9765,A12050               | .029,.0025,.25,.025              | 29.8                          | 1781.0        |
| Apron, Maxim, A9765,A12050               | .029,.0025,.25,.1                | 30.6                          | 1922.9        |
| Apron, Maxim, A9765, STP27399            | 0.029,0.0025,0.25,0.1            | 30.5                          | 1635.2        |
| Apron, Maxim, A9765, STP27399            | 0.029,.0025,.25,.5               | 29.8                          | 1388.0        |
| Apron, Maxim, A9765, STP27399            | .029,.0025,.25,1.0               | 29.5                          | 1739.5        |
| Apron, Maxim, A9765, STP27399,A15945     | .029,.0025,0.25,0.1,0.025        | 30.4                          | 1594.9        |
| Apron, Maxim, A9765,A15945               | .029,0.0025,0.25,0.05            | 29.6                          | 1303.4        |
| Apron,Maxim,A9765,A12050,A15945          | 0.029,0.0025,0.25,0.025,0.025    | 30.8                          | 1401.2        |
| Apron,Maxim,A9765,A12050,A15945          | 0.029,0.0025,0.25,0.025,0.05     | 30.3                          | 1597.5        |
| Apron, Maxim, A9765,A12050,A15945,A16148 | 0.029,0.0025,0.25,0.025,0.05,0.1 | 30.7                          | 1761.1        |
| STP15255, STP17182,STP15142              | 0.25,0.169,0.058                 | 30.3                          | 1546.2        |
| Mean                                     |                                  | 30.2                          | 1626.3        |
| CV%                                      |                                  | 2.9                           | 22.0          |
| LSD 0.05                                 |                                  | NS                            | NS            |

<sup>1</sup>Seed yield and test weight are reported on a 10% moisture basis.