

# Corn Herbicide And Insecticide Precautions



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The commercialization of corn hybrids with “built-in” resistance to certain insect pests has greatly contributed to the decline in use of soil insecticides. Some farmers, however, are considering applying a soil insecticide at planting for control of “other” insect pests or for control/suppression of certain corn nematodes. Many insecticide choices are available to farmers, but several could restrict the use of certain corn herbicides. Specifically, using an organophosphate (OP) insecticide at planting or after corn emergence could restrict the use of herbicides that inhibit either the ALS or HPPD enzymes. The precautions and restrictions most often appear on the herbicide label and are due to the increased potential for corn injury following use of OP insecticides and ALS- or HPPD-inhibiting herbicides.

Why do certain combinations of OP insecticides and ALS- or HPPD-inhibiting herbicides

cause injury to corn? Most of these herbicides are systemic, meaning they move extensively (translocate) from their site of uptake. Translocated compounds often accumulate in areas of the plant undergoing active cell division (meristems). Both insecticides and herbicides are compounds foreign to the corn plant. The plant tries to defend itself against any potential injury a foreign compound could cause by rendering it inert, or nonphytotoxic. This process is commonly referred to as metabolism, or breakdown, of foreign compounds. A corn plant uses several different pathways to detoxify foreign compounds, but the OP insecticides and many ALS- and HPPD-inhibiting herbicides share a common metabolic pathway. When an insecticide or herbicide is present within the plant, the plant can usually metabolize the compound before it may cause any deleterious effects. However, if both insecticide and herbicide are present, the pathway cannot effectively metabolize both compounds. When this happens, corn injury can result.  $\Delta$

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Table 1. Corn herbicide label statements: Interactions with organophosphate (OP) insecticides.

| Corn herbicide                       | SOIL-APPLIED OP INSECTICIDES |        |        |         | FOLIAR OP INSECTICIDE APPLIED |        |             |            |
|--------------------------------------|------------------------------|--------|--------|---------|-------------------------------|--------|-------------|------------|
|                                      | Conover 1.5G                 |        | Thimet | Lorsban | Aster or Forbess              |        | Days before | Days after |
|                                      | Furrow                       | T-band |        |         | Furrow                        | T-band |             |            |
| <b>Metasulfuron and thiosulfuron</b> |                              |        |        |         |                               |        |             |            |
| Accent Q                             | No                           | No     | UCI    | UCI     | Yes                           | Yes    | 7           | 3          |
| Basis                                | No                           | No     | UCI    | UCI     | Yes                           | Yes    | 7           | 3          |
| Prequel                              | No*                          | Yes    | No*    | No*     | Yes                           | Yes    | -           | 60         |
| Requite Q                            | No                           | No     | UCI    | UCI     | Yes                           | Yes    | 7           | 3          |
| Resolve Q                            | No                           | No     | UCI    | UCI     | Yes                           | Yes    | 7           | 3          |
| Steadfast Q                          | No                           | No     | UCI    | UCI     | Yes                           | Yes    | 7           | 3          |
| Stant                                | No                           | No     | UCI    | UCI     | Yes                           | Yes    | 7           | 3          |
| <b>Prinsulfuron and prosulfuron</b>  |                              |        |        |         |                               |        |             |            |
| Beacon                               | No                           | No     | TCI    | TCI     | TCI                           | TCI    | 10          | 7          |
| Northstar                            | No                           | No     | TCI    | TCI     | TCI                           | TCI    | 10          | 7          |
| Spirit                               | No                           | No     | TCI    | TCI     | TCI                           | TCI    | 10          | 7          |
| <b>Flumetsulam</b>                   |                              |        |        |         |                               |        |             |            |
| Hornet WDG (PRE)                     | No                           | No     | No     | TCI*    | No*                           | TCI    | -           | -          |
| Hornet WDG (POST)                    | No                           | No     | No     | TCI     | TCI                           | TCI    | 10          | 10         |
| Python                               | No                           | No     | No     | TCI*    | No*                           | TCI    | -           | -          |
| SureStart (PRE)                      | No                           | No     | No     | TCI*    | No*                           | TCI    | -           | -          |
| SureStart (POST)                     | No                           | No     | No     | TCI     | TCI                           | TCI    | 10          | 10         |
| <b>Thifensulfuron</b>                |                              |        |        |         |                               |        |             |            |
| Harmony GT XP                        | No                           | No     | UCI    | UCI     | Yes                           | Yes    | -           | -          |
| <b>Mesotrione</b>                    |                              |        |        |         |                               |        |             |            |
| Callisto                             | SCI                          | SCI    | Yes    | SCI     | Yes                           | Yes    | 7           | 7          |
| Callisto Xtra                        | SCI                          | SCI    | Yes    | SCI     | Yes                           | Yes    | 7           | 7          |
| Cumate                               | No                           | No     | TCI    | TCI     | TCI                           | TCI    | 7           | 7          |
| Halex GT                             | SCI                          | SCI    | SCI    | SCI     | SCI                           | SCI    | 7           | 7          |
| Leaxx                                | SCI                          | SCI    | TCI    | TCI     | TCI                           | TCI    | 7           | 7          |
| Lumax                                | SCI                          | SCI    | TCI    | TCI     | TCI                           | TCI    | 7           | 7          |
| <b>Florasulfuron</b>                 |                              |        |        |         |                               |        |             |            |
| Option                               | No                           | No     | No     | TCI     | Yes                           | Yes    | 7           | 7          |
| <b>Flintencarbazon</b>               |                              |        |        |         |                               |        |             |            |
| Corvus                               | No                           | No     | No     | No      | Yes                           | No     | 7           | 7          |
| Cayena                               | No                           | No     | No     | No      | Yes                           | Yes    | 7           | 7          |
| <b>Seflufenoxifl</b>                 |                              |        |        |         |                               |        |             |            |
| Integrity                            | No                           | No     | No     | No      | No                            | No     | -           | -          |
| Sharpen                              | No                           | No     | No     | No      | No                            | No     | -           | -          |

No: Do not use this herbicide on corn if this insecticide was previously applied.  
 Yes: This herbicide may be applied to corn previously treated with this insecticide.  
 UCI: unacceptable crop injury; TCI: temporary crop injury; SCI: severe crop injury; -: no information on label.  
 \*Do not apply Prequel within 60 days of crop emergence where an OP insecticide was applied in-furrow.  
 \*\*Soil-applied OP insecticides should not be placed in furrow, but rather applied to a band or T-band.

Table 1 summarizes herbicide label information with respect to the potential for corn injury caused by various OP-herbicide interactions. As always, be sure to consult the most current product labels for additional information.