Can Conventional Crop Producers Also Benefit From Bt Technology?

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Introduction

Transgenic plants producing insecticidal protein derived from Bacillus thuringiensis (Bt) have been widely adopted since their commercial introduction in 1996.

The conventional wisdom is that Bt crop producers are winners while conventional growers lose due to lower yields. This outcome makes producers skeptical of the benefits for allowing pests to survive in non-Bt crop refuge and is at the root of the refuge compliance problem.

Hutchison et al. (2010) showed that European corn borer (ECB) populations have declined relative to the pre-Bt and that this population decline is closely tied to the increased planting of Bt corn. This area wide ECB suppression creates benefits for both Bt and non-Bt growers.

Method

We treat the area wide suppression of ECB from planting Bt corn as a positive externality to conventional corn growers and model the positive externality of Bt corn on conventional corn as a type of “technology spillover”.

Results

We apply the above model to analyze the distribution of gains from planting Bt corn in year 2010.

Conclusion

Conventional crop growers can also benefit from Bt technology due to the positive externality resulting from area-wide suppression of pest population by Bt. Our finding that both Bt and non-Bt acres can benefit from Bt crops will help encourage growers that the refuge/conventional crops that they plant can also benefit from Bt technology.