



NAICC Comments to EPA-CRW PIP Resistance Management

The National Alliance of Independent Crop Consultants (NAICC) appreciates the opportunity to comment on the Environmental Protection Agency's (EPA's) proposal related to corn rootworm (CRW) resistance management for registrations of plant incorporated protectants (PIPs) in corn under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). NAICC is greatly aware of the need to develop better resistance management strategies to ensure the prolonged use of PIPs. Furthermore, NAICC believes that any decision related to this topic should be based on sound science, should reflect input from practitioners such as NAICC members who deal with CRW and managing resistance on a daily basis, and should help support Integrated Pest Management principles.

NAICC is a national organization representing more than 600 crop consultants, contract researchers and quality assurance professionals across the country. Our members are experts in crop care, integrated pest management (IPM), integrated crop management, and contract research as well as applications in biotechnology and sustainable agriculture. Our crop consultant members are truly independent in that they do not sell any products nor do they receive any commission from the products they recommend. Independent crop consultants receive their income by providing services directly to the grower.

Independent crop consultants utilize the principles of IPM in their decision making process when recommending any product or action being taken by the grower. Our consultants strive to utilize pesticides that will have the least impact on the environment while providing economic control of a particular pest problem. Our members consider the impact of their recommendations on the growers' crop, on secondary pests, and on beneficial insects, and also how their decisions directly impact insect resistance to pesticides and PIPs.

Independent crop consultants are very concerned with the implications of CRW resistance to the PIP's and the impact of such resistance on established crop production practices and IPM. Our members recognize that a good resistance management program begins with timely scouting and evaluations of pest complexes to determine the appropriate control recommendations. Field history and environmental conditions become a large part of those considerations. Consultants recognize that as CRW pressure increases, the rotation of multiple stacked CRW PIPs must be utilized. However, the use of soil applied

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insecticides (SAI's) over the top of such CRW PIPs may be warranted for other insects or where the low dose expression of existing PIPs is not adequate to provide commercially viable control of high CRW populations. Furthermore, the rotation of SAI modes of action is recommended as well.

NAICC is concerned that without the option of using SAI's in conjunction with CRW Bt's, increased selection pressure will be placed on the CRW Bt PIPs. In those locations where there is resistance to CryBbl and cross resistance to Cry3A the triple stack PIP selects for the single remaining protein. History strongly suggests that this will lead to further resistance problems. NAICC understands the concern of EPA as to the over use of these SAI's, but with the diminishing effectiveness of many CRW Bt's, consultants and growers are left with few other options. Prior to the use of CRW Bt's, in many areas of the country, adult corn rootworm beetle control was a standard practice. This involved treating adult beetles later in the season to attempt to reduce the number of eggs laid in a corn field for the upcoming year. This is a fairly effective method of reducing CRW numbers for the next year, but can cause secondary pest problems at the time of treatment, such as mites or aphids, and this method is not a favorable IPM technique when compared to utilizing SAI's and/or CRW Bt's. NAICC members believe the key to managing resistance is not limiting the number of tools available to control a certain insect, but rather to have a wide array of tools available to address different situations and facilitate rotating modes of action to ensure resistance does not occur.

NAICC members support the use of soil applied insecticides (SAIs) as an important resistance management tool. These SAIs need to be available for use when deemed necessary by proven pest thresholds and established IPM practices. Furthermore, the SAIs can be used along with PIPs to help prevent corn rootworm (CRW) resistance to the PIPs. NAICC members also recognize that crop rotation is an important tool in managing CRW resistance. However, there are some instances and areas in the country where that is not always the most viable option and therefore other techniques must be used to manage resistance. Restricting the use of SAIs to non Bt corn is not feasible at the producer level because the germplasm is a critical factor in selecting the seed variety to be grown at a specific location. The limited availability of non Bt corn in a wide selection of germplasm significantly diminishes the acceptability of that option in commercial production.

NAICC members are very concerned with resistance management and prolonging the viability of PIPs. PIPs play a significant role in agriculture and help to ensure that our growers are able to feed the world. NAICC supports increased practical research focused on developing resistance management plans to ensure the longevity of these PIPs. Additionally, NAICC believes in wise stewardship and use of the PIPs, SAIs, and other crop protection products to attain sustainable crop production using sound IPM and IRM practices. NAICC would welcome the opportunity for its members to further share with EPA their

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own resistance management plans and challenges faced throughout different areas of the country. We welcome comments or requests for additional information to support our positions.