



**Field to Market®**

# Pesticides in the Fieldprint Platform® and Field to Market Metrics

**Version 1.0 – Published June 2017**

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## **FIELD TO MARKET VISION & MISSION**

**Our Vision:** To champion solutions for tomorrow's safe, accessible, and nutritious food, fiber and fuel in thriving ecosystems.

**Our Mission:** To meet the agricultural challenge of the 21st century by providing collaborative leadership that is transparent; grounded in science; focused on outcomes; open to the full range of technology choices; and committed to creating opportunities across the agricultural supply chain for continuous improvements in productivity, environmental quality, and human well-being.

### **1.0 INTRODUCTION**

This document summarizes the questions related to pesticide use that are asked in the Fieldprint Platform, and how the information is used in calculation of four of the metrics. Field to Market metrics and tools are designed to be technology neutral and science based. Thus, we do not ask for specific chemical compositions or brand names for any pesticides applied. However, pesticides are an important consideration for sustainability, both for the efficiency of resource use and risk to ecosystem and human health.

### **2.0 ENERGY USE AND GREENHOUSE GAS EMISSIONS METRICS**

In the Fieldprint Platform, growers are asked to provide information about how many different times they apply pesticides, and how many different chemicals they use on each application, in five categories (herbicide, insecticide, fungicide, growth regulator, fumigant). This information is used to calculate two energy factors – the amount of energy used to produce the chemicals (embedded energy) and the amount of energy used to apply the chemicals to the fields. The energy used in both categories is then converted to carbon dioxide equivalent and forms a component of the Greenhouse Gas Emissions metric.

When a grower receives the detailed results of their Fieldprint, the pesticide contribution to their Energy Use and Greenhouse Gas Emissions scores

are presented in the “Crop protectant product Fieldprint” (embedded) and as a part of their “Field Equipment operations” (application) components of the scores.

The Fieldprint Platform also collects information on seed treatments – pesticides included with the seed – but does not currently use this information directly in metric calculations.

### **3.0 WATER QUALITY AND BIODIVERSITY METRICS**

For both the Water Quality and Biodiversity metrics, we ask whether a grower is using Integrated Pest Management (IPM). There are four possible responses to this question, and they are specific to the NRCS WQI tool. We adopted the same question for the Habitat Potential Index tool. A user must select one of these four options for pest management:

- IPM strategies used to manage pests primarily without the use of chemical control
- IPM strategies used to manage pests including chemical control
- Pests managed primarily using chemical control and additional site-specific techniques to reduce environmental risks of the pesticides
- Pests managed primarily using chemical control

IPM refers to a comprehensive plan incorporating non-chemical prevention, avoidance, monitoring and suppression strategies. Examples include:

- Prevention - Activities such as cleaning equipment and gear when leaving an infested area, using pest-free seeds and transplants, and irrigation scheduling to limit situations that are conducive to disease development.
- Avoidance - Activities such as maintaining healthy and diverse plant communities, using pest resistant varieties, crop rotation, and refuge management.
- Monitoring - Activities such as pest scouting, degree-day modeling, and weather forecasting to help target suppression strategies and avoid routine preventative treatments.
- Suppression - Activities such as the use of cultural, mechanical, biological and chemical control methods that reduce or eliminate a pest population or its impacts while minimizing risks to non-target organisms.

Under IPM, a grower uses chemical control as a last resort, if necessary. Thus, growers can indicate for a given year if chemical control was necessary in addition to their IPM strategies.

If a grower does not have an IPM plan but does use one or more non-chemical techniques to manage pests or the risk of pesticide drift, they select the third option "pest managed primarily using chemical control and additional site-specific techniques to reduce environmental risks of the pesticides".

Specific strategies and IPM are more fully described in NRCS Agronomy Technical Note No. 5 (Feb 2011) – [Pest Management in the Conservation Planning Process](#)".

For the Water Quality metric, the final score considers four separate components. The Pest Management component is 25% of the metric score and is clearly indicated in the Fieldprint report.

## **4.0 PESTICIDES AND FIELDPRINT SCORES**

The current Fieldprint Platform can be used to include discussions of pesticide use in conversations with growers around continuous improvement in sustainability. For example, if a producer moves from using a primarily chemical control strategy to an IPM strategy, they will see improvements in their Water Quality and Biodiversity metric scores, as well as improvements in the Energy Use and Greenhouse Gas Emissions metric scores. There are multiple opportunities to explore how best to include discussion of pesticide use in Fieldprint Project Continuous Improvement Plans, and in technical assistance provided to growers when considering opportunities for continuous improvement in their operations.

## 5.0 VERSION HISTORY

Version/Date	Change	Link
1.0	Initial Publication	