

Summary of Noxious Weed Risk Assessment for Non-Herbicide Tolerant and Herbicide Tolerant Types of *Poa pratensis* L., Kentucky bluegrass

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The purpose of this weed risk assessment is to evaluate the weediness of non-herbicide tolerant (non-genetically engineered, or non-GE) and herbicide tolerant (GE) types of Kentucky bluegrass, and determine whether or not the species (which encompasses both types) is a candidate for listing as a Federal noxious weed. The Plant Protection Act (7 U.S.C. § 7701-7786, 2000) defines a noxious weed as “any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment.” To determine whether or not Kentucky bluegrass is a candidate for listing, we used a weed risk assessment tool that was validated using data on 204 plant species with known noxious behavior in the United States. The model predicts weed risk potential based on scores for Impact Potential (i.e., harm), and Establishment/Spread Potential. We estimate Impact Potential with 18 scored questions related to the types of damage to crops or the environment that a species may cause (e.g., reducing crop yields, requiring control, changing community function or structure, adverse effects on human health). We assess Establishment/Spread potential using 27 scored questions on species biology and history (e.g., invasiveness elsewhere, dispersal mechanisms, likelihood of being a contaminant, reproduction). The model was developed to assess basic invasiveness of plants, however, and not to distinguish between plant types with different genotypes. Except for being herbicide tolerant, we have no evidence that the growth and behavior of the GE type is likely to differ from that of the non-GE type. Our uncertainty about the risk scores discussed below was small because of the abundance of information about Kentucky bluegrass and its biology, behavior, and performance in the United States.

The Establishment/Spread Potential scores for the two types of Kentucky bluegrass were 23 for the non-GE type, and 24 for the GE type, which are high on the scale of -25 to 32. The one point difference, which is not significant, is due entirely to the herbicide tolerance of the GE type.

For Impact Potential, both types scored 2.5 on a scale of 1 to 5.1. That score exceeds all those for non-invasive species in the validation dataset, but is low or moderate when compared with scores for High risk species. The most harmful species in the validation dataset (e.g., Canada thistle, *Cirsium arvense*) have Impact Potential scores of 4 or greater. In this case, because the model is qualitative, the score for Impact Potential may overestimate the true damage this species can cause. For example, although Kentucky bluegrass can act as a weed in U.S. agricultural systems, we found very few reports for that in U.S. crops. It is also reported to be a weed of production crops in only two other countries, despite a wide distribution through Europe and Asia. Some recent studies indicate that Kentucky bluegrass can invade U.S. prairie or grassland ecosystems in the, but general weed management programs are typically recommended in such situations. Finally, no states regulate Kentucky bluegrass or have it prioritized for control.

Based on those scores, the predictive logistic regression model indicated that both the non-GE and GE types have High weed risk potentials. Therefore, the Kentucky bluegrass species, *P. pratensis*, (including both types) can be considered for regulation as a Federally listed noxious weed. That decision is addressed separately.