

November 17, 2003

Mr. Bobby R. Acord  
APHIS Administrator  
USDA/APHIS/OA  
14<sup>th</sup> and Independence Ave., SW  
Room 312E Jamie Whitten Bldg.  
Washington, DC 20737

Dear Mr. Acord,

APHIS is currently reviewing the deregulation petition for Roundup Ready (RR) spring wheat, which is likely to be the next major genetically engineered (GE) crop. Because of the importance of wheat in the American diet, the regulation of RR wheat will have an important impact on the controversy about and subsequent development of GE crops. It is critical to public confidence in GE crops that APHIS adequately regulate RR wheat, including requiring reasonable mitigation of environmental risks.

To ensure that RR wheat is safe for the environment, the Center for Science in the Public Interest (CSPI) has conducted a scientific review of the state-of-the-art risk assessment of environmental consequences that might be presented by RR wheat. The results of that analysis are discussed in the attached report entitled "[Roundup Ready Wheat – An Overview Based on Advancements in the Risk Assessment of GE Crops.](#)" I hope that USDA will incorporate our analysis both into its review of the safety information submitted by Monsanto on RR wheat and into any general guidance it provides to industry on how a state-of-the-art risk assessment should be conducted for a GE crop.

Although a number of potential environmental risks need to be carefully considered, the paper focuses on several prominent issues that are most critical to the assessment of RR wheat. Those issues concern gene flow to the important wheat-related weed, jointed goatgrass (JGG), and the development of glyphosate resistant weeds. Another important issue, the control and impact of volunteer RR wheat, has been considered by others.

RR wheat is the first major GE crop in the U.S. with an important weedy wild relative, and, therefore, the issue of gene flow needs to be considered especially carefully. Although JGG is an important weed of winter wheat, and Monsanto has instead put the glyphosate resistance gene into spring wheat, the data suggest that the gene will nonetheless find its way into JGG and winter wheat fields. Wheat and JGG have a shared ancestry that consists of chromosomes called the "D genome." Genes inserted into that D genome in wheat can be readily exchanged with JGG, and is the easiest

way for a gene from wheat to get into JGG. However, wheat has two other “genomes,” which are not shared with JGG, and insertion into those genomes would slow exchange of transgenes from wheat to JGG. Therefore, regardless of other actions, APHIS should not deregulate any wheat with the RR gene on the shared “D” genome. However, other data suggest that even if the RR resistance gene is inserted on a non-D genome in wheat, it may eventually end up in JGG. Therefore, APHIS needs to carefully consider whether that risk is acceptable, and, if so, how to manage it. Evaluation and adequate management of gene flow will require careful research and management of RR wheat and glyphosate use.

Secondly, as our paper details, spontaneous weed resistance to glyphosate is a growing problem, exacerbated by the greatly increased use of glyphosate on RR crops. Glyphosate, due to its wide spectrum of weed control, relatively low environmental and human impact, short persistence, and relatively low cost often cannot be readily replaced if lost to resistance. Furthermore, voluntary resistance management has not been effective in preventing resistance to glyphosate, in contrast to mandatory resistance management in Bt crops. For example, horseweed developed resistance to glyphosate in RR soybeans after just three years, while resistance has not been observed to Bt crops since their introduction eight years ago.

We urge APHIS to demonstrate good stewardship of glyphosate and RR crops by instituting mandatory resistance management programs with the help of outside experts and farmers. Continuous planting of RR crops should not be allowed, but research is also needed to make resistance management effective and practical. If deregulation precludes effective management of resistance and gene flow risks, we recommend that RR wheat not be deregulated. An alternative to deregulation, such as issuing permits that allow adequate risk management, should be pursued.

Adequate management of RR wheat is an opportunity for APHIS to demonstrate its leadership in the sensible regulation of GE crops. Failure to do so will increase public skepticism concerning agricultural GE.

If you would like to discuss this issue further, I would be happy to do so.

Sincerely,

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Enclosure

cc: Susan Kohler, Ph.D., Cindy Smith