NATIONAL ENVIRONMENTAL POLICY ACT DECISION
AND
FINDING OF NO SIGNIFICANT IMPACT

Pioneer Hi-Bred International, Inc.
Event 73496 Canola
United States Department of Agriculture
Animal and Plant Health Inspection Service
Biotechnology Regulatory Services

The United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) has developed this decision document to comply with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended, the Council of Environmental Quality's (CEQ) regulations implementing NEPA, and the USDA APHIS NEPA implementing regulations and procedures. This NEPA decision document, a Finding of No Significant Impact (FONSI), sets forth the APHIS NEPA decision and its rationale. Comments from the public involvement process were evaluated and considered in developing this NEPA decision.

In accordance with APHIS procedures implementing NEPA (7 CFR part 372), APHIS has prepared an Environmental Assessment (EA) to evaluate and determine if there are any potentially significant impacts to the human environment from a determination on the regulated status of genetically engineered (GE) event DP-073496 Canola (hereafter referred to as 73496 Canola), the subject of a petition request (APHIS Number 11-063-01p) by Pioneer Hi-Bred International, Inc. (Pioneer) The 73496 Canola is resistant to the herbicide, glyphosate. The EA has been prepared to specifically evaluate the effects on the quality of the human environment that may result from approving the petition seeking nonregulated status for 73496 Canola. The EA assesses alternatives to a determination of nonregulated status of 73496 Canola and analyzes the potential environmental and social effects that result from the proposed action and the alternatives.

Regulatory Authority

"Protecting American Agriculture" is the basic charge of APHIS. APHIS provides leadership in ensuring the health and care of plants and animals. The agency improves agricultural productivity and competitiveness, and contributes to the national economy and public health. USDA asserts that all methods of agricultural production (conventional, organic, or the use of GE varieties) can increase farm income, and provide benefits to the environment and consumers.

Since 1986, the United States government has regulated GE organisms pursuant to a regulatory framework known as the Coordinated Framework for the Regulation of Biotechnology (Coordinated Framework) (51 FR 23302, 57 FR 22984). The Coordinated Framework, published by the Office of Science and Technology Policy, describes the comprehensive federal regulatory policy for ensuring the safety of biotechnology research and products and explains

how federal agencies will use existing Federal statutes in a manner to ensure public health and environmental safety while maintaining regulatory flexibility to avoid impeding the growth of the biotechnology industry. The Coordinated Framework is based on several important guiding principles: (1) agencies should define those transgenic organisms subject to review to the extent permitted by their respective statutory authorities; (2) agencies are required to focus on the characteristics and risks of the biotechnology product, not the process by which it is created; (3) agencies are mandated to exercise oversight of GE organisms only when there is evidence of "unreasonable" risk.

The Coordinated Framework explains the regulatory roles and authorities for the three major agencies involved in regulating GE organisms: USDA APHIS, the Food and Drug Administration (FDA), and the Environmental Protection Agency (EPA).

APHIS is responsible for regulating GE organisms and plants under the plant pest provision in the Plant Protection Act of 2000 (PPA), as amended (7 USC §§ 7701 *et seq.*) to ensure that they do not pose a plant pest risk to the environment.

The FDA regulates GE organisms under the authority of the Federal Food, Drug, and Cosmetic Act (FFDCA). The FDA is responsible for ensuring the safety and proper labeling of all plant-derived foods and feeds, including those that are GE. To help developers of food and feed derived from GE crops comply with their obligations under Federal food safety laws, FDA encourages them to participate in a voluntary consultation process. The FDA policy statement concerning regulation of products derived from new plant varieties, including those GE, was published in the Federal Register on May 29, 1992 (57 FR 22984-23005). Under this policy, FDA uses what is termed a consultation process to ensure that human food and animal feed safety issues or other regulatory issues (e.g., labeling) are resolved prior to commercial distribution of bioengineered foods.

The EPA regulates plant-incorporated protectants under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Under FIFRA, EPA is responsible for regulating the sale, distribution, and use of pesticides, including pesticides that are produced by an organism through techniques of modern biotechnology. EPA also sets tolerance limits for residues of pesticides on and in food and animal feed, or establishes an exemption from the requirement for a tolerance, under the Federal Food, Drug and Cosmetic Act (FFDCA), and regulates certain biological control organisms under the Toxic Substances Control Act (TSCA). The EPA is responsible for regulating the sale, distribution, and use of pesticides, including pesticides that are produced by an organism through techniques of modern biotechnology.

Regulated Organisms

The APHIS Biotechnology Regulatory Services' (BRS) mission is to protect America's agriculture and environment using a dynamic and science-based regulatory framework that allows for the safe development and use of GE organisms. APHIS regulations at 7 Code of

Federal Regulations (CFR) part 340, which were promulgated pursuant to authority granted by the PPA, as amended (7 United States Code (U.S.C.) 7701-7772), to regulate the introduction (importation, interstate movement, or release into the environment) of certain GE organisms and products. A GE organism is no longer subject to the plant pest provisions of the PPA or to the regulatory requirements of 7 CFR part 340 when APHIS determines that it is unlikely to pose a plant pest risk. A GE organism is considered a regulated article if the donor organism, recipient organism, vector, or vector agent used in engineering the organism is listed in the regulation (7 CFR 340.2) and is also considered a plant pest. A GE organism is also regulated under Part 340 when APHIS does not have information to determine if the GE organism is unlikely to pose a plant pest risk.

A person may petition the agency for a determination that a particular regulated article is unlikely to pose a plant pest risk, and, therefore, is no longer regulated under the plant pest risk provisions of the PPA or the regulations at 7 CFR part 340. The petitioner is required to provide information under §340.6(c)(4) related to plant pest risk that the agency may use to determine whether the regulated article is unlikely to present a greater plant pest risk than the unmodified organism. A GE organism is no longer subject to the regulatory requirements of 7 CFR part 340 or the plant pest risk provisions of the PPA when APHIS determines that it is unlikely to pose a plant pest risk.

APHIS' Response to Petition for Nonregulated Status

Under the authority of the plant pest provisions of the PPA and 7 CFR part 340, APHIS has issued regulations for the safe development and use of GE organisms. As required by 7 CFR 340.6, APHIS must respond to petitioners who request a determination of the regulated status of GE organisms, including GE plants such as 73496 Canola. When a petition for nonregulated status is submitted, APHIS must make a determination if the GE organism is unlikely to pose a plant pest risk. If APHIS determines, based on its Plant Pest Risk Assessment (PPRA), that the GE organism is unlikely to pose a plant pest risk, it is no longer subject to the plant pest provisions of the PPA and 7 CFR part 340.

Pioneer has submitted a petition (APHIS Number 11-063-01p) to APHIS seeking a determination that their GE 73496 Canola is unlikely to pose a plant pest risk and, therefore, should no longer be a regulated article under regulations at 7 CFR part 340.

73496 Canola

73496 Canola has been genetically engineered to express the GAT4621 (glyphosate acetyltransferase) protein to convey resistance to the herbicide glyphosate. Pioneer 73496 Canola provides growers with an alternative to glyphosate-resistant canola products marketed currently. Herbicide-Resistant 73496 Canola will provide similar benefits to currently available glyphosate-resistant canola varieties by allowing post emergent applications of glyphosate to control weeds.

Coordinated Framework Review

Food and Drug Administration

73496 Canola is within the scope of the FDA policy statement concerning regulation of products derived from new plant varieties, including those produced by genetic engineering. Pioneer indicated that a New Protein Consultation for the GAT4621 protein was submitted to FDA on January 31, 2007 and completed on October 7, 2009. Pioneer submitted a safety and nutritional assessment of food and feed derived from 73496 Canola to the FDA in February 2011. Based on the information Pioneer submitted, and as of May 1, 2012, FDA has no further questions regarding 73496 Canola (US-FDA, 2012)

Environmental Protection Agency

The EPA has authority over the use of pesticide substances and plant-incorporated protectants (PIPs) under the FIFRA as amended (7 USC §136, *et seq.*) and the FFDCA (21 USC §301, *et seq.).* APHIS considers the EPA's regulatory assessment when assessing potential impacts that may result from a determination of nonregulated status of a GE organism.

EPA has authority under FIFRA to establish pesticide use restrictions. These are listed on pesticide labels which are prepared during the pesticide registration process. 73496 Canola is similar to currently available glyphosate-resistant canola varieties. Pioneer indicates that there will be no change in the use pattern for glyphosate on this glyphosate-resistant variety. APHIS used the current glyphosate labels as the basis for its evaluation of the potential impacts associated with the use of and exposure to glyphosate.

Scope of the Environmental Analysis

Although a determination of nonregulated status of 73496 Canola would allow for new plantings of 73496 Canola anywhere in the U.S., APHIS primarily focused the environmental analysis on those geographic areas that currently support canola production. A determination of nonregulated status of 73496 Canola is not expected to increase canola production by its availability alone or when accompanied by other factors, nor should it cause an increase in overall GE-canola acreage. To delineate areas in the U.S. where canola is produced, APHIS used data from the National Agricultural Statistics Service (NASS) (UDA-NASS, 2012). In North America, the primary canola-growing region is in areas of the Great Plains characterized by high quality soil, but shorter, drier growing seasons than that preferred by most corn and soybean varieties. Most of this region is in the prairie provinces of Canada, but part of it extends into North Dakota. From 2003-2012, the average canola production in the U.S. has been about 1.1 million acres (USDA-NASS, 2012). According to the 2007 Census of Agriculture North Dakota produced about 93% of all the canola grown in the U.S.

Public Involvement

On July 13, 2012, APHIS published a notice in the Federal Register (77 FR pages 41364-41366, Docket no. APHIS-2012-0031) announcing the availability of the Pioneer petition for a 60-day public review and comment period. Comments were required to be received on or before September 11, 2012. All comments were carefully analyzed to identify potential environmental and interrelated economic issues and impacts that APHIS may determine should be considered in the evaluation of the petition. A total of 4,686 comments were received during the comment period[1]. The issues that were raised in the public comments which were related to the Pioneer 73496 Canola petition included:

- Canola outcrossing with other mustards
- Canola forming feral populations
- Development of herbicide resistant weeds
- Use of herbicides on herbicide resistant crops
- The fate of glyphosate in air and water
- The effects of glyphosate use on biological organisms
- The effect of glyphosate drift on outcrossing to weedy or wild relatives
- Increase in plant pathogens or susceptibility to plant pathogens from the use of glyphosate
- Concern that cross-pollination between GE and organic or crops for GE-sensitive markets will affect sales for growers of these crops.
- Concerns that Pioneer 73496 Canola is not approved in all export markets.

APHIS evaluated these raised issues and the submitted documentation. APHIS has included a discussion of these issues in this EA

Major Issues Addressed in the EA

Issues discussed in the EA were identified by considering public concerns and issues described in public comments for the petition for nonregulated status of 73496 Canola and other environmental assessments of GE organisms. Issues identified in lawsuits, and those submitted by various stakeholders were also discussed. These issues, including those regarding the agricultural production of canola using various production methods, and the environmental food/feed safety of GE plants, were addressed to analyze the potential environmental impacts of 73496 Canola.

The EA describes the alternatives considered and evaluated using the issues identified. These include the following that were identified as important to the scope of the analysis (40 CFR 1508.25):

Agricultural Production Considerations:

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[1] Comment documents may be viewed at http://www.regulations.gov/#!docketBrowser;rpp=25;po=0;dct=PS;D=APHIS-2012-0031.

- Acreage and Areas of Canola Production
- Agronomic/Cropping Practices
- Canola Seed Production
- Organic Canola Production

Environmental Considerations:

- Water Resources
- Soil
- Air Quality
- Climate Change
- Animals
- Plants
- Microorganisms
- Biological Diversity

Human Health Considerations:

- Consumer Health
- Worker Safety

Livestock Health Considerations:

- Livestock Health/Animal Feed

Socioeconomic Considerations:

- Domestic Economic Environment
- Trade Economic Environment

Alternatives that were fully analyzed

The EA analyzes the potential environmental consequences of a determination of nonregulated status of 73496 Canola. To respond favorably to a petition for nonregulated status, APHIS must determine that 73496 Canola is unlikely to pose a plant pest risk. Based on its Plant Pest Risk Assessment (USDA-APHIS, 2013), APHIS has concluded that 73496 Canola is unlikely to pose a plant pest risk. Therefore, APHIS must determine that 73496 Canola is no longer subject to 7 CFR part 340 or the plant pest provisions of the PPA. Two alternatives were evaluated in the EA: (1) no action and (2) determination of nonregulated status of 73496 Canola. APHIS has assessed the potential for environmental impacts for each alternative in the Environmental Consequences section of the EA.

No Action: Continuation as a Regulated Article

Under the No Action Alternative, APHIS would deny the petition. 73496 Canola and progeny derived from 73496 Canola would continue to be regulated articles under the regulations at 7 CFR part 340. Permits issued or notifications acknowledged by APHIS would still be required for introductions of 73496 Canola and measures to ensure physical and reproductive confinement would continue to be implemented. APHIS would choose this alternative if there were insufficient evidence to demonstrate the lack of plant pest risk from the unconfined cultivation of 73496 Canola.

This alternative is not the preferred alternative because APHIS has concluded through a Plant Pest Risk Assessment that 73496 Canola is unlikely to pose a plant pest risk (USDA-APHIS, 2013). Choosing this alternative would not satisfy the purpose and need of making a determination of plant pest risk status and responding to the petition for nonregulated status.

Preferred Alternative: Determination that 73496 Canola is No Longer a Regulated Article

Under this alternative, 73496 Canola and progeny derived from 73496 Canola would no longer be regulated articles under the regulations at 7 CFR part 340. 73496 Canola is unlikely to pose a plant pest risk (USDA-APHIS, 2013). Permits issued or notifications acknowledged by APHIS would no longer be required for introductions of 73496 Canola and progeny derived from this event. The preferred alternative best meets the purpose and need to respond appropriately to a petition for nonregulated status based on the requirements in 7 CFR part 340 and the agency's authority under the plant pest provisions of the PPA. Because the agency has concluded that 73496 Canola is unlikely to pose a plant pest risk, a determination of nonregulated status of 73496 Canola is a response that is consistent with the plant pest provisions of the PPA, the regulations codified in 7 CFR part 340, and the biotechnology regulatory policies in the Coordinated Framework.

Alternatives Considered but Rejected from Further Consideration

APHIS assembled a list of alternatives that might be considered for 73496 Canola. The agency evaluated these alternatives, in light of the agency's authority under the plant pest provisions of the PPA, and the regulations at 7 CFR part 340, with respect to environmental safety, efficacy, and practicality to identify which alternatives would be further considered for 73496 Canola. Based on this evaluation, APHIS rejected several alternatives. These alternatives are discussed briefly below along with the specific reasons for rejecting each.

1. <u>Prohibit any 73496 Canola from Being Released</u>

In response to public comments that stated a preference that no GE organisms enter the marketplace, APHIS considered prohibiting the release of 73496 Canola, including denying any permits associated with the field testing. APHIS determined that this alternative is not appropriate given that APHIS has concluded that 73496 Canola is unlikely to pose a plant pest risk (USDA-APHIS, 2013).

In enacting the PPA, Congress listed findings in Section 402(4), including the following one:

> "[D]ecisions affecting imports, exports, and interstate movement of products regulated under this title [the Plant Protection Act] shall be based on sound science;"

On March 11, 2011, in a Memorandum for the Heads of Executive Departments and Agencies, the White House Emerging Technologies Interagency Policy Coordination Committee developed broad principles, consistent with Executive Order 13563, to guide agencies that develop and implement policies for oversight of emerging technologies such as genetic engineering. In accordance with this memorandum, agencies should adhere to guidance in Executive Order 13563, and, consistent with it, apply the following principle, among others to the extent permitted by law when regulating emerging technologies:

> "Decisions should be based on the best reasonably obtainable scientific, technical, economic, and other information, within the boundaries of the authorities and mandate of each agency;"

Based on the PPRA (USDA-APHIS, 2013), and the scientific data evaluated therein, APHIS concluded that 73496 Canola is unlikely to pose a plant pest risk. Accordingly, there is no basis in science for prohibiting the release of 73496 Canola.

2. Approve the Petition in Part

The regulations at 7 CFR 340.6(d)(3)(i) state that APHIS may "approve the petition in whole or in part." For example, a determination of nonregulated status in part may be appropriate if there is a plant pest risk associated with some, but not all lines described in a petition. Because APHIS has concluded that 73496 Canola is unlikely to pose a plant pest risk, (USDA-APHIS, 2013), there is no regulatory basis under the plant pest provisions of the PPA for considering approval of the petition only in part.

3. Isolation Distance between 73496 Canola and Non-GE Canola Production and Geographical Restrictions

In response to public concerns of gene movement between GE and non-GE plants, APHIS considered requiring an isolation distance separating 73496 Canola from conventional or specialty canola production. However, because APHIS has concluded that 73496 Canola is unlikely to pose a plant pest risk (USDA-APHIS, 2013), an alternative based on requiring isolation distances would be inconsistent with statutory authority under the plant pest provisions of the PPA and regulations in 7 CFR part 340.

APHIS also considered geographically restricting the production of 73496 Canola based on the location of production of non-GE canola in organic production systems or production systems for GE-sensitive markets in response to public concerns regarding possible gene movement between GE and non-GE plants. However, as presented in APHIS' PPRA for 73496 Canola,

there are no geographic differences associated with any identifiable plant pest risks for 73496 Canola (USDA-APHIS, 2013). This alternative was rejected and not analyzed in detail because APHIS has concluded that 73496 Canola does not present a plant pest risk, and will not exhibit a greater plant risk in any geographically restricted area. Therefore, such an alternative would not be consistent with APHIS' statutory authority under the plant pest provisions of the PPA and regulations in Part 340 and the biotechnology regulatory policies embodied in the Coordinated Framework.

Based on the foregoing, the imposition of isolation distances or geographic restrictions would not meet APHIS' purpose and need to respond appropriately to a petition for nonregulated status based on the requirements in 7 CFR part 340 and the agency's authority under the plant pest provisions of the PPA. However, individuals might choose on their own to geographically isolate their non-GE production systems from 73496 Canola or to use isolation distances and other management practices to minimize gene movement between canola fields. Information to assist growers in making informed management decisions for 73496 Canola is available from the Association of Official Seed Certifying Agencies (AOSCA, 2011).

4. Requirement of Testing for 73496 Canola

During the comment periods for other petitions for nonregulated status, some commenters requested that USDA require and provide testing for GE products in non-GE production systems. APHIS notes that there are no nationally established regulations involving testing, criteria, or limits of GE material in non-GE systems. Such a requirement would be extremely difficult to implement and maintain. Additionally, because 73496 Canola does not pose a plant pest risk (USDA-APHIS, 2013), the imposition of any type of testing requirements is inconsistent with the plant pest provisions of the PPA, the regulations at 7 CFR part 340 and biotechnology regulatory policies embodied in the Coordinated Framework. Therefore, imposing such a requirement for 73496 Canola would not meet APHIS' purpose and need to respond appropriately to the petition in accordance with its regulatory authorities.

Environmental Consequences of APHIS' Selected Action

The EA contains a full analysis of the alternatives to which we refer the reader for specific details. The following table briefly summarizes the results for each of the issues fully analyzed in the Environmental Consequences section of the EA

Summary of Issues of Potential Impacts and Consequences of Alternatives.		
Attribute/Measure	**Alternative A:No Action**	**Alternative B:Determination of Non-**
Meets Purpose, Need and Objectives	**No**	**Yes**
Unlikely to Pose a Plant Pest Risk	Satisfied by regulated field trials.	Satisfied – risk assessment (USDA-APHIS, 2013)
Management Practices		
Acreage and Areas of Canola Production	Since the 1999 introduction of herbicide-resistant canola in the U.S., production has fluctuated between 0.8-1.6M acres. Average U.S. canola acreage is about 1.1M acres. In 2007 about 93% of it was located in North Dakota. In 2006,nearly all (99%) of the ND crop was herbicide resistant; 57% of that was glyphosate resistant.	No change from Alternative A
Agronomic Practices	Conservation tillage, which tends to provide a competitive advantage to canola production by promoting earlier crop emergence, has increased since the introduction of HR canola varieties. In the northern U.S., use of tillage has declined from 89% to 35%; in some individual instances it remains useful in managing herbicide-resistant weeds. About half of growers rely on a 3-year rotation of canola, a small grain, and soybean. The remaining growers use a two-year rotation of canola and wheat.	No change from Alternative A

Summary of Issues of Potential Impacts and Consequences of Alternatives.		
Attribute/Measure	**Alternative A:No Action**	**Alternative B:Determination of Non-**
Canola Seed Production	Most seed production is in Alberta In the U.S seed production occurs in the Columbia Basin in eastern f, the Grand Ronde Valley in Union County in northeastern Oregon, and the San Luis Valley in south central Colorado. Most seed companies have off-season seed production locations in the southwestern U.S. About 5,000 acres of commercial seed production supply enough seed to plant the entire U.S. canola crop.	No change from Alternative A
Pesticide Use	EPA-approved uses of herbicides on canola. Herbicides are specifically labeled to allow their use on HR canola.	No change from Alternative A
Organic Canola Production	Certified organic production is an extremely small component of canola production conducted primarily in regions remote from major GE canola crop sites.	No change from No Action Alternative
Environment		
Soil Quality	Herbicide applications in conjunction with HR canola have promoted conservation tillage, which preserves soil quality by reducing erosion. Growers currently use best management practices to address their specific needs in producing canola.	No change from No Action Alternative
Water Resources	The most significant source of non-point source pollution is increased sedimentation from soil erosion, which can introduce sediments, fertilizers, and pesticides to	No change from No Action Alternative

Summary of Issues of Potential Impacts and Consequences of Alternatives.		
Attribute/Measure	**Alternative A:No Action**	**Alternative B:Determination of Non-**
	nearby lakes and streams. Glyphosate has a high affinity for binding with most types of soils, where it is degraded. This limits its mobility and transport into surface and groundwater.	
Air Quality	Agricultural activities such as tilling, harvesting, spraying pesticides, and fertilizing, including the emissions from farm equipment, can directly affect air quality. Applications may impact air quality from: drift; diffusion; volatilization of chemicals; exhaust emissions from motor vehicles and aircraft.	No change from No Action Alternative
Climate Change	Agriculture-related activities are direct sources of greenhouse gases (e.g., exhaust from motorized equipment) and indirect sources (e.g., soil disturbance from tillage, fertilizer production)	No change from No Action Alternative
Animal Communities	Invertebrates that feed on canola are typically considered pests and may be controlled by the use of insecticides or other production practices. Seed treatments are recommended to prevent flea beetle damage of young plants and foliar insecticide applications are recommended if damage reaches an economic threshold.	No change from No Action Alternative
Plant Communities	Plants growing in canola fields are considered weeds. Weeds can complete with growing canola	No change from No Action Alternative

Summary of Issues of Potential Impacts and Consequences of Alternatives.		
Attribute/Measure	**Alternative A:No Action**	**Alternative B:Determination of Non-**
	plants for resources such as water, light, and soil nutrients. Young canola seedlings are very sensitive to early weed competition. Growers control weeds in and around fields using cultural, mechanical and chemical methods. Canola can form feral populations. Canola can hybridize with certain sexually compatible mustard plants.	
Soil Microorganisms	APHIS has previously examined potential impacts of glyphosate on microorganisms in soils of field under cultivation with HR crops, and has not found evidence linking applications of glyphosate to changes in soil microbial communities that have adverse effects on plants grown in those soils.	No change from No Action Alternative

Summary of Issues of Potential Impacts and Consequences of Alternatives.		
Attribute/Measure	**Alternative A:No Action**	**Alternative B:Determination of Non-**
Biological Diversity	HR crops, such as canola, have been correlated with an increase in conservation tillage in U.S. crop production, which promotes biodiversity by allowing the establishment of other plants, and the accumulation of more plant residue that increases soil organic matter, food, and cover for wildlife. Effects of GE crops have been associated with positive impacts on biodiversity because of increased yields, fewer applications of less toxic pesticides, and facilitation of conservation tillage.	No change from No Action Alternative
Land Use	Canola is minor crop produced on approximately 0.04% of the harvested cropland in the U.S. Current trends influencing the acreage of canola planted annually are driven by market conditions (e.g., increased demand for US canola products and animal feed)) and federal policy	No change from No Action Alternative
Human and Animal Health		
Risk to Human Health	Canola oil has one component (erucic acid) of human health significance because of its toxic properties. Varieties that produce oil with less than 2% of this fatty acid are defined as canola, and are generally regarded as safe by FDA. Residues, such as that that might arise from the GAT protein are removed during filtration. Workers that routinely handle glyphosate, may be exposed	No change from No Action Alternative

Summary of Issues of Potential Impacts and Consequences of Alternatives.		
Attribute/Measure	**Alternative A:No Action**	**Alternative B:Determination of Non-**
	during spray operations. Because of low acute toxicity of glyphosate, absence of evidence of carcinogenicity and other toxicological concerns, occupational exposure data is not required for reregistration. However, EPA has classified some glyphosate formulations as eye and skin irritants. When used consistent with the label, pesticides present minimal risk to human health and safety.	
Risk to Animal Feed	Most canola cultivated in the U.S. is used to produce vegetable oil and animal feed. Canola-based animal feed is currently produced from GE canola varieties that are no longer subject to the regulatory requirements of 7 CFR part 340 or the plant pest provisions of the PPA. This includes HR GE canola varieties.	No change from No Action Alternative
Socioeconomic		
Domestic Economic Environment	Farm income is positively impacted by currently available HR canola by reducing production costs or increasing revenues. GR canola generally has a positive impact on farm income due to cost savings from reduced fuel and pesticide use.	No change from No Action Alternative
Trade Economic Environment	Because the U.S. crushes more canola seed than it produces, the U.S. imports canola seed to meet the demand of the oil market. The U.S. exported 150-300 thousand metric tons of canola	No change from No Action Alternative

Summary of Issues of Potential Impacts and Consequences of Alternatives.		
Attribute/Measure	**Alternative A:No Action**	**Alternative B:Determination of Non-**
	each year between 2007 and 2011. The majority of the canola exported went to Canada where it was processed. Foreign sales are mostly to Canadian crushing plants. The U.S. share of world production remains small, but is an increasingly important component of regional economies in the Northern Plains.	
Other Regulatory Approvals		
U.S.	FDA completed consultations.	No change from No Action Alternative. Satisfied: consultations with other agencies participating in the Coordinated Regulatory Framework completed.
Compliance with Other Laws		
CWA, CAA, EOs	Fully compliant	No change from No Action Alternative:

Finding of No Significant Impact

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of this proposed action. I agree with this conclusion and therefore find that an EIS need not be prepared. This NEPA determination is based on the following context and intensity factors (40 CFR 1508.27).

Context - The term "context" recognizes potentially affected resources, as well as the location and setting in which the environmental impact would occur. This action has potential to affect conventional and organic canola production systems, including surrounding environments and agricultural workers; human food and animal feed production systems; and foreign and domestic commodity markets.

From 2003-2012, the average canola production in the U.S. has been about 1.1 million acres (USDA-NASS, 2012). According to the 2007 Census of agriculture North Dakota produced about 93% of all the canola grown in the U.S. In 2008, GE (glyphosate and glufosinate) herbicide-resistant canola was estimated to be 95% of the U.S. canola crop (Brookes and Barfoot, 2010). In 2006, 99% of the production in the principal U.S. canola-growing state of North Dakota was derived from herbicide-resistant canola varieties, with glyphosate-resistant varieties grown on 57% of that acreage (Johnson et al., 2007). A determination of nonregulated status of 73496 Canola is not expected to directly cause an increase in agricultural acreage devoted to canola production, or those canola acres devoted to GE canola cultivation. The availability of 73496 Canola will not change cultivation areas for canola production in the U.S., and there are no anticipated changes to the availability of GE and non-GE canola varieties on the market.

Intensity – Intensity is a measure of the degree or severity of an impact based upon the ten factors. The following factors were used as a basis for this decision:

1. *Impacts that may be both beneficial and adverse.*
   A determination of nonregulated status of 73496 Canola will have no significant environmental impact on the availability of GE, conventional, or organic canola varieties. As discussed in Chapter 4 of the EA, a determination of nonregulated status of 73496 Canola is expected to neither directly cause an increase in overall canola production acreage, nor GE-canola acreage. The availability of 73496 Canola will not change the cultivation areas for canola production in the U.S., and there are no anticipated changes in the availability of GE and non-GE canola varieties on the market. A determination of nonregulated status of 73496 Canola could add another GE canola variety to the conventional canola market, but is not expected to change the market demands for GE canola or canola produced using organic methods. The 2008 Census of Agriculture indicated that there were approximately 232 acres of organic canola grown in four states, with a value of about 0.03% of the total value of the canola crop in the same year (USDA-NASS, 2008). Based on the data provided by Pioneer for 73496 Canola (Pioneer, 2011), APHIS has concluded that the availability of 73496 Canola would not alter the agronomic practices, locations, and seed production and quality characteristics of conventional and GE canola seed production (USDA-APHIS, 2013). A determination of nonregulated status of 73496 Canola will not require a change to seed production practices, nor current production practices. The introduction of 73496 Canola provides an alternative canola variety with glyphosate tolerance.
2. *The degree to which the proposed action affects public health or safety.*
   A determination of nonregulated status of 73496 Canola would have no significant impacts on human or animal health. Compositional tests conducted by the petitioner indicate that 73496 Canola is compositionally similar to other commercially available GE canola (Pioneer, 2011). Pioneer initiated the consultation process with FDA for the

commercial distribution of 73496 Canola and submitted a safety and nutritional assessment of food and feed derived from 73496 Canola to the FDA in February 2011. Based on the information Pioneer submitted, and as of May 1, 2012, FDA has no further questions regarding 73496 Canola (US-FDA, 2012). Based on the FDA's consultation, laboratory data and scientific literature provided by Pioneer (Pioneer, 2011), and safety data available on other herbicide-resistant products, APHIS has concluded that 73496 Canola would have no significant impacts on human or animal health.

3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

   There are no unique characteristics of geographic areas such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be adversely impacted by a determination of nonregulated status for 73496 Canola. The common agricultural practices that would be carried out under the proposed action will not cause major ground disturbance, nor cause any physical destruction or damage to property, wildlife habitat, or landscapes, and do not involve the sale, lease, or transfer of ownership of any property. This action is limited to a determination of nonregulated status of 73496 Canola. The product will be deployed on agricultural land currently suitable for production of canola, will replace existing varieties, and is not expected to increase the acreage of canola production. This action would not convert land to nonagricultural use and therefore would have no adverse impact on prime farm land. Standard agricultural practices for land preparation, planting, irrigation, and harvesting of plants would be used on agricultural lands planted to 73496 Canola including the use of EPA registered pesticides. Applicant's adherence to EPA label use restrictions for all pesticides will mitigate potential impacts to the human environment. In the event of a determination of nonregulated status of 73496 Canola, the action is not likely to affect historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas that may be in close proximity to canola production sites.

4. *The degree to which the effects on the quality of the human environment are likely to be highly controversial.*

   The effects on the quality of the human environment from a determination of nonregulated status for 73496 Canola are not highly controversial. Although APHIS received public comments opposed to a determination of nonregulated status of 73496 Canola, this action is not highly controversial in terms of size, nature or effect on the natural or physical environment. As discussed in Chapter 4 of the EA, a determination of nonregulated status is not expected to directly cause an increase in agricultural acreage devoted to canola production, or those acres devoted to glyphosate resistant canola cultivation. The availability of 73496 Canola will not change cultivation areas for canola production in the U.S., and there are no anticipated changes to the availability of non-GE-

and GE-canola varieties on the market. A determination of nonregulated status of 73496 Canola would add another GE-canola variety to the conventional canola market and is not expected to change the market demands for GE canola or canola produced using organic methods. A determination of nonregulated status of 73496 Canola will not change current practices for planting, tillage, fertilizer application/use, cultivation, pesticide application/ use, or volunteer control. Management practices and seed standards for production of certified canola seed would not change. The effect of 73496 Canola on wildlife or biodiversity is no different than that of other glyphosate resistant canola currently used in agriculture, or other GE or non-GE canola produced in conventional agriculture in the U.S.

5. *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

   Based on the analysis documented in the EA, the possible effects on the human environment are well understood. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks on the natural or physical environment. As discussed in Chapter 4 of the EA, a determination of nonregulated status of 73496 Canola is expected to neither directly cause an increase in agricultural acreage devoted to canola production, nor increase those acres devoted to GE-canola cultivation. A determination of nonregulated status of 73496 Canola will not result in changes in the current practices of planting, tillage, fertilizer application/use, pesticide application/use or volunteer control. Management practices and seed standards for production of certified canola seed would not change. The effect of 73496 Canola on wildlife or biodiversity is neither different than that from other herbicide-resistant crops currently used in agriculture, nor that of other GE or non-GE canola produced in conventional agriculture in the U.S. As described in Chapter 2 of the EA, well-established management practices, production controls, and production practices (GE, conventional, and organic) are currently being used in canola production systems (commercial and seed production) in the U.S. Therefore, it is reasonable to assume that farmers, who produce conventional canola (GE and non-GE varieties), 73496 Canola, or produce canola using organic methods, will continue to use these reasonable, commonly-accepted, best-management practices for their chosen systems and varieties during agricultural canola production. GE canola is also planted currently on the majority of canola acres (95% of acreage in 2008) (Brookes and Barfoot, 2010). Based upon historic trends, conventional production practices that use GE varieties will likely continue to prevail in terms of acreage with or without a determination of nonregulated status of 73496 Canola. Given the extensive experience that APHIS, stakeholders, and growers have with the use of GE canola products, the possible effects to the human environment from the release of an additional GE-canola product are already well known and understood. Therefore, the impacts are not highly uncertain, and do not involve unique or unknown risks.

6. *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*
   A determination of nonregulated status for 73496 Canola would not establish a precedent for future actions with significant effects, nor would it represent a decision in principle about a future decision. Similar to past regulatory requests reviewed and approved by APHIS, a determination of nonregulated status will be based on whether an organism is unlikely to pose a plant pest risk pursuant to the regulatory requirements of 7 CFR part 340. Each petition that APHIS receives is specific to a particular GE organism and undergoes this independent review to determine if the regulated article poses a plant pest risk. Under the authority of the plant pest provisions of the PPA and 7 CFR part 340, APHIS has issued regulations for the safe development and use of GE organisms. As required by 7 CFR 340.6, APHIS must respond to petitioners who request a determination of the regulated status of GE organisms, including GE plants such as 73496 Canola. When a petition for nonregulated status is submitted, APHIS must determine if the GE organism is unlikely to pose a plant pest risk. If APHIS determines, based on its Plant Pest Risk Assessment, that the GE organism is unlikely to pose a plant pest risk, the GE organism is no longer subject to the plant pest provisions of the PPA and 7 CFR part 340. APHIS regulations at 7 CFR part 340, which were promulgated pursuant to authority granted by the PPA, as amended (7 United States Code(U.S.C.) 7701-7772), regulate the introduction (i.e., importation, interstate movement, or release into the environment) of certain GE organisms and products. A GE organism is no longer subject to the plant pest provisions of the PPA nor the regulatory requirements of 7 CFR part 340 when APHIS determines that it is unlikely to pose a plant pest risk. A GE organism is considered a regulated article if the donor organism, recipient organism, vector, or vector agent used in engineering the organism belongs to one of the taxa listed in the regulation (7 CFR 340.2) and is also classified as a plant pest. A GE organism is also regulated under Part 340 when APHIS has reason to believe that the GE organism may be a plant pest or APHIS does not have enough information to determine if the GE organism is unlikely to pose a plant pest risk. A person may petition the agency for a decision that a particular regulated article is unlikely to pose a plant pest risk, and, therefore, is no longer regulated under the plant pest provisions of the PPA or the regulations at 7 CFR part 340. The petitioner is required to provide information under §340.6(c)(4) related to plant pest risk that the agency may use to determine whether the regulated article is unlikely to present a greater plant pest risk than the unmodified organism. A GE organism is no longer subject to the regulatory requirements of 7 CFR part 340 or the plant pest provisions of the PPA when APHIS determines that it is unlikely to pose a plant pest risk.
7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*

No significant cumulative effects were identified during this assessment. The EA discussed cumulative effects on canola management practices, human and animal health, and the environment, and concluded that such impacts were not significant. A cumulative effects analysis is provided in Chapter 5 of the EA. In the event APHIS reaches a determination of nonregulated status of 73496 Canola, APHIS would no longer have regulatory authority over this canola. In the event of a determination of nonregulated status of 73496 Canola, APHIS has not identified any significant impact on the environment that may result from the incremental impact of a determination of nonregulated status of 73496 Canola when added to past, present, and reasonably foreseeable future actions.

8. *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources.*
A determination of nonregulated status of 73496 Canola will not adversely impact cultural resources on tribal properties. Any farming activities that may be taken by farmers on tribal lands are only conducted at the tribe's request. Thus, the tribes have control over any potential conflict with cultural resources on tribal properties. A determination of nonregulated status of 73496 Canola would not impact districts, sites, highways, structures, or objects listed in, or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historic resources. This action is limited to a determination of nonregulated status of 73496 Canola. Standard agricultural practices for land preparation, planting, irrigation, and harvesting of plants would be used on these agricultural lands including the use of EPA-registered pesticides. Adherence to EPA-label-use restrictions for all pesticides will mitigate impacts to the human environment. A determination of nonregulated status of 73496 Canola is a decision that will not directly or indirectly cause alteration in the character or use of historic properties protected under the National Historic Preservation Act. In general, common agricultural activities conducted under this action do not have the potential to introduce visual, atmospheric, or audible elements to areas where they are used that could result in effects on the character or use of historic properties. For example, there is potential for audible effects on the use and enjoyment of a historic property when common agricultural practices, such as the operation of tractors and other mechanical equipment, are conducted close to such sites. A built-in mitigating factor for this issue is that virtually all of the methods involved would only have temporary effects on the audible nature of a site and can be ended at any time to restore the audible qualities of such sites to their original condition with no further adverse effects. These cultivation practices are also being conducted currently throughout the canola production regions. The cultivation of 73496 Canola does not inherently change any of these agronomic practices in way that would cause any impact under the NHPA.

9. *The degree to which the action may adversely affect the endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*
   As described in Chapter 6 of the EA, APHIS has analyzed the potential for effects from a determination of nonregulated status of 73496 Canola on federally-listed threatened and endangered species (TES), species proposed for listing, and designated critical habitat and habitat proposed for designation, as required under Section 7 of the Endangered Species Act. After reviewing possible effects of a determination of nonregulated status of 73496 Canola, APHIS has concluded that a determination of nonregulated status of 73496 Canola would have no effect on federally listed TES and species proposed for listing, or on designated critical habitat or habitat proposed for designation.
10. *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*
    The proposed action would be in compliance with all Federal, state, and local laws. Because the agency has concluded that 73496 Canola is unlikely to pose a plant pest risk, a determination of nonregulated status of 73496 Canola is a response that is consistent with the plant pest provisions of the PPA, the regulations codified in 7 CFR part 340, and the biotechnology regulatory policies in the Coordinated Framework. Pioneer initiated the consultation process with FDA for the commercial distribution of 73496 Canola and submitted a safety and nutritional assessment of food and feed derived from 73496 Canola to the FDA to on February 25, 2011 (Pioneer, 2011). Based on the information Pioneer submitted, and as of May 1, 2012, FDA has no further questions regarding 73496 Canola (US-FDA, 2012). 73496 Canola is compositionally similar to currently available canola on the market. There are no other Federal, state, or local permits that are needed prior to the implementation of this action.

NEPA Decision and Rationale

I have carefully reviewed the EA prepared for this NEPA determination and the input from the public involvement process. I believe that the issues identified in the EA are best addressed by selecting Alternative 2 (Determination that 73496 Canola is No Longer a Regulated Article). This alternative meets the APHIS purpose and need to allow the safe development and use of GE organisms consistent with the plant pest provisions of the PPA.

As stated in the CEQ regulations, "the agency's preferred alternative is the alternative which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors." The preferred alternative has been selected for implementation based on consideration of a number of environmental, regulatory, and social factors. Based upon our evaluation and analysis, Alternative 2 is selected because (1) it allows APHIS to fulfill its statutory mission to protect America's agriculture and environment using a science-based regulatory framework that allows for the safe development and use of GE organisms; (2) it allows APHIS to fulfill its regulatory obligations. As APHIS has not identified

any plant pest risks associated with 73496 Canola, the continued regulated status of 73496 Canola would be inconsistent with the plant pest provisions of the PPA, the regulations codified at 7 CFR part 340, and the biotechnology regulatory policies in the Coordinated Framework. For the reasons stated above, I have determined that a determination of nonregulated status of 73496 Canola will not have any significant environmental effects.

Sydney W. Abel for

for Michael C. Gregoire

Deputy Administrator

Biotechnology Regulatory Services

July 19, 2013

Date

Response to Public Comments on Pioneer DP-073496-4 Canola

On May 29, 2013, APHIS published a notice in the *Federal Register* (78 FR 32231-32233; Docket No. APHIS-2012-0031) announcing the availability of the Pioneer petition, and the APHIS PPRA and draft EA for a 30-day public review and comment period. Comments were required to be received on or before June 28, 2013. The docket folder containing the comments can be located at[1]:

http://www.regulations.gov/#!docketDetail;D=APHIS-2012-0031

APHIS received a total of 36 submissions to the docket from various individuals and groups on the DP-073496-4 canola petition (hereafter referred to as 73496 Canola), PPRA, and draft EA. More than half (23) of the comments expressed general opposition to the development of GE foods and/or 73496 Canola. However, about half of the comments opposed to approval of 73496 Canola represented multiple submissions by individuals and/or organizations.

Thirteen comments supported a determination of nonregulated status of 73496 Canola. They were submitted by canola growers' associations (5), individual growers (4), state agencies (2) and organizations representing oil seed processors (2). These commenters cited several reasons that indicate potential benefits of 73496 Canola, and noted that 73496 Canola will provide an additional variety of canola to combat persistent, yield-reducing pests in production agriculture.

Many of the negative public comments expressed an opinion(s) that could be categorized in one or more of the following: general opposition to genetically modified organisms (GMOs) or GE crops and the domestic regulatory process surrounding GE plants; perceived negative effects on public and animal health, biodiversity, and the environment; lack of consideration for organic production systems; the public right to choose non-GE containing food products.

A number of comments challenged the adequacy of APHIS' preparation and analysis in the Draft Environmental Assessment (DEA). These commenters expressed concern with regard to the scientific basis, structure, scope and analysis of APHIS' NEPA analysis as it relates to the Plant Pest Risk Assessment process. Other comments expressed concern with regard to the substance of APHIS' NEPA analysis and APHIS' analysis of impacts and reasonably foreseeable harm and consideration of alternatives. However, the majority

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[1]Hyperlink cannot be opened directly; copy the link and enter it directly into the address bar of a web browser to pen it.

of public comments did not explain or identify elements in the 73496 Canola PPRA or EA that were perceived to be inadequate or provide any supporting evidence for their claims. Several commenters included multiple attachments that included data published in scientific journals subject to peer review as well as non-refereed scientific reports. APHIS carefully reviewed all comments submitted and accompanying attachments and concluded that they were outside the scope of the EA or did not provide any substantive basis that required the Agency to modify the analysis provided in the EA or its conclusion. However, the Agency did note a few specific issues related to the 4114 Canola EA that were identified from the collective pool of public comments and submissions that warrant further clarification. These were organized into categories and are addressed below.

ISSUE 1:

A few commenters identified three similar issues related to how glyphosate use might be affected by a decision to make 73496 canola a non-regulated article. These included : (1) glyphosate used in conjunction with 73496 canola will differ from the way it is currently used on other GE (genetically engineered) canola varieties; (2) 73496 canola has greater glyphosate resistance than previous GR (glyphosate-resistant) canola varieties, which will cause an increase in the amount of glyphosate applied in conjunction with 73496; (3) GE crops such as 73496 canola, generally promote excessive use of those herbicides that a crop has been engineered to resist, which results in applications that exceed rate limits approved by EPA (i.e., that appear on the product label).

APHIS RESPONSE:

All pesticides are regulated by the U.S. Environmental Protection Agency (EPA). A determination of specific requirements for a pesticide is based on procedures outlined in the Label Review Manual (US-EPA, 2013). It addresses, among other things, level and pattern of use (e.g., allowable application methods, minimum and maximum rates; timing of treatments). As is true for all pesticides, the specifications for glyphosate are codified on the product label (US-EPA, 2013).

All aspects of the event 73496 were characterized thoroughly by the petitioner (Pioneer, 2011). Possible effects attributable to approval of nonregulated status for Pioneer 73496 were also thoroughly analyzed in the PPRA and EA by APHIS (USDA, 2013a, b) consistent with current EPA-labeled uses for glyphosate on canola. Glyphosate is currently restricted to no more than two applications from emergence to bolting on herbicide-resistant canola (Berglund *et al.*, 2007). This seasonal use rate restriction established by EPA would not change for 73496 canola (Pioneer, 2011). Since 73496 canola is not expected to contribute to an increase in total US canola acreage (Pioneer, 2011; USDA, 2013b), the amount of glyphosate applied in GE-canola cropping systems will not change because the maximum allowable amount of active ingredient applied to canola during a single treatment and during a single growing season will be the same for 73496 canola as for other GR canola varieties. Since 73496 canola only provides another HR cultivar for growers to select (Pioneer, 2011), it will neither increase the amount of canola grown in the U.S., nor the amount of glyphosate applied in the U.S.

REFERENCES:

Berglund, D. R., K. McKay, and J. Knodel. (2007). "Canola Production, A-686 (Revised)." http://www.ag.ndsu.edu/pubs/plantsci/crops/a686w.htmPioneer. (2011).

Pioneer, 2011. "Petition for the Determination of Nonregulated Status for Herbicide-Tolerant 73496 Canola." Pioneer, A DuPont Business.

USDA-APHIS. (2013a). "Environmental Assessment for 73496-4 Canola (*Brassica napus)*." *United States Department of Agriculture - Animal and Plant Health Inspection Service* Petition Number 11-063-01

USDA-APHIS. (2013b). "Plant Pest Risk Assessment for 73496-4 Canola (*Brassica napus)*." *United States Department of Agriculture - Animal and Plant Health Inspection Service* Petition Number 11-063-01.

U.S.-EPA, 2013. Label review manual. http://www.epa.gov/oppfead1/labeling/lrm/

ISSUE 2:

Several commenters stated that approval of Pioneer 73496 canola will result in gene flow by cross-pollination that will transmit the 73496 transgene to volunteer and feral populations of *Brassica* spp., causing an increase in their weediness potential.

APHIS RESPONSE:

In its initial petition, the applicant (Pioneer, 2011) thoroughly assessed gene flow potential mediated by pollen transfer and ultimately by seed dispersal in both crop and wild species. While it noted that gene flow from 73496 canola to relatives was possible, there was no evidence that this increased weediness or invasiveness. This finding agreed with a conclusion from a recent review (Andersson and de Vicente, 2010) of data from herbicide-resistant canola records for the US and Canada. They found that during the past 15 years, there were no problems related to interspecific crosses and introgression of herbicide-resistant genes into cultivated or wild relatives of canola that could be identified.

In an addendum to its initial petition (Pioneer, 2011), the applicant responded to an APHIS request for additional information about potential weedy traits associated with 73496 canola. Information provided included survey results reported by Devos et al., 2011 that compared findings from the U.S. and Canada with those from Belgium and Japan where conventional, but not GE-canola, is grown. They concluded that the risk of unintended environmental effects from currently commercialized GE herbicide-resistant canola was no different than that associated with conventional unmodified canola.

Earlier results from field studies in the U.K. (Crawley et al., 2001) are consistent with the findings of Devos et al., 2011. In the British study, conventional and transgenic canola varieties were repeatedly introduced into 12 different habitats between 1990-1992. Monitoring that continued for as many as ten years, revealed no evidence that conventional canola is invasive in natural habitats, nor did it indicate that GE, HR canola was more invasive or persistent than conventional canola.

Based in these and other studies indicating similar findings (e.g., Warwick et al., 2009; Hall et al., 2005; Simard et al., 2005), both the APHIS PPRA and EA (USDA, 2013a,b) concluded that 73496 canola is no more likely to establish feral populations, and the risk is no greater than that for either existing GE, HR canola varieties or non-GE (conventional) canola.

REFERENCES:

Andersson, M.S. and M.C. de Vicente, 2010. Canola, Oilseed Rape. In M. Andersson, M. de Vicente, eds., Gene Flow between Crops and Their Wild Relatives. The Johns Hopkins Press, Baltimore, pp 73-123.

Crawley, M.J., S.L. Brown, R.S. Hails, D.D. Kohn, and M. Rees, (2001). Transgenic Crops in Natural Habitats. *Nature* 363:620-623.

Devos, Y., R. Hails, A. Messean, J. Perry, and G. Squire (2011). Feral Genetically Modified Herbicide Tolerant Oilsee Rape from Seed Import Spills: Are Concerns Scientifically Justified? Transgenic Research PMID: 21526422

Hall, L., K. Topinka, J. Huffman, L. Davis, and A. Good (2000). Pollen Flow between Herbicide-resistant *Brassica napus* Is the Cause of Multiple-resistant *B. napus* Volunteers. Weed Science 48: 688-694.Andersson, M.S. and M.C. de Vicente, 2010. Canola, Oilseed Rape. In M. Andersson, M. de Vicente, eds., Gene Flow between Crops and Their Wild Relatives. The Johns Hopkins Press, Baltimore, pp 73-123.

Simard, M-J., A. Legere, G. Seguin-Swartz, H. Nair, and S. Warwick (2005). Fitness of Double vs. Single Herbicide-resistant Canols. *Weed Science* 53: 489-498.

Pioneer, 2011. "Petition for the Determination of Nonregulated Status for Herbicide-Tolerant 73496 Canola." Pioneer, A DuPont Business.

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USDA-APHIS. (2013b). "Plant Pest Risk Assessment for 73496-4 Canola (*Brassica napus)*." *United States Department of Agriculture - Animal and Plant Health Inspection Service* Petition Number 11-063-01.

Warwick, S.I., A. Legere, M. J. Simard, and T. James (2008). Do Escaped Transgenes Persit In Nature? The Case of an Herbicidde Resistance Transgene in a Weedy *Brassica rapa* Population. *Molecular Ecology* 17: 1387-1395.

ISSUE 3:

One comment indicated that APHIS had not adequately considered impacts of 73496 canola on pollinators.

APHIS RESPONSE:

As discussed in the PPRA, those amino acids in 73496 canola that are essential for honeybee survival are not affected by genetic modification. Appendix 8 of the petition (Pioneer, 2011) includes a large body of data that documents the safety of consuming all types of acetylated amino acids. These data indicate that acetylated amino acids have a history of safe use. Both historical (vanEngelsdorp and Meixner, 2010) and current peer-reviewed publications on honeybee health indicate that the health of bee colonies depends on a balanced diet (Brodschnieder and Crailsheim, 2010). Decourtye et al., 2010, also show that balanced nutrition is best provided by a mixture of different pollens, which are optimal sources of proteins and vitamins for honeybees. This is best supported when a diversity of plants occurs near agricultural areas.

REFERENCES:

Brodschneider, R., and K. l. Crailsheim. 2010. Nutrition and Health in Honey Bees. *Apidologie* 41: 278–294.

Decourtye, A., E. Mader, and N. Desneux. 2010. Landscape Scale Enhancement of Floral Resources for Honey Bees in Agro-ecosystems. *Apidologie* 41: 264–277.

vanEngelsdorp, D., and M. D. Meixner. 2010. A Historical Review of Managed Honey Bee Populations in Europe and the United States and the Factors That May Affect Them. *Journal of Invertebrate Pathology* 103: S80-S95.