TESTIMONY OF JAY VROOM
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BEFORE THE SUBCOMMITTEE ON CONSERVATION, CREDIT, RURAL DEVELOPMENT AND RESEARCH OF THE HOUSE COMMITTEE ON AGRICULTURE
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Mr. Chairman and Members of the Subcommittee:

I am Jay Vroom, President of CropLife America (CLA). CLA is a national trade association representing the manufacturers, distributors and formulators of virtually all crop protection chemicals used in the United States. I appreciate the opportunity to testify before you today.

I want to begin by thanking Chairman Lucas and the entire subcommittee for holding this important hearing and for your ongoing leadership and oversight on all pesticide and crop technology issues. I was pleased to testify before the full House Agriculture Committee just two weeks ago regarding how the Farm Bill impacts the agricultural chemical industry. I specifically highlighted the tremendous contributions our industry makes toward conservation efforts, including soil, water, wildlife, energy and labor conservation.

However, pesticide benefits represent only part of the story. There are a number of policy challenges facing our industry that also merit our attention, including U.S./Canada regulatory harmonization, Endangered Species Act (ESA) compliance, user fees under the Pesticide Registration Improvement Act (PRIA), and National Pollutant Discharge Elimination System (NPDES) permitting under the Clean Water Act.

Regulatory Harmonization

Over the past decade, there has been a significant increase in the amount and complexity of data needed to support registration of pesticides which has placed additional burdens on regulators as well as pesticide manufacturers. As a result, there is a strong interest among regulators and industry alike to achieve international harmonization of the registration processes for pesticide approval, with particular attention being given to harmonizing the regulatory systems between the United States and Canada.

Before granting registration for pesticides, both U.S. and Canadian regulatory authorities perform thorough assessments to ensure that unreasonable adverse effects to human health and the environment will not result from approved uses. However,

these authorities regularly differ in the type of data required, the regulatory review process itself and the time required for regulatory review and approval.

For example, the U.S. Environmental Protection Agency (EPA) may require submission of data on endangered species to support a particular use, while the Pest Management Regulatory Agency (PMRA) in Canada would not. Conversely, Canada reviews studies of the efficacy of agricultural pesticide products, while the U.S. does not. These differences can contribute to the disparate costs of doing business in the United States and Canada and affect the availability of certain crop protection products for use by farmers in both nations.

Equally challenging is the sheer number of pesticide products registered for use in both countries. In 2004, there were 16,115 registered pesticide products containing 1,015 active ingredients in the U.S. and 5,274 registered pesticide products containing 525 registered active ingredients in Canada. Since 1997, more than 149 new active pesticide ingredients and 2,489 new uses have been registered by the U.S. EPA alone.

Several broad principles have been espoused by CLA as the United States and Canada work toward regulatory harmonization. First, significant differences between the U.S. and Canadian copyright, patent and trademark laws must be considered before meaningful harmonization can be totally achieved. User safety, customs regulations, and label harmonization differences will also need to be addressed as part of harmonizing U.S. and Canadian pesticide regulation. In addition, CLA believes the proper forum to achieve harmonization of regulatory processes is under NAFTA and that attempts to achieve reform on a state-by-state basis would be unworkable and counterproductive. Furthermore, harmonization between the U.S. and Canada must reduce the time from submission of an application to a final registration decision and minimize any unnecessary duplication of testing. Harmonization must also facilitate increased cooperation among regulatory officials in both countries in order to achieve the goals outlined by the crop protection industry. Lastly, CLA supports harmonization of the pesticide registration process between the U.S. and Canada because it would provide growers with equal access to products on both sides of the border while contributing to the free trade of crop protection products and treated commodities between the countries.

Because the lack of consistent and harmonized regulatory standards between the two countries has slowed access to new products and new product uses, CLA believes that until these differences are resolved, crop protection companies will continue to struggle with meeting different demands for each system. Although the obstacles are formidable, CropLife America believes that focusing on key regulatory harmonization activities that are essential to both growers and registrants is a high priority and should be addressed in the context of ongoing efforts to achieve full harmonization by various stakeholders.

EPA participates in a variety of international regulatory harmonization activities related to pesticides, including the Organization for Economic Cooperation and Development

(OECD). OECD carries on a continual process of review and revision of international chemical testing guidelines, including residue chemistry and ecotoxicology standards.

OECD has recently completed a major development of more than 80 electronic reporting formats for chemical regulatory studies. CLA has contributed substantially to this effort through comments on the individual formats; however, significant additional effort will be required to practically implement the electronic formats by both governments and industry. The ultimate benefits of the project include the ability of registrants to format a study once for submission to any national regulatory authority; collaboration of national regulatory authorities on product approvals through electronic exchange of study reports and reviews; and progress in international standardization of study reviews.

The Food and Agriculture Organization of the United Nations (FAO), in cooperation with the plant science industry, and other international organizations, including NGOs, developed a voluntary code of conduct, *The International Code of Conduct on the Distribution and Use of Pesticides*, to provide a standard for pesticide regulation, especially useful for those countries that are works-in-progress developing their own adequate national regulatory infrastructures for pesticides. The original FAO Code was published in 1985 and updated in 1989 and again in 2002.

The Code addresses the need for a cooperative effort between governments of exporting and importing countries, as well as other stakeholders, to provide training and promote practices which ensure safe and effective use of pesticides, including the promotion of IPM. The Code also encourages stakeholders to participate in international agreements affecting pesticide distribution and use, including the Rotterdam Convention on Prior Informed Consent (PIC).

Lack of harmonized processes can have real impacts on growers, as differences can affect availability and cost of products. In an August 2004 letter to the U.S. EPA and Canada's PMRA, the National Association of Wheat Growers and the Grain Growers of Canada wrote to express "support for harmonized regulatory systems across the borders of our two countries. On behalf of farmers and crop protection registrants on both sides of the Canadian-U.S. border, we now write to further encourage the development of a seamless joint registration process for crop protection products in the U.S. and Canada. We believe this approach will alleviate the concerns of producers on both sides of the border who want more equitable availability of crop protection products, and will simplify the registration process for manufacturers, allowing them to complete reviews and product approvals more quickly and economically."

The group that is perhaps doing the most intensive work on harmonization at the present time is the NAFTA Technical Working Group on Pesticides (NAFTA TWG). Formed in 1996, the NAFTA TWG consists of representatives from the pesticide regulatory agencies of the three NAFTA countries. The mission of NAFTA TWG is to resolve pesticide registration issues affecting free trade of agricultural commodities across North American borders.

Over the past several years, the NAFTA TWG has made progress in harmonizing science-based test protocols and test guidelines requirements, such as identifying what studies need to be conducted and submitted in the U.S. and Canada. However, significant differences in the regulatory approval processes between the two regulatory authorities still exist. The most significant differences include the registration review time for a new active ingredient; the ability of a registrant to amend a petition after submission; dietary risk assessment procedures; the required content of the pesticide labels; procedures for establishing tolerances or maximum residue limits (MRLs); as well as processes for amending pesticide labels.

A subgroup of the NAFTA-TWG met in Indianapolis, Indiana earlier this month to discuss two pilot projects that would potentially provide interim measures to address concerns of the grower groups. During the meeting, grower representatives from both Canada and the U.S. had the opportunity to present a list of priority products they want to see included in the existing Canadian own-use program and a similar U.S. own-use pilot project being developed by EPA. In addition to the own-use pilot, the NAFTA TWG is also considering a joint U.S./Canada label, where both the U.S. and Canadian use directions would be included on the pesticide container. A few CLA member companies have volunteered products for these trial programs. There are many unanswered questions about both of the pilot projects; however, our industry is committed to finding solutions that provide long-term benefit to the grower community while expediting real regulatory harmonization between the two countries.

It should be mentioned that there are significant stewardship concerns that exist with own-use importation (OUI) programs, and the existing Canadian law that establishes that country's own-use import initiative has provided a number of negative, unintended consequences. The simple discrepancy of metric application rates used in Canada and English units used in the U.S. could easily lead to serious application errors causing crop damage or loss of efficacy. Furthermore, Canada has industry funded stewardship programs to recycle plastic containers and collect unused and unwanted product. The OUI in Canada allows products to bypass normal distribution channels, so Canadian registrants and distributors often pay the stewardship costs for products they did not sell. For an OUI program to function fairly, the Canadian pesticide industry is asking for the groups that import products to pay the same stewardship fees that the traditional distributors would pay. We believe that an operational U.S own-use pilot program would have to address similar stewardship concerns.

Regarding MRLs, Canada's Pest Management Regulatory Agency sought comments this summer on its proposal to revoke the long-standing general limit for residues of pesticides that are not registered in Canada. Because of climatic and cropping differences, more pesticides are registered in the U.S. to treat a wider variety of pest problems than exists in Canada. Thus, produce grown here may have residues that are not specifically approved in Canada. The default MRL of 0.1 ppm has long taken care of many such circumstances, facilitating a vigorous trade in agricultural commodities between our two countries.

The Canadian proposal points out the need for progress towards mutual acceptance of MRLs established by either country. There should be no need for one country's regulatory agency to spend time and resources to duplicate the valuable risk assessment work already accomplished by competent scientists in the neighboring country. EPA and PMRA are making significant strides toward these goals, and should be encouraged and aided by Congress in their efforts.

Despite all of the challenges facing both registrants and the grower community, there are success stories that demonstrate that solutions are possible. During the 1990s, the crop protection industry worked through the NAFTA TWG and USDA's IR-4 Program to address product availability concerns from U.S. canola growers. Since canola was comparatively new in the U.S. and the U.S.-planted acreage is considerably smaller than in Canada, U.S. growers were eager to gain access to crop protection products which have already been registered across the border. Industry responded within the course of a few short years by registering nearly a dozen new pesticide uses for canola. The pressure for importing Canadian products diminished once EPA and USDA worked together to expedite similar products registrations in the U.S.

FQPA Ten-Year Deadline

While EPA continues to make progress on harmonization efforts, the Agency certainly deserves recognition for its achievements under the Food Quality Protection Act (FQPA) in reassessing pesticide residue tolerances by August 3, 2006.

EPA's work over the past 10 years has resulted in the reassessment of some 9,700 residue tolerances. CLA and our members have worked with the Agency in the administration of FQPA, but we have on-going concerns with its implementation. Continuing political pressure has been directed at EPA to push FQPA beyond its original, science-based intent while growers, food companies and the crop protection industry have worked for a more reasoned regulatory policy.

During this 10-year process, many decisions that negatively affected pesticide products were shaped by political pressures. Some of these matters are still open today, such as the battle over the use of ethically produced human clinical and worker exposure data in regulatory decisions. It is important that EPA applies transparency and good science policy to allow statutory standards to be clearly applied to pesticide regulations.

Congress passed FQPA in 1996 and the act went into effect immediately. As a result of the new law, better scientific methodology was developed and implemented, such as reviews of the Environmental Fate model updates. Throughout the reassessment procedure, a wealth of valuable data was generated, including Market Basket residue surveys, exposure data, crop profiles, biomonitoring information, and water monitoring data. At the same time, risk assessment methodology was carried out in a much more transparent fashion.

Industry developments during this period focused on bringing newer, more effective pesticides to the market. Through the Pesticide Registration Improvement Act (PRIA), industry fees allowed EPA to maintain and accelerate its pace on tolerance reassessment and provide improved time lines and predictability for registration of new pesticide products. PRIA will need to be reauthorized rather soon and we and the rest of the registrant community stand ready to work with the House Agriculture Committee to accomplish this on a timely and informed basis.

As a result of FQPA and the efforts of EPA, the food chain, and the crop protection industry, Americans continue to reap benefits from a rigorous and thorough regulatory program and to enjoy the safest food supply in the world.

Pesticide Registration Improvement Act

PRIA was enacted on January 23, 2004. It requires pesticide registrants and applicants to pay specific service fees to EPA for the registration applications that it handles. This law also establishes specific timelines for EPA to accomplish the various registration actions and prohibits certain other user fees for pesticides.

The intent of the law is to provide additional resources for EPA's registration efforts and a more predictable evaluation process. As enacted, PRIA will be effective for five years and it continues the prohibition on the collection of pesticide registration fees (40 CFR Part 152.400), which has been in effect since FIFRA was amended in 1988. PRIA also suspends collection of tolerance fees authorized by the Federal Food Drug and Cosmetic Act (FFDCA) (40 CFR Part 180.33).

CLA has successfully helped lead an Industry Fees Coalition that includes eight trade associations representing pesticide registrants and worked closely with environmental and labor groups in lobbying Congress for passage of PRIA, in defending PRIA since its enactment, and in implementing PRIA with EPA.

In addition to the new registration service fees, PRIA retained and increased the product maintenance fees that support reregistration and tolerance reassessment under FQPA. Industry is projected to pay a total of more than $200 million over a five year period. The registration service fees and increased maintenance fees went into effect in the spring of 2004.

The amount of the pesticide registration service fees and the timetables for the review periods vary somewhat from year to year to provide for phasing in the new timelines. Since 1989, federal budget proposals by various administrations have repeatedly sought to reinstate the original pesticide registration fees for new products (40 CFR Part 152.400) through modification of FIFRA. For FY 2007, OMB has proposed in the President's Budget increasing pesticide user fees from anticipated revenues of $31 million in PRIA and maintenance fees to a total of $87 million by increasing both PRIA and maintenance fees, reinstating tolerance fees and creating a new "registration review fee."

Fortunately, Congress has repeatedly barred collection of these other fees and ignored Administration proposals to modify FIFRA and FFDCA accordingly. Proposals for additional registration and tolerance fees would violate the spirit of the compromise that resulted in the passage of PRIA.

PRIA has been successful in improving the predictability and speed of the pesticide registration process, and CLA calls on Congress and specifically this committee to reauthorize this important law.

Endangered Species Act

One of our industry's most significant policy objectives is the modernization of the Endangered Species Act (ESA). CLA supports practical, balanced and scientifically-sound amendments to the ESA to make it effective in recovering and saving species at risk. We believe Congress needs to amend the ESA to improve the availability of new technology and crop protection products for species habitat recovery. A huge step was taken last fall when the House passed H.R. 3824, the "Threatened and Endangered Species Recovery Act." We call on the Senate to pass similar legislation.

When the ESA was enacted in 1973, there were 109 species listed for protection. Today there are roughly 1,000 U.S. species listed as threatened or endangered, nearly 300 species considered as "candidates" for listing, and nearly 4,000 "species of concern." The authorization for federal funding of ESA activities expired on October 1, 1992, though the U.S. Congress has appropriated funds in each succeeding year to keep the program active.

On August 5, 2004, following coordination with EPA and the United State Department of Agriculture (USDA), the Fish and Wildlife Service and the National Marine Fisheries Service published a joint counterpart regulation, which streamlined the interagency consultation process for endangered species risk assessments for pesticides. This new regulation intended to marry the effects analyses requirement of ESA with the scientific-based, data-intensive environmental analyses required by the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The need for such regulations had been highlighted by a string of ESA citizen suits alleging that EPA failed to consult with FWS and NMFS when registering pesticides. The concerns about current court decisions and threats of additional litigation have created piecemeal regulatory process, as well as unnecessary restrictions for pesticide products. These lawsuits have cost taxpayers millions of dollars as EPA defends itself against a process that does nothing to improve protections for endangered species. Just in the Pacific Northwest states, USDA estimates that the impact of one of the major ESA/pesticides court decisions on agriculture is approximately $583 million annually. There are approximately 10 similar lawsuit filings across the country. Furthermore, just last month, a federal judge in Washington State found portions of the ESA counterpart regulation to be invalid, thus increasing the uncertainty surrounding the pesticide registration process and threatening farmer's access to important crop protection products. Congressional

action is needed so these products, which are so critical for food and fiber production, will not be terminated or compromised in the interim by further court orders or settlement agreements.

NPDES Clean Water Act Permits

In 1972, Congress enacted the Clean Water Act and amended FIFRA. The Clean Water Act authorized EPA to protect the nation's waterways by regulating discharges of large industrial operations and wastewater facilities through the National Pollutant Discharge Elimination System (NPDES). FIFRA provided EPA with the authority to regulate the sale and use of pesticides through a comprehensive registration and labeling protocol.

Although CWA and its NPDES permit requirements have been in effect for over thirty years, no government agency has ever concluded that the application of pesticides in accordance with label directions requires an NPDES "point source" permit, including aquatic mosquito and weed control, as well as terrestrial uses that may result in incidental spray drift entering water. FIFRA already requires strict testing of pesticides to ensure water quality and aquatic species preservation; therefore, an NPDES permit for pesticide applications has always been considered unnecessary and duplicative.

However, in March of 2001, the U.S. Ninth Circuit Court of Appeals ruled in *Headwaters, Inc. v. Talent Irrigation District* that NPDES permits were required for the use of aquatic herbicides to control weeds in waterways. In November 2002, the Ninth Circuit ruled in *League of Wilderness Defenders v. Forsgren* that an airplane used for the application of moth control products in the forest canopy was a "point source" pollutant and therefore aerial spraying of pesticides required an NPDES permit under the Clean Water Act. Other similar cases are pending, and activist groups are now using this unfortunate precedent to threaten lawsuits against American farmers who must make millions of pesticide applications every year in order to maintain viable crops.

Furthermore, since NPDES permits were never intended to be used for pesticide applications, federal and state agencies are not prepared to handle the massive rise in permit requests that would result from farmers who must spray regularly throughout the growing season. In many states, obtaining an NPDES permit is very costly, time consuming and bureaucratic. It is not practical to expect American farmers to bear such a major expense and delay urgent applications in the event of a fast developing pest infestation.

EPA has issued several interpretive statements over the past two years reiterating its position that NPDES permits are not required for pesticide applications directly to or near waters of the United States. A proposed rule is currently pending at EPA, which would codify the agency's position.

While EPA's proposed rule is certainly a positive development, the agriculture industry believes that legislation is the surest way to remove the threat of lawsuits against farmers. EPA has also acknowledged that a rule will not alleviate the threat of litigation. Farmers, irrigators, mosquito abatement districts, fire fighters, federal and state agencies, pest control operators and foresters will all benefit if Congress chooses to clarify current law. We commend Congressmen Butch Otter and Dennis Cardoza and a total of 76 other bipartisan cosponsors for introducing H.R. 1749, "The Pest Management and Fire Suppression Flexibility Act." We encourage Congress swiftly adopt this legislation to resolve this important issue.

Human Clinical Studies

Understanding potential risks to people is usually based on tests performed with laboratory animals. Decades of experience reviewing both animal and human studies, has demonstrated that animal data alone may provide an incomplete picture of safety and risks. Since animals are not able to speak, they can not provide information to assess important subtle effects such as respiratory irritation that could occur at very low exposure levels. Despite the scientific basis for human testing, for nearly a decade there has been intense debate over whether EPA should rely on human data for pesticide registrations.

In early December 2001, EPA sought council from the National Academy of Science on the science and ethics of human testing and simultaneously announced that the Agency would not consider or rely on human data while the Academy was deliberating. CropLife America petitioned the U.S. Court of Appeals stating EPA's announcement to not rely on human data constituted a "rule" that was promulgated in violation of the Administrative Procedures Act. The court agreed and directed the EPA to reinstate its practice of accepting human studies unless and until the Agency lawfully promulgated a rule to change its practices.

In 2004 the National Academy of Science completed its work and published its findings. The Academy acknowledged the potential benefits of human data and recommended that EPA establish a Human Studies Review Board (HSRB) to review and to oversee the scientific and ethics issues surrounding Agency's use of human data.

In late 2005, EPA issued a proposed human studies rule that established the Human Studies Review Board as a Federal Advisory Committee and described the conditions under which the Agency would accept human data. In its proposed rule, EPA had excluded occupational exposure studies. This made sense because occupational studies are different from clinical studies because they are conducted during normal work activities guided by lawful pesticide labels. In its final rule however, and without public comment, EPA decided to include occupational exposure studies. This was a complete surprise to the pesticide industry because EPA had not sought guidance on occupational exposure studies from the National Academy and the Human Studies Review Board was not comprised of experts in these studies.

Furthermore, we question EPA's decision requiring the HSRB to determine the scientific validity of testing—-- such a requirement is duplicative because that determination has already been made by EPA using a wide range of other stakeholder and public input.

In the wake of the Review Board's rejection of several exposure studies designed according to existing Agency guidance, EPA is now awaiting review from yet another science advisory panel in 2007. This delay has halted the ability of the pesticide industry to collect occupational exposure data necessary to protect workers and will likely result in further confusion and inconsistencies between the Human Studies Review Board and the new Science Advisory Panel.

Soil Conservation

Herbicides have been used on more than 90% of US acreage of most crops for the past forty years. The use of herbicides has greatly reduced soil erosion, decreased the need for millions of hours of difficult labor by workers in the field, and has helped keep American agriculture competitive due to their low cost and high degree of effectiveness. The performance bar is very high for herbicides. Farmers expect more than 95% season long control of all key weed species in their fields with one or two applications and without injury to their crops. No other weed control technology is remotely close to delivering these benefits.

The USDA has reported that cropland soil erosion declined by 700 million tons per year between 1982 and 2003. This reduction has coincided with adoption of practices that conserve soil. No-till crop production, in which the soil is left undisturbed by tillage, is the most effective soil-conserving system. Elimination of tillage means that the grower must rely on herbicides to control weeds. No-till acreage increased to 62 million acres in 2004.

The external costs of soil erosion include higher susceptibility to flood damage, lost reservoir capacity, increased water treatment costs, and adverse impacts to waterway navigation and recreational activities. Research from the CropLife Foundation indicates that by reducing erosion from cropland, no-till reduces these external losses by $1.5 billion per year. Of course, the farmer benefits too. With more soil staying on his land, the farm remains more productive and profitable.

Labor and Energy Conservation

The use of herbicides greatly reduces the need for both fuel and labor on U.S. farms. Without herbicides, the need for fuel would increase by 337 million gallons, since twice as many cultivation trips would be needed to replace herbicide spray trips. Furthermore, cultivators use four times more fuel per trip than herbicide sprayers.

Herbicides also play a key role in U.S. ethanol production, a sector which is projected to expand to seven billion gallons in 2010. Corn is the primary raw material for US ethanol production. On average, herbicides increase U.S. corn production by 20%. If corn

growers were unable to use herbicides, the decline in corn production would be equivalent to the total projected ethanol capacity of seven billion gallons.

If farmers did not use herbicides, the alternatives for weed control would be increased mechanical cultivation and increased hand labor to pull weeds. Research from the CropLife Foundation indicates that a minimum of 1.1 billion hours of hand labor would be required at peak season for hand weeding, necessitating the employment of seven million more agricultural workers. Even with the increased cultivation and hand weeding, crop yields would be 20% lower. Approximately 70 million workers would be needed to prevent any yield loss without herbicides.

Organic growers do not use herbicides to control weed populations, but rely on mechanical cultivation and laborers with hoes instead. Growers of organic vegetable crops spend close to $1,000 per acre for weed control in comparison to the $50 per acre spent by growers who use herbicides. Each acre of organic vegetables requires between 50 and 100 hours of hand labor for weed control. Each hour of labor is budgeted at $10 which covers a minimum wage, plus administrative, supervisory, transportation and benefit costs. It should come as no surprise that the production of organic crops is being outsourced to countries such as Mexico and China where the cost of farm labor is $1 per hour or less.

Water Conservation and Quality

CropLife America's member companies know that protecting water quality and conserving scarce water resources in agriculture must often start in the laboratory, where products are developed, tested, and evaluated. Their efforts start with using the best science available to develop good products that can provide the needed results. This attitude and approach have led to major water conservation and water quality benefits in the U.S. and worldwide.

One excellent strategy to successfully conserve scarce supplies of water for agricultural and other critical uses is to develop crop varieties that are uniquely adapted to drought and other forms of weather stress. Our member companies have created plant varieties that are drought resistant or tolerant, allowing a crop to be produced with less irrigation and thereby conserving scarce water resources. We have also created plant varieties that have resulted in innovative crop production practices, like the use of pre-germinated rice seeds that require 15 to 20 percent less total water to produce a crop relative to more traditional rice production practices. Our science has also led to a crop protection product that can control weeds in rice production that previously could only be controlled through flooding rice land, thereby avoiding the use of water that could be better dedicated to other critical purposes. Of course, all herbicides for all crops are designed to control weeds that would otherwise compete with the crop for water.

Crop protection science and water quality protection go hand-in-hand. Over the 10-year process of developing and bringing a crop protection product to the market, our companies ask three primary questions related to water quality considerations:

1) Does the compound reach water and how?
2) How does the compound behave if it reaches water?
3) How does the compound affect water quality and impact living organisms?

Numerous rigorous scientific tests are conducted on a candidate compound and its metabolites to answer these questions. We also use the same science to determine if sound, reasonable and practical management strategies are available to ensure that the products can be used without unreasonable adverse water quality risks. The studies conducted involve identifying the compound's decomposition pathways within different crops, soils and water circumstances. Once the degradation patterns have been established, analysis methods are developed for measuring residues.

Other studies analyze the effects of the compound and its major metabolites on living organisms such as non-target insects, birds, soil and aquatic animals, and soil micro-organisms. Such trials are run not only during product development but also after their market launch. In fact, products are subject to continued monitoring and re-evaluation, taking into account the latest state of the art developments. As far as aquatic organisms are concerned, compounds are tested not only on fish, but also on algae and water-fleas. Overall great efforts are made to constantly improve the testing methods for the protection of even the smallest organism in natural water bodies.

Our companies are also continuously engaged in research and development to find ways to minimize the amount of water needed to spray crop protection products while maintaining their efficiency and efficacy. New spray nozzles, for example, can reduce water consumption by approximately 80%, from 530 gallons per acre to 105 gallons. The use of low volume water-based sprays combined with application nozzles that target each crop row can decrease water use by 95 percent or more, from 210 gallons of water per acre to only 7 or 8.

Even after our products reach the market and are being used in the field, our member companies continue to pursue innovative and practical crop protection product management strategies. We have been leaders in the marketing and use of streamside buffer zones and filter strips as a way to improve water quality, reduce soil erosion, and increase wildlife habitat.

Likewise, our products also help conserve water in non-agricultural settings. One critical example is their use as part of an integrated program to control noxious and invasive plant species. For example, the salt cedar tree was originally introduced into the U.S. from Central Asia to combat soil erosion near rivers and lakes. But salt cedar is often able to thoroughly out-compete native plant species and in the process transpire enormous quantities of ground water into the atmosphere in arid environments. One mature salt cedar plant may withdraw up to 198 gallons of water per day. Where these trees have become established, they lower water levels in rivers, streams, and groundwater tables, reducing water supplies for urban, agricultural, wildlife and recreational uses. Crop protection products have been used in public initiatives as part

of an overall management strategy in key areas of the U.S. to control salt cedar. In one prominent project in Texas and New Mexico, control of salt cedar with herbicides has resulted in an estimated increase of over 15 billion gallons of river flow during a year long season.

Our aquatic products also preserve and protect water quality through the elimination or control of noxious or exotic aquatic plant species in rivers, streams, lakes and estuaries. Like salt cedar, these alien invasive plants out-compete the native aquatic plants, and in the process diminish or eliminate plant biodiversity and degrade or destroy fish habitat. These invasive aquatic plants include species like Eurasian water milfoil, water hyacinth, hydrilla, purple loosestrife and Melaleucca. Used as part of an overall aquatic invasive plant management strategy, aquatic herbicides can selectively control populations of invasive plants and support the restoration of native plant communities and quality aquatic wildlife habitat. Control of these invasive plants can have substantial water conservation benefits because their sheer mass can impede or stop the flow of water and increase rates of evaporation and other pathways of water loss that would otherwise be used for irrigation.

Wildlife Conservation

One often over-looked contribution that pesticides make is in the area of wildlife habitat restoration and conservation. Conservation scientists rank habitat destruction and nuisance plants as the two most serious threats to endangered species, both plant and animal. Many of our pesticides provide significant benefits for endangered species by reducing the amount of land needed to produce crops, thereby preserving critical wildlife habitat.

Equally important, pesticides increase the diversity and quality of natural habitat through the effective control of non-native or nuisance plants that seriously threaten endangered species as well as damage lakes and streams, farms and natural areas.

Two years ago, CropLife joined forces with one of the country's leading conservation organizations, Ducks Unlimited (DU), and established a Conservation/Technology Initiative. This unique partnership harnessed the power of crop science technology in conjunction with wildlife biologists' expertise to reduce the abundance of unwanted exotic grasses and other weeds at wildlife refuges and other sites where DU seeks to restore native grasslands. The key here is to use herbicides and fungicides to suppress the weed growth long enough for native grasses to reestablish themselves. Because many native plants are perennials, once reestablished, they can flourish for decades under proper management.

This initiative also conducted a demonstration pilot project to show how the use of certain pesticides could enable farmers to economically switch to winter wheat from spring wheat in the northern plains—again to the benefit of duck populations.

CropLife member companies are in the second year of this five-year partnership with DU and the results are already very encouraging. Habitat restoration is well underway at 20 sites nationwide, and the benefits to waterfowl and other wildlife are being recorded. Beyond the contributions being realized for wildlife conservation efforts, these projects are also having a beneficial ripple effect for outdoor enthusiasts. At a number of the areas, control of nuisance plants and weeds is helping aquaculture, water-related recreational activities, hunting and fishing, bird watching and natural scenic restoration.

Economic Benefits of Pesticides

Fungal pathogens are implacable enemies of crop production in the United States. Every spring and summer, fungi release countless numbers of reproductive spores into the environment. If a spore lands on a susceptible host plant under the right conditions, it will grow a germ tube and penetrate the host plant's tissues. The resulting fungal infection will cause the plant to fall ill, rot, and eventually die. The use of fungicides to protect crops can prevent or cure such infections, preserve crop yields, and protect farmers' income.

Uncontrolled plant disease epidemics have altered human history, determining the outcome of wars, starving millions of people, and contributing to the decline of civilizations. The unavailability of fungicides left farmers and their dependent civilizations defenseless against plant diseases.

Prior to the 20th century, much of the nation's fruit and vegetable crop typically rotted following infection by plant diseases. In the early 1900s, elemental fungicides provided defense against many fungal diseases as copper and sulfur sprays became common. Most fruit and vegetable crops have been treated with fungicides for the 100 years since initial adoption.

The introduction of synthetic fungicides in the 1940s revolutionized chemical control of plant disease. Newly discovered fungicidal molecules were rapidly adopted by U.S. farmers for their expanded range of disease control and reduced toxicity to crop plants. The replacement of many sulfur and copper sprays with synthetic fungicides, which are used at significantly lower rates, reduced the aggregate total amount of fungicides applied to U.S. crops by 50%.

The Crop Protection Research Institute (CPRI), an arm of the CropLife Foundation, recently concluded a major study on fungicide benefits in the U.S. For 231 diseases of 50 crops, fungicides are the primary means of defense from fungi. Each year, American growers spray 108 million pounds of fungicides at a total cost of $880 million. If left untreated, yields of most fruit and vegetable crops would decline by 50% to 95%. Growers gain $12.8 billion in increased production value from the control of plant diseases with fungicides.

CPRI has done similar research on herbicide benefits. U.S. farmers have sprayed herbicides on close to 90% of the nation's cropland acreage for the past thirty years. The value of the use of herbicides in 2005 is estimated to have been $16 billion in increased crop yields and $10 billion in reduced weed control costs. Without herbicides, the largest production loss would be in corn, with a reduction of 2.7 billion bushels.

Increased fuel and labor costs have made the costs of alternatives to herbicides higher. The aggregate cost of cultivation and hand weeding as replacements for herbicides increased from $14.3 billion in 2001 to $16.8 billion in 2005, resulting in a net increase in weed control costs without herbicides from $7.7 billion in 2001 to $10 billion in 2005. The value of the crops also increased significantly between 2001 and 2005, which means the 20% loss in production without herbicides is worth more in 2005 ($16 billion) than in 2001 ($13 billion). Overall, the value of herbicides to U.S. agricultural production increased from $21 billion in 2001 to $26 billion in 2005.

Three trends that occurred in crop production and weed control between 2001 and 2005 are noteworthy, relating to no-till, biotech, and organic crop production. Two of these practices are dependent on herbicides and one is not. The number of no-till acres on which herbicides substitute for tillage increased from 52 million acres to 62 million acres. The U.S. acreage planted with genetically modified herbicide-tolerant crops increased from 66 million acres to 94 million acres. Meanwhile, organic agricultural production increased by 100,000 acres to 1.4 million acres. Organic farmers substitute labor and tillage for herbicides, which is very costly. There is not likely to be a vast expansion in domestic organic acreage due to the high cost of labor in the U.S. in comparison to many developing countries.

Mr. Chairman, thank you again for the opportunity to share our views with the committee.

Committee on Agriculture
U.S. House of Representatives
Required Witness Disclosure Form

House Rules* require nongovernmental witnesses to disclose the amount and source of Federal grants received since October 1, 2004.

Name: Jay J. Vroom

Address: 1156 Fifteenth Street, NW, Suite 400, Washington, DC 20005

Telephone: (202) 872-3849

Organization you represent (if any): CropLife America

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1. **Please list any federal grants or contracts (including subgrants and subcontracts) you have received since October 1, 2004, as well as the source and the amount of each grant or contract. House Rules do NOT require disclosure of federal payments to individuals, such as Social Security or Medicare benefits, farm program payments, or assistance to agricultural producers:**

Source: NONE **Amount:** _____

Source: _____ **Amount:** _____

2. **If you are appearing on behalf of an organization, please list any federal grants or contracts (including subgrants and subcontracts) the organization has received since October 1, 2004, as well as the source and the amount of each grant or contract:**

Source: NONE **Amount:** _____

Source: _____ **Amount:** _____

Please check here if this form is NOT applicable to you: _____

Signature: _____

* Rule XI, clause 2(g)(4) of the U.S. House of Representatives provides: *Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof. In the case of a witness appearing in a nongovernmental capacity, a written statement of proposed testimony shall include a curriculum vitae and a disclosure of the amount and source (by agency and program) of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) received during the current fiscal year or either of the two previous fiscal years by the witness or by any entity represented by the witness.*

PLEASE ATTACH DISCLOSURE FORM TO EACH COPY OF TESTIMONY.

Biographical Sketch

JAY J. VROOM
President & CEO
CropLife America

Jay Vroom became the chief executive of the trade association now known as CropLife America in 1989 and has been a leader in US agribusiness trade associations for his entire career. At CropLife he heads the organization that is the leading US trade group for the crop protection chemicals and crop biotechnology industries in the States. CLA is primarily involved in issue management and advocacy for the industry and its US agricultural allies.

CLA does Federal and state lobbying, science and regulatory advocacy, and proactive litigation work on behalf of its members. Through CLA's membership in the Brussels-based global federation CropLife International, the US organization is a strong voice in many international venues on critical issues to the plant sciences industry. Vroom is a senior member of CropLife International's Executive Committee.

Based in Washington, DC, CropLife America has a principal staff of more than 30 professionals with expertise in communications, lobbying, science and technical work, legal affairs, and market research. CLA operates with several affiliated organizations—CropLife Foundation of which Vroom is Board Chairman, CropLife Political Action Committee of which he is Treasurer, and RISE

(Responsible Industry for a Sound Environment) which is a parallel organization to CLA working on issues pertinent to the non-agricultural uses of pesticides and fertilizers. Also affliliated with CLA are the Ag Container Recycling Corporation (ACRC), RAPID (the industry's electronic commerce standards and advancement organization) and the American Agronomic Stewardship Alliance (AASA).

Prior to joining CropLife staff Jay Vroom served in various executive capacities with the National Fertilizer Solutions Association, the Merchants Exchange of St. Louis, and The Fertilizer Institute. He was graduated with honors from the University of Illinois College of Agriculture. Vroom was raised on a grain and livestock farm in north-central Illinois and he continues to own that farming operation.

June 2005