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U.S. Ambassador Schieffer Keynote Biotechnology Speech

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Report Highlights:

On April 21, U.S. Ambassador J. Thomas Schieffer addressed the 8th annual Life Sciences Summit in Tokyo. About 400 participants from government (including Diet members), industry, academia and the press attended. The event is organized by the Life Science Summit Executive Committee, an umbrella organization representing Japan's biotech companies, and is supported the Japan Bioindustry Association (JBA). The text of the speech is provided below in English and in Japanese.

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ENGLISH TRANSCRIPT

Ambassador J. Thomas Schieffer
Keynote Address at Life Sciences Summit
April 21, 2008
Tokyo Prince Hotel
Tokyo, Japan

AMBASSADOR SCHIEFFER: Thank you Chairman Omi and Chairman Utada. It is an honor for me to be here with you today. The eighth annual Life Sciences Summit will bring together some of the finest minds in Japan and the world to discuss, analyze, and educate us on the exciting prospects and achievements of biotechnology. I am both humbled and appreciative of the opportunity to address you.

Let me also compliment the Life Science Summit Executive Committee and the Japan Association of Bio-Industries Executives for making this event possible. You benefit Japan and the whole world with your sponsorship. I also want to commend former Finance Minister Omi for your leadership in this endeavor. You understand that science and technology can be the salvation of mankind, and you have tirelessly worked for its advance. Thank you for what you are doing.

We are continually reminded of the importance science and technology play in the health and well being of our citizens. In 1900 at the turn of the century, the life expectancy of a child born in America was 46 years. At the turn of the century in 2000, the life expectancy of a child born in America was 78 years. Those differences were even greater here in Japan, and they occurred because science and technology - especially biotechnology - made such dramatic advancements during the 20th century. Prospects for advancement in the 21st century are even greater. What you will be talking about at this summit is important, because it has the potential to change people's lives in such a positive way. Whether it is used in medicine, industry, or agriculture, biotechnology can bring health to the sick, prosperity to the poor, and food to the hungry. Our job is to help it along the way so that its benefits can be felt as quickly as possible by as many as possible.

Today, I would like to share with you some thoughts on the benefits of biotechnology in agriculture. When I was the United States Ambassador to Australia, I came to understand just how hi-tech agriculture was after visiting the farm of Peter Corish, the president of Australia's National Farmers Federation.

Peter showed me tractors that used Global Positioning Satellites to plow the straightest furrows you have ever seen; lasers that leveled his fields just right so that they could get the maximum use of water; and imagery taken from space that would enable him to apply fertilizer where it would do the most good. But the most impressive thing Peter showed me that day was the cotton crop he was growing. It required far less water than the cotton his father used to grow. You could walk among the rows and see good insects like lady bugs that would protect the cotton naturally from predatory insects that would otherwise destroy it, because this cotton required 50% less pesticide than older strains - pesticide that would kill good insects as well as bad, and pesticide

that would need to be removed from irrigation water before it could be returned to the river from which it came. Not only would this cotton crop be easier to grow, less harmful to the environment, and use less natural resources than its predecessors, its yield per acre would be incredibly higher than the old cotton Peter used to grow. Where did Peter get the seemingly magical seeds that got this crop growing? From a company in America that had spent millions of dollars on the scientific research needed to produce them.

For hundreds of years farmers have been experimenting with ways to breed better livestock and grow better crops. In the 18th century men like George Washington and Thomas Jefferson took copious notes on the progress of their crops in an effort to replicate good harvests. They also made note of the productivity and desirability of their livestock and racehorses.

Then along came an Austrian monk in the 19th century named Gregor Mendel, whose scientific experiments led to the discovery of modern genetics. But Mendel's theories were not accepted as truth until the beginning of the 20th century. As prominent a scientist as Charles Darwin thought they were all wrong. But Mendel was right - certain genes can be dominant to others and lead to an improved animal or plant life.

Today, thousands of scientists around the world have built on Mendel's work to prove that science can produce better foodstuffs than ever before. When I left Peter Corish's farm that day in Australia, I realized two things. Agriculture is a hi-tech industry, and that technology will allow us to feed and clothe the world. No one need go hungry anymore.

Why then is there such public resistance to so many of the advances made by science in agriculture? Why are some people so afraid of things like genetically modified organisms, or GMOs as they are called? Why do some people fear products produced more by the latest science than products produced by the oldest superstitions? Is it because science is moving faster than our ability to explain it? Maybe. It seems to me that all of us whether we are in or out of government have a duty to defend science and common sense against irrationality and ignorance. Science has a much better chance of giving us what we need than myth and conspiracy theories.

Biotechnology allows farmers to plant crops that will be less susceptible to disease, drought, and pests and more receptive to fertilizers and weed control. That will translate into higher yields, greater productivity, and safer products for consumers. What will be so bad about that?

For the last decade, the use of biotech crops has been increasing at double digit rates. In 2007, over 114 million hectares of biotech crops were grown in 23 countries around the world. The United States is the biggest biotech producer, followed by Argentina and Brazil. To put it into perspective, the area planted in biotech crops last year was almost three times the size of the total land area of Japan. The number of farmers planting biotech crops has surged past 12 million. Some of these farmers are American, Australian, Canadian, and European, but more than 90% are small, resource-poor farmers from the developing world. The use of biotech crops is massive, growing, and transcends a country's level of economic development.

Why are farmers around the world using this technology? Because it works. It delivers higher yielding crops that are easier on the environment and most of all are safe for human consumption. Farmers are also able to use these crops to increase the profitability of their farms,

and improving the financial well-being of farmers is a policy most governments - including Japan - like to follow.

It might surprise you to learn that Japan is already the world's largest importer of biotech crops, because millions of tons of biotech grain are imported for use as animal feed and for vegetable oil. But many Japanese consumers are reluctant to have biotech foods "on the end of their chopsticks." In 2004 and 2005, the U.S. Embassy participated in a study about Japanese views on agricultural biotechnology. The results were disappointing.

We already knew that Japanese consumers are concerned about food safety, but we learned that they fear biotech foods for "unknown" long-term health effects. Many Japanese consumers said they did not feel that biotechnology offered them any benefits. Even more worrying was the fact that Japanese consumers in the study were unsure if the Japanese government itself was favorably disposed toward biotechnology.

One factor that keeps biotech foods off Japanese shelves at the supermarket is the government requirement that they be labeled as "GMO." So far, no Japanese food manufacturer or retailer has been willing to test the market for GMO-labeled, consumer-ready food. We are hopeful that new products, like oils made from grains with health benefits, will change this. Biotech soybeans, for instance, enable more foods to be trans-fat free. Biotech soybeans are also rich in omega-3 oils which the human body cannot make. Studies show that a diet rich in omega-3 fats will reduce the risk of cardiovascular disease. While these new products will have to be labeled as "GMO," we hope they will change consumer's existing views on biotechnology.

Biotech crops also have the ability to combat malnutrition and disease. According to the World Health Organization, dietary deficiencies in vitamin A, iodine, iron, or zinc, can be major sources of disease and death. A lack of vitamin A alone causes up to 500,000 children a year to go blind. Consumption of biotech crops like "golden rice" could prevent that from happening. Right here in Japan a team of government, university, and company scientists has developed a rice that can act as a cholera vaccine. This kind of biotechnology could reduce suffering and save millions of lives.

The U.S. Census Bureau predicts that the world's population will grow by 50% to 9 billion souls in 2042. This will represent a tripling of the earth's population in less than a century. Higher incomes and urbanization are leading to major changes in dietary consumption. The world food economy is increasingly driven by a shift toward livestock products. We are seeing huge increases in per-capita consumption of fish, meat, and milk products, especially in Asia. This is not bad; it is good. But we must plan for its ultimate impact.

It is likely that an additional 1 billion metric tons of cereal grains will be needed annually by 2030, which is a 50% increase over production in 2000. World cereal demand will double by 2050 with developing countries in Asia accounting for half of the increase in global demand.

How will all these billions be fed? Through technology. We must employ it to raise more food on less land, so that we will minimize our environmental footprint. Without an increase in farm productivity, an additional 1.6 billion hectares of arable land would have to come under the plow by 2050. If that happened, it would have catastrophic consequences for the environment and

make a reduction in greenhouse gases almost unachievable. Feeding people without destroying the environment will be a challenge. Mankind needs all the tools that are available, and none are better than biotechnology.

Japan already imports more than 60% of its caloric intake. Food security is and should be of great concern, but Japan is just one part of a much bigger Asian market. The longer Japanese consumers are uneasy about biotechnology, the longer they will face the possibility of being shut out of world markets, and that is the essence of what good food security is all about.

The United States is Japan's largest supplier of food. Japanese grain buyers have already felt the effect of the ethanol boom - tight corn supplies, and record high commodity prices. The United States can assure Japan that we will remain the world's most reliable food supplier and our farmers are capable of growing enough for both you and us. But Japan must understand that biotechnology is a key factor in our ability to meet growing demand.

There is currently a great deal of research going on into the development of improved food crops. Drought-resistant wheat and disease-resistant rice are just two examples. Given the fact that non-biotech crops must compete for limited land with more profitable biotech crops, it will be increasingly costly for Japanese importers to demand biotech-free commodities.

Food quantity, quality, and cost are also threatened by a number of things outside our control. Droughts, floods, climate change, plant diseases, war, agricultural terrorism, pollution, political instability, and a reduction in farmland will put downward pressure on food supplies. It makes sense to make the most of the biotechnology we have and can develop.

From this perspective, it is imperative that Japanese regulators and policymakers follow closely the global use of biotechnology. Industry and government need to educate the Japanese public so that consumers understand the rationale, safety, and benefits for using biotech crops. There is nothing to fear from science. Science and technology are the instruments for our advancement, not the chains for our enslavement. Japanese scientists have contributed enormously to the advancements we have made in medicine and industry. Why should they not be called upon to use their talents in agriculture?

Unfortunately, that is not the case today. Japan finds itself increasingly isolated from the rest of the scientific world in agriculture, because it does not commercially produce plants that have been enhanced using modern biotechnology. A number of public institutes are doing plant research, but most have not progressed to the field trial stage because of strong Japanese consumer objections. Globally, biotech seed sales are approaching \$8 billion, but here in Japan, because there is no market for biotech seeds, the private sector has little incentive to develop crops for Japan's specific climate.

Because consumers are suspicious of biotech crops, the Japanese government has a complex regulatory system that involves the Ministries of Agriculture, Health, Environment, and the Food Safety Commission. The world's major agricultural biotechnology companies have offices in Japan, but they are not doing research. Their primary function is to navigate Japan's complicated regulatory approval process so that biotech products - which are grown by farmers elsewhere -

can be sold here. These companies are not investing in the future of Japanese agriculture the way they are in the future of the United States, China, Brazil, and other countries' agriculture.

For the most part, Japan has chosen not to compete with other countries in this strategically important technology. Some in the Japanese government recognize the problem but are uncertain how to challenge existing consumer views. In June 2007 "Innovation 25," the Japanese cabinet's paper on mid- and long-term policy goals called for an "increase of public awareness on biotechnology, especially agricultural biotechnology." In July 2007, a MAFF-sponsored panel published an interim report calling for the establishment of seven biotech research priorities. These are positive signs but pale in comparison to the resistance some consumers and politicians have for the technology. For example, 11 prefectural and local governments have rules that further limit the cultivation of biotech crops. These rules are political responses that have no basis in science.

This reaction to biotechnology is driving away some of Japan's best scientists. Think about it: If you are an exceptional Japanese scientist who wants to conduct research into genetically engineered crops, your best bet will be to move to the United States, Canada, or some other country where there is not as much hostility to the subject matter.

Finally, the United States understands that transparent, science-based regulations are essential to a successful and safe agricultural biotechnology industry. The U.S. Environmental Protection Agency, the Food and Drug Administration, and the U.S. Department of Agriculture share the responsibility for food safety in the United States. Any biotech product sold in Japan from the United States will already have undergone rigorous comprehensive safety testing and evaluation by the U.S. scientific community. Biotech crops that will be exported to Japan will be the very same ones that are eaten every day by over 300 million Americans. Rest assured, there are no separate safety standards for biotech products that the U.S. exports and the products consumed by the American public.

And it is not just Americans that are vouching for the safety of these crops. Thousands of government and academic scientists in Canada, the European Union, and Japan itself have also investigated their impact on human health and the environment. These research reports have appeared in scientific journals around the world and provide regulators and companies with comprehensive data with which to judge their decisions. More importantly, in the decades that biotech foods have been on the market, there have been no documented cases of their doing harm to people or the environment.

Safety is enhanced with sensible regulations, but it makes no sense to spend limited resources on monitoring products that have already been proven safe. The money would be better spent on combating food safety issues like listeria, salmonella, and the residue effects of pesticides. Japanese, Americans, and Europeans die every year from food-borne illnesses, yet there has never been a single instance of an illness, let alone a death, caused from consuming biotech foods. Educating a wary public to this fact is the key to overcoming the skepticism Japanese feel toward biotech products.

The hard truth is that Japan is in danger of being left behind. Others in Asia are seizing on the potential of agricultural biotechnology. China is Asia's largest investor in biotech crop research.

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