

of national and international political and military events, the world is establishing a whole new relationship with food, and particularly with food proteins. A few decades from now, history will show the decisions you have made and things you have done during this particular time as having far-reaching consequence on the political, social, military, and economic structures of the nations of the world, as well as on the food technologies, food habits,

health and well-being of her people. I sincerely hope that your deliberations at this Conference will be as thoughtful, as profound, and as constructive as this distinguished group of delegates can make them, for the results of your efforts will be heard around the world for years to come.

Again, our welcome, and Godspeed with your work during these next three days.

Welcome Address

J. BALTES, President,

Deutsche Gesellschaft für Fettwissenschaft e.V., Munster, West Germany

As President of the Deutsche Gesellschaft für Fettwissenschaft, I am honored to welcome you to the World Soy Protein Conference.

The great response to this Conference of the American Soybean Association is evidenced by the number of participants, over 1,100 from 46 countries, and also by the many committees and corporations, which are listed in the Conference program. This unusual response, I attribute to the importance of the topic of the Conference and also to the distinguished experts who are participating in this meeting.

I think that the individual participants, as well as we sponsors, are full of expectations, expectations for the future use of soybeans, not only on an economic basis, but on scientific and social bases. To illustrate these expectations further, please allow me to review the history of the agricultural economy.

The American Soybean Association is 53 years old; its previous annual meetings and conferences mainly were addressed to American farmers and producers of soybeans. Now here is a Conference with an economic, scientific, and technically important program being held in Germany! I think that one of the reasons for this is the long tradition of processing soybeans in this country. Ca. 40 years ago here in this country, more than 1 million tons of soybeans were processed, far more than in the U.S. At that time, Germany was known as the country with the largest oil milling industry in the world. Of course, all of this makes this Conference especially welcome to us. However, I do not want to talk about old times; I want to outline the present great importance of the soybean.

All of you know the role of the soybean in the industrialized countries of North America and Europe as the dominant protein source for animal feed and as the most important source of vegetable oil. In eastern Asia, it is one of the most important foodstuffs. Ca. 90% of the annual world production takes place in the U.S. and China. The world demand increases ca. 7% each year which means a doubling within 11 years. We can view U.S. soybean exports as a barometer for this increase. They have grown phenomenally since the early 1960's from a few \$100 million to more than \$2 billion in 1972. No other product

has exceeded this, not even the high technology products, like computers and jet aircrafts; and the demand continues to grow, as we can see from the prices.

How can we meet this rising demand? In comparison to other cultivated plants, like wheat, corn, etc., which since 1950 have shown an annual 4% increase in yield per/acre/year, the soybean has shown an average of 1% increased yield. To harvest more soybeans means to plant more soybeans; this is what happened in the U.S. this year. The production increase since 1950 has grown 400% and was obtained basically through expansion of the acreage, which means that this year 1/6 of the total U.S. acreage was planted with soybeans. In July, we heard that a reduction of the acres planted for 1974 was not intended. However, not long ago, Lester B. Brown at the Overseas Development Council (*Science*, 182:227) reported that the U.S. Department of Agriculture had indications that there would be a reduction of the planted acreage in 1974, supposedly as a result of this year's record crop. If this should be the case, there will undoubtedly be further price increases, with or without the U.S.S.R. as customers.

How and where can we solve the problems inherent in this situation? Obviously an attempt can be made to try to use high grade protein from soybeans more efficiently than is possible in animal feed. This is the main subject of this Conference which we, especially we European skeptics, should demonstrate, if possible: how to make the soy protein available for human consumption. Basically, this is not new to us, because in eastern Asia this has been done for centuries. For the western world, there is the added responsibility of adapting soy protein to the nutritional requirements of the modern society, in other words, making it a desirable food product and making it equally acceptable as meat. The solution to this problem is important, and we have heard much about it and about what remains to be done. Now we would like to hear about it all first hand.

This, I think, is what the sponsors and, of course, the participants expect of this Conference. Hopefully this Conference will have productive results. We wish great success to all in achieving this objective.

Remarks by Senator Carl T. Curtis

CARL T. CURTIS, U.S. Senator from Nebraska and member of the Committee on Agriculture

Representing a soybean-producing state as I do in the U.S. Senate, my concern naturally is for the well-being of the producers of this most vital commodity.

In our efforts to provide the people of the world with the products of this small bean, which contains the protein

so vital to human health and well-being, we must not forget the producer.

We must work from the premise that these individuals who take the economic risks associated with any type of agricultural production deserve a decent wage for their

labors and a decent return on their investment. As the U.S. Secretary of Agriculture has said, "Profit will bring about the needed production."

There is little doubt that the world protein market is being transformed from a buyer's market to a seller's market. Because nearly one-third of the world's population consumes soy products directly, there is the possibility that

some may urge "international price-fixing" of this commodity. In my view, this would be the ultimate mistake and would be the most serious constraint possible on efforts to expand supplies of high quality protein.

I believe our twin goals of adequate world food supplies and fair prices to farmers will be realized.

Proposal for World Protein Research Network

HUBERT H. HUMPHREY, U.S. Senator, Minnesota, and Former U.S. Vice President

INTRODUCTION

Today I hope that you will permit me to speak as an American and as a member of the U.S. Senate. Therefore, the emphasis of my speech will be upon things as we see them or as we seek them out from the American vantage point. However, I would hope that my experience in public life has conditioned me to think in terms of world needs and world opportunities, as well as the needs and opportunities of my own particular country. I am grateful to the American Soybean Association for its efforts to make this Conference a memorable one, and it is just that.

I know that many of you have had a good time from a social point of view; but more significantly I think that all of us have had an educational experience. I have looked over and visited the many exhibits that are here, and I can honestly say that I have learned more about protein, the soybean, and other forms of protein from this conference and these exhibits than in any time in my life. I only hope that what has been done here can be repeated in other parts of the world time and again.

Might I give just this word of friendly advice. You are talking to each other here, men and women knowledgeable in the field of agricultural production, agricultural processing, and distribution. Many of you here are capable scientists and technicians in the field of food technology, particularly in protein research and development. But you are a small part of the total public. You must take your message—your message of production, of research, of nutrition, and of the battle against malnutrition—to every country in the world; otherwise, you will be hiding your light under your bushel, keeping this information primarily for yourselves and your companies or your particular office of ministry. All of us here are public servants, no matter whether in private enterprise, governmental service, or academic life. The world needs to know what you know. People who are illiterate and uneducated need to know what you know; people who are sick and needy should know what you know. Your message needs to be brought to the attention of a troubled world.

FOOD PRODUCTION AND SOCIETY

I want to speak to you today in some broader dimensions than just the World Soy Protein Conference. I want to talk to you about food and population. I do not claim to be an expert; I am a politician, a public man. Politicians and public men need to know that experts should be on tap, never on top. We need your professional counsel and advice, but let me make it clear to you that whatever you want or hope to do will be conditioned by the political and economic environment in which you must work.

I know that many of you here want to think from the producers' point of view. I believe that the best incentive for production is a profit. I believe that other incentives for production are education and training. Surely another means of encouraging production is research. I put at that

point, public policy. We can get education, training, and research; then public policy becomes involved—public resources, public opinion, political decisions. No longer is it just the decision of the producer or even the distributor or the processor.

I have to say to my fellow Americans what I said to you privately. As a man who comes from the Midwest and essentially a rural background, I am mindful that it is one man-one vote in our country and in most of the so-called free countries of the world. That means that the rural population has a small percentage of the vote in the U.S. and a smaller percentage in Germany or in France or Britain or any other country—a dwindling percentage year after year. The trend is toward urbanization. Therefore, it is imperative that those of us who are concerned about food, food production, food technology, and food research, are able to convince and persuade the overwhelming majority of people who are not involved in this work.

I know many of you have said "Well, if the politicians would just leave us alone." They will not! That is the problem—they will not. I heard the U.S. Secretary of Agriculture Earl Butz yesterday speak about the consumer, but the consumer is a fact of life—he is there, he has a vote, he determines governments—and we cannot ignore him. Now that does not mean that we let an ill-informed electorate make decisions. It means that we try to inform and educate the electorate. And when we do, then we will have policies that can be sustained.

I thought I would pass along those few observations, because I have been in the minority on agricultural policy in the U.S. Congress for years, because most of the members of Congress are not rural or rural-oriented; they are highly urban and urban oriented. It has been difficult to sustain any kind of national food policy in a society that has the big media and the big city. There are no television networks in rural America; they emanate from New York, Chicago, and Washington. The full limit of the agricultural life of those cities is several petunia plants, and occasionally a flower garden. The print medium—great as it is and vital to a free society—has had little knowledge of or interest in agriculture until this past year, when it appeared that we might have a serious supply problem or until the prices went very high, according to our older standards.

We have trained thousands of journalists about the stock market but not about the wheat, the soybean, the cattle, or the pork markets. To them the stock market is in New York. The market that they were interested in is slips of paper, not tons of feed grains. And because of all this, we have a poorly educated public on matters relating to food, food supply, distribution, processing, and nutrition. So this morning, I want to emphasize the importance of taking this message that you have received here in these hours of study and deliberation back to your constituency, to your country, to your neighborhood, to your newspaper, to your television and radio, to your university, and to your farm cooperative, wherever it may be. The problem with educated talented people is that they talk to themselves.