

Sugar Beet Research and the Sugar Act

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It is a pleasure and an honor and a privilege to be here with you today, to be associated with you distinguished men of science as you embark on this, the Twelfth General Meeting of the American Society of Sugar Beet Technologists.

In looking over your full schedule of sessions for the next three and one-half days, I am indeed impressed—as anyone must be—by the broad scope of your work and the high goals you have established for yourselves. Your program is evidence that you are continuing your relentless search for ways to add still more to the tremendous contribution you and your colleagues have already made to the revolutionary progress of this dynamic American industry.

We hear and read much about the modern revolution in American agriculture, the sweeping changes that enable a farmer in one hour of work today to produce four times as much food and fiber as the farmer produced in one hour of work forty years ago. Sometimes overlooked is the basis for this great revolution—research. The keynote of our progress in agriculture, as in other fields, is research, coupled with the practical application of the new scientific discoveries which research develops. And behind that research, the thing that makes it fruitful, is the never-ending drive of people like you to learn more and more of nature's mysteries and even to improve upon that very nature when it is possible.

More than a century ago, Abraham Lincoln described the stimulation that agricultural research gives to the mind, and suggested the limitless scope of such research. He did this so effectively that his words, spoken in Milwaukee on September 30, 1859, we may fittingly use today to set the tone and suggest the breadth of your meeting here.

*"I know nothing so pleasant to the mind" Lincoln said—
"as the discovery of anything that is at once new and valuable—
nothing that so lightens and sweetens toil, as the hopeful pursuit
of such discovery. And how vast, and how varied a field is agri-
culture, for such discovery. . . . Every blade of grass is a study;
and to produce two, where there was but one, is both a profit
and a pleasure. And no grass alone; but soils, seeds, and seasons
—hedges, ditches, and fences, draining, droughts, and irrigation
—plowing, hoeing, and harrowing—reaping, mowing, and thresh-*

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ing—saving crops, pests of crops, diseases of crops, and what will prevent or cure them—implements, utensils, and machines, their relative merits and to improve them . . . the thousand things of which these are specimens—each a world of study within itself.”

In thus finding, in Lincoln's words of more than a hundred years ago, a theme which is indeed appropriate for your meeting today, we are reminded that your work, to be appropriately evaluated, must be viewed for the long range. The vagaries of wind and rain and heat and cold may cause sharp variations, in some years, from your otherwise steady advancements—there may be occasional disappointments and departures from your long-range rate of progress.

Last year's sugar beet crop, for example, was a disappointment in a great many parts of the producing area, and the total crop was a disappointment to everyone.

Although acreage planted in 1961 was nearly 15 percent greater than the acreage in 1960, sugar production from the crop will be about the same as the 2,475,000 tons produced in 1960; last summer there were reasonably-based estimates as high as 2,800,000 tons of sugar. The yield of beets per acre in 1961 was only 16.5 tons, the lowest yield since 1955. To compound the felony, the sugar content in many areas was low. The average sugar content looks as if it will turn out to be the lowest in 25 years. The combination of low yields and low sugar content was completely contrary to the normal relationship between per-acre yields and sugar content.

The 1961 crop does not mean our technology has failed. The poor crop resulted from a combination of factors that could not be controlled even by you who have unveiled and harnessed the mysteries of genes, male steriles and hybrids—an unusual combination of natural adversities covering much of the beet area the like of which this industry has seldom experienced, on such a widespread scale, all in a single crop year.

The spring was unduly wet in some areas and unduly dry in others. Abandonment of planted acreage was nearly double the rate of the year before, and in one state more than 13 percent of the planted acres were abandoned. Heavy, washing rains caused thin stands in many areas. Hail damaged the crop in at least four states. Water supplies for irrigation were short in many parts of the mountain and central states. In the largest producing state, beets planted the previous fall were good but the spring-planted beets seemed to attract a host of insects and insect-borne

diseases. Early wet snows and winter storms in many other states caused additional losses of beets late in the harvest period.

All in all, it was a pretty rough year. But in spite of the natural adversities, an all-time record tonnage of sugar beets was produced—17,966,000 tons, 9 percent greater than the year before and 35 percent larger than the 10-year, 1950-59 average. With anything like normal sugar content, the industry would have also hit a spectacular new high in sugar production.

We may therefore consider the experience of 1961 as a combination of adverse conditions which is, we hope, wholly unlikely to occur again. That is not to say that we should ignore the experience, for perhaps it does point to some areas in which intensified effort is desirable. Perhaps research should be stepped up in the development of still hardier varieties, still better quality, still more effective disease and insect control. Perhaps it will be possible in the future to keep even a year of unusual adversity, such as 1961, from causing so great a dip in your chart of upward progress. Also, perhaps you may see if the techniques now used in forecasting crop yields may be improved. I am prompted to make this suggestion by the fact that the industry did not realize what was happening this year until the eleventh hour.

For the long run, however, we must look at averages and trends, not at a single year. And in looking at those long-range averages, anyone can see that you have done a terrific job.

For the basic advancements the industry has made in this century—or the last fifteen, or ten, or five years—have been technological advancements, the results of your research, gains in the field and in the factory that have made the American beet sugar industry the efficient industry that it is today.

Of course I know there are still problems and there always will be. For your work is never done. Your achievements of today are merely the starting points for your work of tomorrow. There is always the challenge of "How can we do it better?" Without meeting this challenge we die.

Let us see how you have been meeting and answering this challenge during the 15 years from 1946 to 1960, the longest recent period for which complete statistics are available.

In 1946, the industry produced 10,863,000 tons of sugar beets. In 1960, production amounted to 16,530,000 tons—an increase of more than 5 and one-half million tons or 52 percent. This was achieved by an increase of only 17 percent in harvested acres—818,000 acres in 1946 compared with 957,000 harvested acres in 1960.

Obviously, this means that you increased the yield of beets per acre, and you did—from 13.28 tons per acre in 1946 to 17.26 tons in 1960, an increase of 30 percent.

Sugar production increased even more than beet production or beet yields—from 1,568,000 tons of beet sugar in 1946 to about 2,475,000 tons of beet sugar in 1960, an increase of 58 percent.

Mind, you, this increase of 58 percent in sugar production took place when there was an increase of only 17 percent in the number of harvested acres.

Obviously again, technological advancement was the reason, this time expressed in yield of sugar per harvested acre. In 1946, an acre yielded 1.92 tons of sugar, while in 1960, the average acre yielded 2.58 tons of sugar, an increase of 34 percent in those 15 years.

Truly, these are remarkable achievements, the concrete results of your combined efforts in agriculture, factory operations, and chemistry. Your achievements have been a primary factor in keeping the industry alive and progressive, in the face of a continuing cost-price squeeze, both in the factory and on the farm.

These achievements also have a direct bearing on sugar legislation—on the kind of law which the industry needs and must have in order to continue its parade of progress—for legislation must reflect and even forecast the achievements of science, or there is trouble ahead.

To put this another way: Unless the quota provisions of the Sugar Act permit a growth in the beet sugar quota which at least keeps pace with the technological advancements of the industry, your progress is nullified and pressures build up which could cause explosions having far-flung repercussions.

The truth of this statement is demonstrated by our experience of the past.

You will recall that the Sugar Act of 1948, the first revision to be enacted after World War II, imposed a fixed ceiling on the beet sugar industry and other segments of the domestic sugar producing industry for a temporary period. Those fixed quotas may have seemed generous at the time, but the progress of the industry was such that we were, before long, bumping our heads against the ceiling. When domestic producers again were permitted to share in the growth of our continuously growing sugar market, in the amendments passed in 1956, the beet sugar industry's share in that growth was set at about 22 percent. It was anticipated then that 22 percent would provide sufficient quota to allow for the industry's technological advancements and in addition to permit a modest growth in the industry.

But you have proved to be better than the Congress thought you would be. Your research has developed the new miraculous, high-yielding hybrid sugar beet seeds. You have developed the long-sought-for monogerm seed, and by patient plant breeding worked into that seed the desirable characters you earlier had worked into the multigerm seed. You have greatly improved all sugar beet cultural practices. As a result of your practical research, the technological advancements you have made, the increase in yield per acre has far outstripped the increase in beet sugar quotas provided by the "growth formula" written in the 1956 law. On the basis of about 150,000 tons average annual increase in United States sugar consumption, the 22 percent accruing to the beet sugar industry amounts to about 33,000 tons. But the technological advancements of the industry result in an average increase in production each year of between 40,000 and 50,000 tons of sugar at a constant acreage figure.

To keep production within the quota levels of the present law, we would have had to reduce sugar beet acreage sharply in recent years—if misfortunes had not come to the offshore domestic producing areas of Hawaii, and Puerto Rico. A series of catastrophes—hurricanes, droughts and strikes—has plagued those areas, resulting in production well below their quota levels. Substantial amounts of the deficits in those quotas were allocated to the beet sugar area. From 1957 through 1961, the beet area received allocations of nearly one and one-half million tons of Hawaiian and Puerto Rican deficits. Without these allocations, the only alternative to reducing acreage would have been to pile up burdensome inventories of beet sugar.

Now we know that dependence on uncertain deficits from other domestic areas—dependence, in short, on someone else's misfortune or inability—is not the best way to maintain a stable climate conducive to a healthy beet sugar industry. So the industry's legislative committee has sought to develop a legislative program for the future which would at least minimize that dependence, and put the beet sugar quota on a sounder basis.

A program has been developed which has the support of all the domestic sugar producing and refining groups—the beet sugar industry, the cane sugar refiners, and the cane industries of Louisiana, Florida, Hawaii and Puerto Rico.

The program would establish a new basic beet sugar quota which would recognize the industry's recent achievements in production and marketing, a quota of 2,665,000 tons at the current level of sugar consumption. For the future, the industry's pro-

gram would reserve for the beet sugar industry a sufficiently larger share of the normal increase in consumption to accommodate your accomplishments, as fully as we can anticipate their trend, and to permit some expansion of the industry.

The program would include a growth formula which, on the average, would provide for an increase in the beet sugar quota, above the proposed new base, at the rate of about 75,000 tons of sugar a year. We hope that this will achieve the purposes we seek. We hope that this time we have more accurately estimated your ability to increase the per-acre yields of sugar.

In this connection, I recall that in a talk prepared for your meeting exactly ten years ago I raised the question as to whether it would be safe to predict, then, that in the next 25 years you would double the average production of sugar per acre. Experience has shown that such a prediction may have been on the optimistic side, but you have made considerable progress toward that achievement, and the industry's current legislative program has been developed in line with your demonstrated long-term rate of progress.

Along with increases in the basic beet sugar quota and in the share of future growth for the beet industry, the legislative program also envisions increases in the basic quota and growth percentage allocated to the mainland cane sugar producing industry. These two continental producing areas—the beet sugar area and the mainland cane sugar area—have both demonstrated a willingness and an ability to provide a larger share of sugar for the American market than they have been permitted to supply in the past.

Our experience with Cuba shows how quickly a supposedly reliable and friendly foreign source of sugar for American consumers can become unreliable and unfriendly. Yet our dependence on foreign sugar is still as great as it was before the Cuban supplies were cut off. Not a single ounce of the former Cuban quota has been allocated to domestic producers—it has all been allocated to foreign countries. Under the present law, we still are obliged to depend upon foreign nations for nearly half—over 45 percent—of our annual sugar supplies.

Repeatedly, the Congress has stressed the importance of a domestic sugar-producing industry for national defense and strategic reasons. As recently as June 6, 1960, the House Committee on Agriculture said in a report that a primary purpose of the Sugar Program is to “make it possible, as a matter of na-

tional security, to produce a substantial part of our sugar requirements within *continental United States* . . ." (Italics supplied).

Surely in these troubled times it is in the national interest to increase the percentage of sugar we obtain from the sugar industry of the continental United States.

Of course, in legislation as in research, the high hopes we have at the beginning of a project may not always be fully realized. When the cauldron of Congress boils, vapors as strange as the vapors in your laboratories occasionally ensue. Mutations as unexpected as those you encounter in your greenhouses and test plots frequently occur in legislation between the time a bill is dropped in the hopper in the House and the time it reaches the President's desk for his signature.

Whatever may take place on the legislative front, however, cannot diminish the importance of your work. The industry will continue to rely upon you—scientists, technologists—to maintain industry advancement, to continue and improve present high rates of efficiency, to intensify your unceasing efforts to reduce production costs both on the farm and in the factory, to keep the beet sugar industry among the most progressive industries in America.

And the nation will continue to rely upon this industry for a large share of its sugar with the assurance that this is *one* source of supply that is not and cannot be dominated by the Communist world—that American-produced beet sugar is available here and now, in the continental United States, and is not subject to the uncertainties of unstable foreign governments.

To the extent that you contribute to the dependability of the beet sugar industry—and your contribution on this score is indeed large—you contribute to the stability of America.

This is a thought which I hope will give you heart and inspiration as you conduct your discussions and your studies this week on your myriad subjects—each subject "a world of study within itself."