woman, who wins one of the chairs I offer and that I pledge to be first
class goods for what they are intended, secures them on the high merit
or quality of cheese, and I take the position that any man who wins
one of these chairs is helping his neighbor, helping every man in the
cheese and butter markets in the world, as the two articles draw their
material from the same source and can not well be separated, and
what little I have done in the past to help the industry has been on
lines of duty as a citizen of Wisconsin, and I receive my compensation
in full by seeing the great industry improve.

Wisconsin Cheese Makers, my earnest wish for you is that you may
continue in the great work you are doing to help feed more than one-
hundred millions of people of this great nation, and may God bless
every one of you by helping you to good health, strength, and determina-
tion to succeed in your every earnest effort for building still higher
the industry for the good of our fellowmen. Be loyal to this great
nation that is peopled with the best people in all the wide world, and
that you will sacredly guard the old flag of our country that we all
love so well.

With my kindest wishes to all,

Very sincerely yours,

S. A. Cook.

PASTEURIZATION OF FACTORY BY-PRODUCTS

CHAIRMAN: Dr. O. H. Eliason, State Veterinarian, and Mr. C. P.
Norgord, Commissioner of Agriculture, are to address you on this.
The subject is "Relation of Pasteurization of By-Products of Butter
and Cheese Factories to Tuberculosis"—something to that effect, and
they want to use charts and they ask you to remain quiet for a few
minutes until they get started because they want to distribute circulars
through the audience.

"The Status of Tuberculosis in the Cheese Sections of the State".
That subject refers to the pasteurization of creamery and cheese fac-
tory by-products. The pamphlets or circulars that Mr. Norgord has
will be left on the table and anyone wishing one of them may step up
to the table and pick one up.

DR. ELIASON: Mr. President and Members of the Cheese Makers'
Association, Gentlemen and Ladies: This is no new subject. This is
something that has been thrashed over in this state and in other states
for a great number of years. Some years ago there was an experi-
ment made by our College which tended to show the distribution of
tuberculosis through a creamery. It was made in the vicinity of Cott-
tage Grove, Wisconsin, and showed the percentage of tuberculosis in
the herds owned by contributors to this creamery. It was found that
inside of that district there was a greater amount of tuberculosis than
there was immediately outside of it. It was in the day when all the
cream was separated by a common separator. I think if you will
think over the situation a few minutes you can see how that could be
done. Supposing there was one tubercular herd in that vicinity. This
was done 300 and some odd days a year, and it would seem it might be successful at the end of the year anyway. This is only one experiment and the same thing has been carried on to a great extent throughout the state.

It is true not only of creameries, but it is true of cheese factories where the whey and products, any of them, are brought back to the farm in a raw stage from a common melting pot. From all the products of the whey you are going to take back to your farm disease, whatever it contains.

We all know, now at least, that milk is one of the greatest disseminators of contagious disease. That being true, we will pass on to some other fact in connection with the travels of tuberculosis and the effect which the distribution of tubercular milk has upon our pocket book. I am not going to talk to you very much upon the health proposition this afternoon, I am coming to you with a straight dollar and cents proposition, although I may call attention to it indirectly, but this is a matter which is a business matter.

We have found in different parts of the state there is considerable tuberculosis among the herds, and it is so much so that the packers of this city and of Chicago are really discriminating against Wisconsin hogs because their losses are too large in proportion to those of the other states. It may be interesting for you to know—and by the way I might tell you that this is not information we have in every newspaper, it is not a very cheerful fact, it shows we are working at any rate so far as tuberculosis among hogs is concerned—we took several points at which Federal inspection is maintained. Fort Worth, Texas, has .8 of 1%, Denver, Colorado, 3.1%, St. Paul 5.4%, St. Louis 2%, Omaha 9.4%, Chicago 14.3%, and last but not least is Milwaukee which comes with 24.3%.

MEMBER: What does that represent, Doctor?

DR. ELIASON: The percentage of hogs that are found infected with tuberculosis at the packing house where Federal inspection is maintained. That does not mean that all of these 24% are thrown out. About 2% are thrown away. Still the whole carcass is condemned. What we mean by original packers is a hog in which tuberculosis is found where the head or the lard or the loins may be thrown away.

MEMBER: What percentage of those hogs were fed on whey or skim milk?

DR. ELIASON: I will bear on that later on. In looking over the general situation, of course, we are looking for a cause. We find that the rest of these hogs are fed more on other products than on whey, skim milk and slops from creameries. They are fed on corn for the most part through the corn belt, but Wisconsin is primarily a dairy state, we have more whey, we have more skim milk to use up and this is used by the hog. And there is no better indicator of tuberculosis than the hog. Where there is a tubercular herd of cattle or wherever there are tubercular slops or any product brought back to the farm, there you are going to have tuberculosis among hogs. Some-
times the hogs are even more searching than the tuberculin test, because if there is tuberculosis present in the milk the hog will show it. Does that answer your question?

MEMBER: The question was what percentage of hogs are coming from the cheese district and what percentage from the creamery district?

DR. ELIASON: Before answering that I will just call your attention to that fact on this chart. When tuberculosis is found in the carcass of a hog, even though the carcass is not condemned, there is a loss on that carcass and the loss on that is estimated at 90 cents per hog. On the carcass as condemned we place the figure of $20, on the carcass as actually lost. In the years 1915 and 1916 the loss on hogs actually slaughtered was $7,815,670. You probably appreciate that prices are higher now than then.

Cudahy Bros. of this city wanted to find out where this came from, so they took an individual shipment when it came in, when there was an entire carload from a certain place, they took that shipment of hogs and placed it into a separate yard and they slaughtered that in its entirety so they could find out what percentage of these hogs were affected. Possibly I had better read this.

(Percentages from different towns in the state read from chart)

That extends from Birnamwood on the northwest and Black Earth in the other direction and clear down to the state line. The average per cent which was found in the packing house at that time from those shipments, which were strictly Wisconsin shipments, was 31%. You understand the packer doesn’t lose this money, it is simply an overhead charge and he buys those hogs so that he can afford to stand that loss. We, as I said, lose just that much valuable stuff.

We know we can be protected by putting these products through a method of pasteurization or sterilization heating, and that is the only method at the present time other than cleaning up the herds whereby we can go and put a stop to this loss. You know we are in Wisconsin a dairy state. You know that better than I do. In the state of New York you have more milk, but it is not made into butter or cheese as much. The milk is sent to the city and consumed by the children and the hog escapes. The hog gets corn and consequently he doesn’t get so much tuberculosis. Here in Wisconsin we feed him these products and there is no way he can escape. These facts were brought to our attention.

I will just call attention to the law passed last legislature asking that the Department of Agriculture draw up some rules and regulations, and that is now contained in this article which is ready for mailing, and every cheese factory will be supplied with these regulations and suggestions which are furnished by the Dairy and Food Commission and the College of Agriculture for the performance of this work.

I don’t want to take up too much time on this subject. Unless there are any important questions you would like to ask me right now I will turn over the rest of the time to Mr. Norgard.
MEMBER: Which loss would be the biggest, the loss of hogs or the loss of coal by pasteurizing?

Dr. Eliason: There are certain benefits that come from the heating of whey, you are no doubt familiar with that as well as I am. You all know that whey is one of the most indigestible feeds when it is in a cold state. When it is thawed out the warm, heated whey is much more valuable as a feed than it is when it is cold. Not only that, but if this whey is heated and then taken home in the cans to the farmers, your milk cans are not going to be treated with all kinds of bumper germs. The heating of buttermilk doesn’t do it much good, but this is a cheese convention so the creamery men can have their own troubles. So far as the heating of the whey is concerned, every authority I have come across so far has admitted that the feed is far superior in its heated state.

Chairman: The Doctor is putting up to you some reasons for this pasteurization, then we will put the question up to the Agricultural Department and then the Dairy and Food Commissioners.

Prof. Sammis: I suspect that a number of people didn’t understand the first time going over the subject that 31%, the average figure at the bottom of the chart. Does that refer to the number of hogs lost by tuberculosis?

Dr. Eliason: The 31% represents the total number of animals which were found affected with tuberculosis, both the animals which are tanked and those which only show minor affections in which only part of the carcass may be tanked.

Mr. Lee: That is one out of every three hogs.

Dr. Eliason: Practically one to three.

Mr. Bruhn: Would it not be more feasible to go to the root and get the cows that have the tuberculosis? For instance in a factory having four or five hundred cows contributing milk there is perhaps only a dozen of them that show tuberculosis. It seems to me a good deal cheaper to do away with those cows.

Dr. Eliason: It is my humble opinion that the eradication of tuberculosis ought to be done little by little, more economically than it has been up to the last year, and that the only way we can do that is by the assistance of the creamery and cheese factory element, that they will assist us in using those cows for a time or until they can be eliminated. If we took all of the cows that are affected if would seriously cripple the farmers with herds.

Mr. E. C. Damrow: I believe as Mr. Bruhn does, that we should get at the root of the evil. We have got the Dairy and Food Commission coming around to tell us what to do, why not have the State Veterinarian have an army in the field and go out to the farmer and tell him to clean up his herd and not put the burden onto us factorymen?

Member: Is the law enacted, Doctor?

Dr. Eliason: Yes, sir.

Member: I would like to hear the sense of the law in a few words. I think but very few of us here know about it.
DR. ELIASON: Chapter 592 Laws of 1917, sub section 1 of section 5. "All by-products of creameries, skimming stations, cheese factories or condenseries shall, before being returned to any farm or feeding station, be heated to at least 145° F. and held at this temperature for at least twenty-five minutes or when not held at the above temperature for at least twenty-five minutes, shall be heated to a temperature of at least 180° F."

I call your attention to the fact that tuberculosis was not the only disease which was spread by this process.

Mr. E. C. Dambow: I don’t doubt but the pasteurization of whey or milk will help a whole lot, but of course we are not striking at the root of the evil as has been brought up by some of the cheese makers. This milk comes into the creamery or cheese factory and is all mixed up. The intention of the law is this, to take care of this by-product we feed our four legged animals. How about the food we feed our two legged ones, your and my babies? (Applause) When we catch a bull by the horns we usual go to the front, not get him by the tail.

I heartily agree with this law, but the loved ones are left at the mercy of the germ and the disease that is in our food product. We are spending about a half a million dollars to wipe out the disease of our stock. Who takes care of my children and your children and you and me, is there anything provided for that? I am willing to pay the tax, don’t cut down on the tax. Our Dairy and Food Commission say they haven’t got the funds to work with. I am willing to pay the price, but give me my money’s worth, and every man here feels the same way.

And another thing at this stage of the time. I am not a cheese maker,-and we have other things to consider just now. The price it costs to save these hogs! I think it is a cheap proposition to save the hogs. Can you get the coal? I think we are all in favor, if it is good, to take care of the diseased product. It would be a good thing to take care of the disease germ that comes back in the butter and the milk.

Mr. Marty: I would like to ask the Doctor the origin of tuberculosis in the hog and the contributory causes outside of the by-product of the dairy.

Dr. Eliason: Do you mean entirely away from cattle of any kind or any other method connected with the factory?

Mr. Marty: The origin of the disease in the hogs on this continuation of the disease.

Dr. Eliason: The continuation of the disease in the hog kingdom is not very great if the hog is left alone, because he doesn’t live here on earth long enough to get very seriously infected. He acquires that principally from other agencies, by following the steer or the feeder or through any other products from the dairies, the only one we concede as a factor in hog tuberculosis.

I thoroughly agree with the sentiments of the gentleman to the
right on some of those ideas. The subject of tuberculosis is one we could discuss all night.

**Mr. Marty:** What is the nature of tuberculosis in the hog?

**Dr. Eliason:** The principal glands found infected are what we call the cervical glands, the glands up near the tongue. Then the next the bronchial glands, those glands which are in a sense immediately below the trachea, immediately below the two lobes of the larynx. You all know of the colon as it hangs in the peritoneum. About three inches from the colon is a chain of lymphatic glands and in those glands you will find the infection frequently.

**Mr. Marty:** Is it inherited?

**Dr. Eliason:** I don't say but what it could be. A sow that is kept several years could be a factor in disseminating this, but it doesn't last even in a herd of cows where a number would be slaughtered.

**Mr. Marty:** Isn't it a fact, then, that the disease could continue without the assistance of the foreign feeds, could be right within the feeding or the nursing of the young pig?

**Dr. Eliason:** Yes it could be in animals that are kept long enough to be infected to that extent.

**Member:** In Minnesota we have had that law in effect as long as I can remember. We have been compelled to pasteurize the whey. I have been in the game fifteen years. We pasteurize all skim milk before it is returned to the farmer. I notice our rate is only 5%. We are a dairy state, you will all have to admit that. Do you think that may be some cause of that?

**Dr. Eliason:** Of course Wisconsin hates to concede that Minnesota is a factor in the dairy industry, but for practical purposes we will admit that. I don't see any other reason why that low percentage could be. I don't doubt in the ordinary cow you have tuberculosis there as well as here.

**Mr. Uhbelohde:** I would like to ask the Doctor if it is safe to eat raw pork at all. We use summer sausage, for instance. Is that safe?

**Dr. Eliason:** Well no. Any uncooked pork is unsafe you may say as a general rule, not only for tuberculosis, but from other causes. Trichina is also found in spite of the fact that in inspected meat they look for it as well as they can. I think there would be more danger from trichina in raw meat than from tuberculosis. As a rule tuberculosis does not prevail in a carcass very much outside of the lymphatic glands unless it is very far advanced.

**Member:** Will the surroundings on the farm have anything to do with the spread of tuberculosis?

**Dr. Eliason:** Even if the whey is pasteurized that will not prevent the spread of the disease among the herd, but it will prevent the spread from that particular farm to the other farms in the community.

**Mr. E. C. Damrow:** I would like to ask the Doctor if it would not be possible to get such a law enacted to get at the root of the evil? I honestly believe, especially with tuberculosis, if we can take that stock that is now affected I believe that disease can be weeded out of that
stock the same as in man. I am not sure on that whether it could be
done or not, but if it would be possible or if it would not be possible
to slaughter such stock. I think if the Doctor or his Department
would work up some sort of resolution at this convention, every mem-
ber at this convention would be in favor of that. It would be an awful
expense on the state to do that, but it is worth the price, in order to
get the disease weeded out. I would like to know if there is anything
possible to work out in your opinion?

Dr. Eliason: I will leave the answering of that question to Mr.
Norgord because he will bring that out.

Mr. C. A. Damrow: As I understand it we have 29 farmer members
in the state assembly. Here was a thing to roll off from the shoulders
of the farmers and onto the cheese makers and the creamery men and
make them work as cheap as possible in order to do their work. I
honestly believe the only way for you to do is for your office to have
a bunch of workers to go out from county to county, from farm to
farm in order to get at the root of the evil. We try to pasteurize.
There are a good many milk dealers peddling milk in the cities who
are not pasteurizing their milk. Make the man who reaps the benefit
pay for it instead of putting it onto the cheese makers.

Dr. Eliason: These questions are departmental, and I may say we
have already outlined a plan such as you have mentioned and Mr. Nor-
gord will explain it. I may say that this measure was held up prac-
tically all through the session of the legislature. Pretty nearly every-
body in the legislature knew of its import and listened to the discus-

Mr. Norgord: Mr. President, Ladies and Gentlemen and Members
of the Cheese Makers' Association: We are proposing this measure
to you not because we wish to impose a hardship upon you, because we
know a hardship imposed upon you reacts upon us, and so we have
thought this out pretty carefully in regard to how much of a hardship
it is going to be and whether or not it is worth while, and we have
come to the conclusion, as has the state of Minnesota, that the tuber-
culosis question is so serious we have got to attack it not only from
the standpoint of pasteurizing by-products of the cheese factories and
creameries, but from every standpoint where we can attack it, and
we have made plans, as Dr. Eliason has said, to attack it from all
possible angles.

I am glad you are interested in this proposition and are developing
something of a spirit in connection with it. I am glad to hear the
gentleman speak on the subject he did a while ago. We need to
develop some spirit on this problem.

I am reminded of a story about developing spirit. There was a
young gentleman who used to reside in this city. He moved to Maine.
Shortly before Christmas time he decided he wanted to celebrate
Christmas in the good old Milwaukee style, but there was just one
thing lacking they manufactured in Milwaukee that he couldn’t buy in
Maine because Maine was a dry state and the adjoining states. A