

**Interim Study Hearing**  
General Affairs Committee  
with Agriculture Committee Invited

**LR 578 (Karpisek) Interim Study to examine the various Nebraska agricultural products used in the production of craft beer and distilled spirits**

Nebraska Legislature  
One Hundred Third Legislature  
Second Session

**September 26, 2014**

## LR 578 Interim Study Hearing Summary

LR 578 was introduced by Senator Russ Karpisek and cosponsored by Senators Colby Coash and Ken Schilz. Senator Coash, Vice Chair of the General Affairs Committee, chaired the Interim Study hearing and introduced LR 578 in Senator Russ Karpisek's absence. There were members of the General Affairs Committee and Agriculture Committee present.

**Senator Coash,** In introducing LR 578, Senator Coash reiterated the interim study's purpose, which is to study Nebraska agricultural products used in the production of craft beer and distilled liquors and ways to promote such local inputs. Given the growth of craft breweries in recent years as an industry in Nebraska, Senator Coash questioned why Nebraska craft breweries and distilleries don't utilize more Nebraska inputs such as grain, yeast, and hops. Senator Coash also read into the record a letter from the Nebraska Tourism Commission.

**Scott Kinkaid – Agricultural producer,** testified that he has recently started producing malting barley and hops. Kinkaid saw it was an opportunity to attempt a new cover crop for his fields. Kinkaid stated that shorter season cover crops could help improve the soil quality, which could improve yields of more traditional longer season crops such as corn and soybeans. Kinkaid also saw these types of short season crops as a way for young kids to learn a good work ethic and earn some money because a crop like hops requires more hands-on labor than traditional crops.

**Shad Rhynalds – President of the Nebraska Hop Growers Association,** testified that in 2008 he and his father started Rhynalds Hops and has had to expand their operation given the demand from local breweries such as Blue Blood Brewing, Empyrean Brewing, Upstream, Modern Monks, Zipline, Nebraska Brewing and others. Rhynalds stated that freshness and that brewers can physically see and inspect the fields are just some of the advantages to utilizing local hops. Rhynalds stated that in 2013 there were 22 Nebraska breweries that produced 24,467 barrels (758,477 gallons) of beer. With only 12 acres of hops currently being grown in Nebraska, there is tremendous potential for growth. Rhynalds also stated that hops is used in products like cheese and skin-care products. Rhynalds concluded by noting how labor-intensive growing hops can be and that they don't take up as many acres as other products since hops grow vertically 18 to 20 feet.

**Peter Stephen Baenziger – small-grains breeder,** but testified as a citizen regarding the active barley, triticale, and wheat breeding programs which can be used in producing distilled spirits in Nebraska. Baenziger provided estimates of the likely production rates of these various inputs if grown in Nebraska. Baenziger reiterated the importance for farmers to have a diverse crop rotation to protect the soil and improve future yields. Since there are challenges to marketing barley, it makes sense for a grower like Kinkaid to work directly with a brewer. There is also a benefit for local growers to work with local brewers, as the local brewers don't have the same large-scale needs and consistency requirements of the large brewers, which allows for more flexibility and a willingness to work with local growers.

**Brian Podwinski – Representative of Nebraska Malt, Blue Blood Brewing Company, and Salt Valley Spirits,** testified that Blue Blood Brewing Company has partnered with Kinkaid to grow a malting barley variety called Pinnacle. Blue Blood Brewing Company is also working with Norland International to develop small-batch malting equipment and intends to start malting barley later in 2014. For craft brewers to utilize local agricultural inputs, those producers need to know that the demand will be there, which is why incentives for brewers would help support those local agricultural producers. It is also important to find other uses for grains such as barley that don't produce the malt that the brewer wants, because there is a considerable difference in price from \$5 per bushel for malting barley compared to \$3 per bushel for feed barley.

**Jim Engelbart – Operations Manager for Empyrean Brewing Company representing Empyrean and Telesis, Inc.**, testified that as a supply chain specialist he understands the challenges to acquiring adequate inputs, as their production has increased from 500 barrels in 1991 to 8,000 barrels in 2014. However, there has also been an increase in the number of brewers across the country from 2,000 ten years ago to currently 3,000 brewers with 600 opening in 2013 alone. In 2014, of the 400,000 pounds of barley they will use, 95 percent will come from North Dakota, South Dakota, Wisconsin and Idaho. The challenge isn't just to grow hops and barley in Nebraska, but to grow quality hops and barley so that brewers know what they are getting in order to produce the desired beer. A gallon of beer takes about two pounds of barley and between two to six ounces of hops. A pound of malted barley can run anywhere from 35 cents a pound to a dollar on the high side. A pound of hops runs anywhere from \$8 to \$15.

**Robert Rupe – Executive Director for the Nebraska Liquor Control Commission**, testified that the craft brewery industry has grown considerably in Nebraska from 17 in 2011 to 36 in 2014. While beer consumption hasn't gone up across the country, craft beer sales have been taking a larger market share. Beer is taxed at 31 cents a gallon and spirits are taxed at \$3.75 per gallon, which contribute to the more than \$30 million in excise tax collected annually by Liquor Control Commission. Rupe warned against incentivizing the local alcohol industry differently than out-of-state brewers based on the US Supreme Court case of *Granholm v. Heald*. The farm winery license is the most expansive license in Nebraska because farm wineries manufacture, distribute and retail their own products. No other license can operate in all three tiers like the farm winery license, which also has a favorable excise tax rate of six cents per gallon compared to the general wine excise tax of 91 cents per gallon. Farm wineries must be domiciled in Nebraska.

**Bill Hawkins – Director of the Nebraska Hemp Company, Organic farmer and herbalist**, testified that he has been a member of the Sustainable Ag Society and been involved with the Kimmel Research Center in Nebraska City. Hawkins stated that there are many uses for hemp as a local input, including two types of hemp beer.

## **CONCLUSION**

There are no Committee recommendations at this time.



ONE HUNDRED THIRD LEGISLATURE

SECOND SESSION

## **LEGISLATIVE RESOLUTION 578**

Introduced by Karpisek, 32; Coash, 27; Schilz, 47.

PURPOSE: The purpose of this resolution is to study the various Nebraska agricultural products used in the production of craft beer and distilled spirits, including issues relating to research and market development, promotion and incentives for such agricultural inputs, funding for such promotion and incentives, and any regulatory matters involving such agricultural inputs for the production of craft beer and distilled spirits.

The study committee shall seek cooperation and input from the Department of Economic Development, the Department of Agriculture, and the Nebraska Tourism Commission in carrying out the purposes of this study.

NOW, THEREFORE, BE IT RESOLVED BY THE MEMBERS OF THE ONE HUNDRED THIRD LEGISLATURE OF NEBRASKA, SECOND SESSION:

1. That the General Affairs Committee and Agriculture Committee of the Legislature shall be designated to conduct a joint interim study to carry out the purposes of this resolution.
2. That the committees shall upon the conclusion of the study make a report of their findings, together with their recommendations, to the Legislative Council or Legislature.

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[LR578]

The Committee on General Affairs and the Committee on Agriculture met at 1:30 p.m. on Friday, September 26, 2014, in Room 1510 of the State Capitol, Lincoln, Nebraska, for the purpose of conducting a public hearing on LR578. General Affairs Committee senators present: Colby Coash, Vice Chairperson; Sue Crawford; Jerry Johnson; Scott Lautenbaugh; Ken Schilz. Senators absent: Russ Karpisek, Chairperson; Dave Bloomfield; and Bob Krist. Agriculture Committee senators present: Ken Schilz, Chairperson; Norm Wallman, Vice Chairperson; and Jerry Johnson. Senators absent: Dave Bloomfield, Ernie Chambers, Tom Hansen, Burke Harr, and Steve Lathrop.

SENATOR COASH: Okay, we're going to go ahead and get this hearing started. We are all here for LR578. So if you're looking for a different one, you might want to find a different room. My name is Senator Colby Coash. I am Vice Chair of the General Affairs Committee. Our Chair, Senator Karpisek, is unable to be here, so I'll be chairing the hearing today. This is actually a joint committee hearing between the General Affairs Committee and the Ag Committee, so we have some duplicate members and some members here from both committees. And so at this time I'll take the opportunity to introduce my colleagues who are here, starting with my far left: Senator Crawford from Bellevue; Senator Johnson from Wahoo; Senator Lautenbaugh from Omaha. I am Senator Coash. This is Senator Schilz from...Ogallala?

SENATOR SCHILZ: There you go. Good job. (Laughter)

SENATOR COASH: I almost said Wyoming. (Laughter) And to my far right is Senator Wallman from Beatrice. Christina is our committee counsel (sic). This is Josh Eickmeier, who's our legal counsel for the General Affairs; and Rick, who is legal counsel (sic) for the Ag Committee. So we are well represented here. Let me take this opportunity to thank you for coming. If you have a cell phone, if you could go ahead and turn that to vibrate, we are going to start this hearing. I will introduce the hearing. And we do have

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some invited testimony here, and we'll work through that in a particular order. We'll call you up as we do that, and then following that, if there's anybody else who wishes to testify from the public that was not called up, you are welcome to testify at that time as well. Well, good afternoon, both General Affairs and Ag Committee. Appreciate you taking your time to be here. This is LR578, which I introduced with Senator Karpisek and Senator Schilz. And you should have copies of that, but I'll read some important parts of that study just to kick this off: The purpose of this resolution is to study the various Nebraska ag products that are used in the production of craft beer and distilled spirits, including issues related to research and market development, promotion and incentives for those ag inputs,...promotion and incentives and any regulatory matters involving those ag inputs. So it's a very short resolution. Let me tell you where this came from. This study came from conversations that many of us have had about the growing craft beer and distillery industry here in Nebraska. Hobie, who is here today, has...will share with you how much that industry has grown over the last couple of years. Sitting on General Affairs for six years, I found it ironic that, although we are an ag state, very little in the way of ag products are used in the beer production that happens here in our state. But we do have some experience in growing an industry like this. Many years ago, with the help of this Legislature, a committed group of ag producers and wine producers, we had a blossoming wine industry that has really grown in our state and provided for another ag product to be used and to showcase our state. So it's a great example of the marrying of the ag industry to another industry. And the question became, although we have a growing brewing industry, why haven't we married our brewing industry with our ag industry in a similar way? And what can be done to leverage the resource we have in our ag community? And how can we help both the ag community and the brewing and distilling community grow? So as you know, there are...the main ingredients, for example, in beer are water, grain, yeast, and hops. Well, we have an abundance of most of those or the ability to do those here in Nebraska and...but they are things that are not currently...there are things that are currently not grown or grown at a large scale here in our state. And the question became, why not? Could they be grown here? What would it take? And what benefits would that bring?

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And so that is where this study came from. And so what we did is we asked a group of folks to come and help us learn a little bit more about that. So we've asked ag producers to come, the users of those inputs to come and talk to us a little bit. We'll talk to some researchers and we'll see what we can learn through this process. I appreciate the...all of you being here today and we'll go ahead and get the hearing started unless you have any questions for me. [LR578]

SENATOR SCHILZ: Any questions? Seeing none, thank you. [LR578]

SENATOR COASH: All right. Okay. So we're going to go ahead and start with the invited testimony today. And we're going to start with our ag producers, and we're going to...we've got a producer here of some grain. Scott, would you mind coming up and talking to us about what you're doing? And we'll see if we have any questions for you. For those of you who haven't testified before, and I know there's some new folks, we'll ask you to start by stating and spelling out your name for the record so that we can get a clear record of who is here. And we'll turn it over to you. [LR578]

SCOTT KINKAID: Good afternoon. My name is Scott Kinkaid, K-i-n-k-a-i-d. I'm an ag producer from northeast Nebraska. And this year we grew 80 acres of malting barley, the first time that we've grown any malting barley, and we also planted some hops, first time we've done that as well. We're learning. We grew the barley. I wanted to give that a shot when I had the opportunity largely because to me it provided an opportunity to experiment some more with cover crops. That's something, if you read any farm magazines, that's kind of the in thing right now. There's...every magazine has two or three articles on cover crops. But it's something that I think offers a great deal of potential. I think we have a lot to learn. And so by growing a short-season crop, like the barley, it gave me a chance to plant a cover crop following that and see what I can learn from that. I really won't know what the results of that will be until a year from now when I harvest next year's crop to see how it affected that. We can grow barley here just as well as they can in the north. You maybe know, most of the barley, malting barley, is

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grown maybe North Dakota, Montana, those kind of areas, not because they can grow it better than we can but because we have the luxury of having more opportunity to grow longer-season crops like corn and soybeans that might be more profitable. So really it comes down, as you might guess, to where are you going to make the most money. I mean that's what I'm in business to do. But to me it doesn't have to compete dollar for dollar if I'm able to find some other benefits, such as what cover crops might provide. And so even if I don't make as much money this year, if I end up making more money in the end because of the better soil quality that I have and maybe less nutrients that I need to apply, in the end I'll be better off, and that's really what I'm looking for. But like I said, I won't know the result of that for a while, till at least a year from now. I'm committed to improving the soil. That's something that's important to me. It's something that I've been working on for a while. I haven't had...I've been no tilling for a long time, have not...and that is...I'm committed to that, but I think I can do more with cover crops. And so I'm really interested in seeing what I can do there and that's...that was a big reason that I wanted to try planting the barley, so I had the opportunity to do that. With corn and soybeans, it can be done but you don't have much time left at the end of the year to get much good out of it. The hops, and I think you'll have somebody else who can speak more about hops growing than I can, but I wanted to mention a little bit as to why I grow the hops. As most of you know, farming has changed, obviously. You don't have the chores like we had when we were a kid. You know, I used to go out and turn sows out when I got home from school and put them back in. Well, we don't have those kind of chores anymore. And so for kids to learn that same work ethic, I saw this as an opportunity to do that. We've got a young family in the neighborhood who they don't farm but they have several school-age kids. And they live on an acreage, so they've got some room. And they're looking at it, they want to come and see what we're doing, because it's an opportunity for their kids to earn some money and something that they can do right there at home. For instance, I've got a 12-year-old son, but we're ten miles out of town. Well, it's, you know, for him to earn money, you know, it's not feasible to have a paper route or even a lawn-mowing service. This is something he can do right there at home. We've got...another thing about it is that it's an opportunity to produce a

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crop on an area that you're not already producing a crop on. For instance, we had an area right next to the house that's got a high line here and poles here. It wasn't feasible to operate large machinery there. So it was just grass, so we mowed. And so that was an opportunity then to actually produce something on an area that we otherwise weren't doing. And so I see the hops as something that could really benefit, like I say, families with kids who want to get out and work with to earn some money because, as most of you know, there's a difference between the money that you earn and the money that you're given. So that was a big reason that I wanted to get into the hops. And I can also see that as something even retired people could do. You know, it's not hard, backbreaking labor, but it takes some time and is something that you could get out in the outdoors and do and produce something that's going to provide a return. And so I think there's some real advantage that way. I think that's about all I have, if anybody has any questions. [LR578]

SENATOR COASH: All right. Scott, I'll just ask one question just...I'm sure our ag producers, our Ag Committee already know this, but can you kind of explain, when you said you're using barley as a cover crop, what you mean when you say that it's a cover crop for you? [LR578]

SCOTT KINKAID: Oh, okay. Yeah, really not using the barley as a cover crop, but you harvest that, like, in July rather than September and October. So I've got time to go back and plant. In this case, it's actually a mixture of ten different species of plants that we planted there after the barley harvest that are growing now, and they're about as...the tallest is about as high as this desk here. But there's a number of different things. I can't remember what all they are. There's winter peas and mung beans and vetch and sunflowers and there's ten different species; each are there for a reason. Some of it has to do with fixing nitrogen from the atmosphere. Some of it has to do with soil quality. Radishes, for instance, is one that helps to aerate the soil because they grow a big, large radish and as it deteriorates you improve the water infiltration in the soil. And so there's a number of different issues like that, that we're addressing with this

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cover crop. It's called a cover crop because you just plant it to grow up. It protects the soil from erosion as well as a number of other things, like I say, fixing nitrogen and some can...they call it scavenging phosphorous. They can do a better job of getting the phosphorous that's in the soil out of the soil and turn it into organic matter which then other crops can access that otherwise they wouldn't get because it's unavailable to the other crops. They don't have the ability to pull that phosphorous out of the soil like some of these do. And so that's what we're trying to accomplish with the cover...what we call a cover crop on the soil. [LR578]

SENATOR COASH: All right. Thank you, Scott. We'll see if any have questions. Senator Crawford. [LR578]

SENATOR CRAWFORD: Hi. Thank you for coming to testify. You had mentioned the hops. It was valuable, sounds like, because there's something about it that's labor intensive. I mean, when you were saying it's an opportunity for kids to make money... [LR578]

SCOTT KINKAID: Well, it does take some time, you know. The biggest expense and labor is in the first year, getting them planted. You've got to erect...put up some poles with cables because they grow up 18 feet tall. You've got to have twine for the vines to grow up. But you've also got to keep the weeds out of it. It's not a large area like corn and beans. We've had, like, maybe a third of an acre, and so you've got to plant them. You've got to keep the weeds out of them. You've got to trim the bottom, the runners off the bottom. You've got to start the vines...growing up the vines. So like I say, it's not something that's heavy manual labor, but it's still...you've got to go out and do it. It's got to be done. And so that's why, you know, it's something for kids to learn self-discipline. They get out and do it and see that it gets done. [LR578]

SENATOR COASH: Yeah, and, Senator Crawford, we've got a hops grower coming up here so we can ask more questions. [LR578]

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SENATOR CRAWFORD: Okay. [LR578]

SENATOR COASH: Senator Johnson. [LR578]

SENATOR JOHNSON: Thank you. Thanks for coming in, Scott. Would you...is this considered a specialty crop? [LR578]

SCOTT KINKAID: As...which, the hops or the barley? [LR578]

SENATOR JOHNSON: Well, the barley that you grow, is it sensitive to other...or is it basically like a barley or an oat field as far... [LR578]

SCOTT KINKAID: Yeah, yeah, yeah. It's not anything...I mean, we used to grow a lot of oats. It's nothing different than that really. It's nothing that I have to have a boundary or anything like that. It's just a matter of growing that instead of something else if you want to. There's no... [LR578]

SENATOR JOHNSON: Okay, okay. So there's...is there any particular sprays that you cannot use on them because of hops? Is there...protected that way? []

SCOTT KINKAID: No, not really. [LR578]

SENATOR JOHNSON: Okay. [LR578]

SCOTT KINKAID: Just whatever, you know, would...like any other crop that, you know, certain herbicides work on this and they might kill that. You know you just...not going to spray it with the wrong thing. But as far as the end product, it doesn't make any difference. [LR578]

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SENATOR JOHNSON: Okay. Can you go back to back or do you have to rotate? Or is there a value in rotating that from the standpoint of what it does to the soil? [LR578]

SCOTT KINKAID: Yeah, the value would be in rotating. You're always ahead if you can rotate crops. You could plant it back to back, wouldn't really be a problem, but you'd be...you wouldn't be reaping the benefits as well as if you were to rotate with something else. [LR578]

SENATOR JOHNSON: It would be better to rotate. [LR578]

SCOTT KINKAID: And that's what I want to do, is to rotate to different fields. And, you know, I can help build this one this year and that one next year, you know,... [LR578]

SENATOR JOHNSON: Right. [LR578]

SCOTT KINKAID: ...ideally, do it all the time but fill it in as much as I could. [LR578]

SENATOR JOHNSON: So there's some extra value to that... [LR578]

SCOTT KINKAID: Yeah, exactly. [LR578]

SENATOR JOHNSON: ...in the rotation. [LR578]

SCOTT KINKAID: Right. [LR578]

SENATOR JOHNSON: That's all I have. Thank you. [LR578]

SENATOR COASH: Thank you, Senator Johnson. Any other questions for Scott?  
Seeing none, hey, thanks for coming all the way down... [LR578]

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SCOTT KINKAID: You're welcome. [LR578]

SENATOR COASH: ...to talk to us today. Okay, Shad, come on up, tell us who you are and what you're growing. I should have mentioned, if you are testifying today, if you'd fill out a sheet and give it to Christina, she'll put that in the record. [LR578]

SHAD RHYNALDS: Good afternoon. My name is Shad Rhynalds, R-h-y-n-a-l-d-s. I'm the president of the Nebraska Hop Growers Association, and I'm here to support LR578. I'm going to give my testimony, and then I'm more, you know, apt to, you know, answering questions. And in 2008, my father and I started Rhynalds Hops. Not realizing how popular our hops would become with local breweries, we quickly had to expand our hop yard. We mainly have been doing business with Blue Blood Brewing. Our hops have been featured in beers crafted by Empyrean Brewing, Upstream, Modern Monks, Zipline, Nebraska Brewing, in local brewing clubs and countless of home brewers. The incentives for the brewers have the...is the product is locally grown, of course, and fresh. The brewer can visit the hop yard and physically see the hops going into their beer. For example, Blue Blood's 543 Skull Creek--seasonal--Pale Ale, the hops were picked and put into the beer within two hours. That can't be done by purchasing hops from the Pacific Northwest where the majority of the brewers' hops come from. Last year, there was 22 craft breweries in Nebraska that produced 24,467 barrels. That's 758,477 gallons of beer. And with only 12 acres of hops grown in Nebraska, the opportunity for expansion and future growers is endless. Our hops are primarily used in beer; however, there are other uses of hops. The University of Nebraska-Lincoln dairy department used our hops in their flagship cheese. A botanical company based in Omaha is using our hops in skin-care products. A paper company has pressed our hops into notebooks. The Nebraska Hop Growers Association's primary focus is to promote and...the growth and use of Nebraska-grown hops as a sustainable crop through education and shared resources for commercial and home brewers. We have proven we can successively grow hops in Nebraska and there are multiple markets for their use. I feel confident that eventually locally grown hops can have a huge impact on

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Nebraska's economy and there will always be a market for them. And I can answer any questions from (inaudible)... [LR578]

SENATOR COASH: Thank you, Shad. How many acres of hops does your organization in total represent? [LR578]

SHAD RYNALDS: We're roughly...the state of Nebraska has about, roughly, 12 acres of hops. [LR578]

SENATOR COASH: Twelve acres. [LR578]

SHAD RYNALDS: And that's hardly anything with the amount of beer that's produced and the hops that they're purchasing from the Pacific Northwest. [LR578]

SENATOR COASH: Okay. [LR578]

SHAD RYNALDS: I mean, like I said, I mean, we just expand and... [LR578]

SENATOR COASH: So would it be fair to say you've got more demand than you have product? [LR578]

SHAD RYNALDS: Yes. [LR578]

SENATOR COASH: All right. Very good. Thank you, Shad. We'll see if we have any questions. Senator Johnson. [LR578]

SENATOR JOHNSON: The volatility of pricing of hops, do you contract with the beer industry or what type...how does that mechanism work? [LR578]

SHAD RYNALDS: Yes. Well, right now, we just have a verbal contract, I mean, but, I

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mean, we can set up a contract with any...well, any brewers, that they'd prefer that.  
[LR578]

SENATOR JOHNSON: Okay, well, you know you've got a market. [LR578]

SHAD RYNALDS: Yes. [LR578]

SENATOR JOHNSON: So I just didn't know how much flexibility you had in selecting who you sell to and, quote, getting your best price. [LR578]

SHAD RYNALDS: Yes. [LR578]

SENATOR JOHNSON: That's all I have. [LR578]

SENATOR COASH: Can you talk a little bit, Shad, about...just briefly about the labor involved in harvesting hops kind of from the last testifier and answer Senator Crawford's question. [LR578]

SHAD RYNALDS: It's...yeah, the start-up, they say it costs \$10,000 an acre. But my father and I, you know, tied to, you know, cut costs and we used cedar poles for our trellis system. And, I mean, setting it up, like the gentleman said before, it doesn't take a lot of acres wide. It goes up, you know; they grow up 18-20 feet. And as far as, I mean, you get up to an acre to three acres of hops, handpicking is going to take...is going to be time consuming. And we're in the process now of developing harvest equipment for hops. [LR578]

SENATOR COASH: So you don't...equipment that you...do you have to buy equipment in order to harvest or plan or... [LR578]

SHAD RYNALDS: Well, it was, starting off, that you handpick them, and it's

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monotonous and it takes forever. [LR578]

SENATOR COASH: All right. Very good. Thank you, Shad. Any other questions for Shad? Appreciate you coming down and testifying. [LR578]

SHAD RHYNALDS: All right. Thank you. [LR578]

SENATOR COASH: (Exhibit 4) On the...no, you're good. On the issue of hops, I just want to make sure it's read into the record we did have a letter submitted by Silas Clarke of Duffin Knudsen Hop Growers. The committee should have a copy of that letter and we'll put that in the record as well, so appreciate his input on that. Talking about...we're going to bring up Dr. Baenziger. You want to...is that right? Did I say that right? [LR578]

STEPHEN BAENZIGER: Close enough. [LR578]

SENATOR COASH: Close enough? Okay. [LR578]

STEPHEN BAENZIGER: You bet. [LR578]

SENATOR COASH: All right, well, appreciate you being here. If you could... [LR578]

STEPHEN BAENZIGER: Thank you. My name is Peter Stephen Baenziger, but I go by my middle name, Stephen. Baenziger is spelled B-a-e-n-z-i-g-e-r. And I'm testifying as a citizen, okay, but I...in my other life, I'm a small-grains breeder, and I work in agriculture and I develop new products for various crops that can be used in distilled spirits. Obviously, their major use is in human consumption or animal consumption, but so my testimony would be basically that we do have an active barley breeding program, we do have an active triticale breeding program, we do have an active wheat breeding program, all of which can be used in distilled spirits, all of which are adapted to the state

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of Nebraska and can yield well. Of those, the barley is probably the one that is the more difficult. The northern part of the state, where Scott is from, is where the spring barleys would be. We produce winter barleys; and when the season is accommodating, we're usually producing about 5,000 pounds of grain per acre, which is a pretty good yield with a relatively low input. For our wheat, you know, the state average would be more likely about 2,500 pounds per acre. Same farm, same fields, we'd be looking at more like 4,500 to 5,000 pounds per acre, which would be equivalent of 60 to 80 bushel, okay? Barley has a different bushel weight, so it's 48 pounds, not 60 like wheat, so you'd be looking at close to 100 to 110 bushels in a good year. The triticale is used as a specialty grain. It's used as feed and actually it's a huge forage crop, biomass crop, and can both be used in cover crops also. But the main use is, for wheat, is human consumption; for barley, it's feed grain; and then forage for dairy animals; triticale, mainly forage, but also can be used in the health markets, things like that. So I guess I'm really here to say that the products that you think of in beer can be produced locally, that there is genetics to be done. The genetics of a good malting barley is slightly different than a feed barley. You tend to have a higher enzymatic aspect to it so that it will malt, which is a germination process, and that allows it to produce the enzymes that degrade the starch which then leads to the alcohol production sort of thing. So if you're thinking about...if you're probably more familiar with corn, they now have strains of corn which have been genetically engineered--barley, wheat, and triticale are not such--where they've added the enzymes so the fermentation process makes higher levels of ethanol. But that's basically what barley breeders have done to make a good malting barley. So that's really what it is, other than we can...talked about your...where it would be produced, what are the climate limitations, things like this that could be done. But basically, we can produce barley in this state. And historically, Nebraska was a very large barley-producing state in the 1930s when barley was used extensively for animal feed (inaudible). [LR578]

SENATOR COASH: Do you have any comment on...sounds like Mr. Kinkaid is the only guy maybe growing it. [LR578]

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STEPHEN BAENZIGER: Well, it... [LR578]

SENATOR COASH: Why did we move from where we were in the '30s? Is it just a market issue or...? [LR578]

STEPHEN BAENZIGER: It is a market issue. I think Scott hit it on the head, is that it's easy at least...and I will always defer to growers because they're the ones that have the sharpest pencils, okay? It's always easiest to see the benefit when it's direct. So, for example, if you talk to people like Paul Hay, who is an Extension expert down in Beatrice, that area, he'll tell you that you should be growing wheat as a rotation because the way it changes the soil by breaking the hardpans of, you know, corn and soybeans plus changing the weed structure, you add 15 bushels per acre in the corn that follows the wheat. And that's basically what Scott is describing. He's describing how to diversify his rotation to make his soil healthier, to make his overall farm healthier. You may not see the value in the crop itself. But if you're...you know, no farmer grows only a crop. They farm and they grow a system, and the value then spreads out through the system. So that's how they would work that. [LR578]

SENATOR COASH: Very good. Thank you very much, Steve. Senator Wallman.  
[LR578]

SENATOR WALLMAN: Thank you, Senator. Yes, marketing, did you have trouble marketing barley through here? [LR578]

STEPHEN BAENZIGER: It depends on how you do it. We actually have an exclusive license for our barley varieties, and it's in Kansas because it's a much more reliable market for the forage types of barleys, okay? If it's a forage barley, it's used on a farm, so there's no issues that way. What we're now seeing is vertical integration occurring in the dairies. And so you're seeing feed operations, basically, they will contract for barley

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when they know they can have enough. The difficulty with the feed operations in Nebraska is, if barley winter kills, which the winter barleys, which is what I work with occasionally, do, last year being an example, it's difficult for them to change their rations on the fly. So if you're in Texas and there's a huge number of dairies, they're buying barley like you can't believe, the reason being is that barley is more drought tolerant than wheat. Wheat is, of course, more drought tolerant than corn and soybeans, and we grow in a season where generally there's more moisture. So there's a real advantage to that. And it, you know, barley, is new to Nebraska, but it's actually the fifth largest cereal grain in the world, and it's highlighted for its drought and salinity tolerance. So the marketing will be a challenge. I mean, it's not by chance that Scott works with a brewer directly and they have a way of doing that. And if you put the value chain together where you'd have a maltster in between, then you could really do something. [LR578]

SENATOR WALLMAN: Thank you. [LR578]

SENATOR COASH: Thank you, Steve. Senator Schilz. [LR578]

SENATOR SCHILZ: One question: As you look at the barley as you're growing it for malting, do you run into issues of quality when you're doing that? I mean does some barley, quote unquote, make the grade and some doesn't and so you have issues with that, as well, too? [LR578]

STEPHEN BAENZIGER: Absolutely. And there's a couple things you need to understand. Number one, in...I've worked with barley for the last, well, since I was 25 and I'm 63, okay, so it's a number of years. For the big breweries, you know, the Anheuser-Buschs, which are now InBev, everything is based on consistency, okay? So they want a very consistent barley, and by consistent I mean it is has to be spec on, okay? They also play a marketing game which is if the upper Midwest barley crop is really good and their malt houses are there and then the Pacific Northwest barley crop is equally good or better but the malt houses have to pay to ship it, they'll find reasons

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to break the contract in the Pacific Northwest. It's just a business, okay? A craft brewery and a craft distiller is completely different. How many of you like French bread? You know, true French bread, it's made with the worst-quality wheat in the world. Like, I guarantee you, it doesn't hold up to anything the Great Plains produces. But it's the baker. And when you're working with a craft brewer, they are much more creative with their batches. You know, if you ever go to a McDonald's bakery, you will see five people on the floor and they'll be making I think it's 3,000 dozen buns, so it's 36,000 buns an hour, okay? Everything has to be like clockwork, everything. You know, basically, they're taking a biological organism and making it like a chemical ingredient, like salt or sugar. A craft brewer, a craft distiller doesn't do that. They are much, much more creative and much more in tune with the taste. So I think if you're worried about will a craft brewer have the same kind of specifications that an Anheuser-Busch/InBev has, the answer is no way in the world. I mean, that's part of the advantage of having local production is they'll work with people. You know, it's their neighbors. [LR578]

SENATOR SCHILZ: Great. Thank you. [LR578]

SENATOR COASH: Very good. Senator Johnson. [LR578]

SENATOR JOHNSON: Thank you. In the timing of the harvest and the...I assume you cannot store this malt or... [LR578]

STEPHEN BAENZIGER: Oh, okay. Actually... [LR578]

SENATOR JOHNSON: I mean, is it...is there a process that has to happen and how long? What's the shelf life of that? [LR578]

STEPHEN BAENZIGER: Actually, and I, you know, it's not my specialty, sir, but basically, malted grain is harvested grain that can be stored and then it is malted, okay? So it's a process. So it's no different than a crop that I'm more familiar with: wheat.

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[LR578]

SENATOR JOHNSON: Right. [LR578]

STEPHEN BAENZIGER: You harvest that. You could store it on your farm for two or three years, okay, then take it to a mill. They will mill it and the flour is there, and then you bake it. Okay? So you don't want to have flour necessarily stored because there's rancidity issues. But the grain itself can be stored. [LR578]

SENATOR JOHNSON: Can be stored. [LR578]

STEPHEN BAENZIGER: And so malting barley can be stored just the same way, malt and triticale. The one difference between wheat and malting barleys or anything that's going to be malted is that it's a germination process. So the grain has to be sound, okay? So if you, you know, if you heat-killed wheat, you could still mill it. You know, if the seed itself were dead, you could still mill it because the flour would be unchanged. But you can't germinate dead grain. So there is a reason for why you'd want to store it very carefully and store it properly, but it can be stored. And then I will defer to those that are in the malting business as to how long malt can be stored. But the grain can be stored for a considerable length of time before it is malted. [LR578]

SENATOR JOHNSON: Do you think the industry will ever get to the point where there will be certain facilities that will take that in and store it for people, or do you need to store it on your own farm, your own operation, so that it has to be regulated? [LR578]

STEPHEN BAENZIGER: I guess, you know, I defer to you for when it comes to regulations. That's clearly not my area. I do foresee there will be businesses. I always think that the highest quality businesses control the raw materials that make their name. And so they'll either do it the way the mills do it now for flour, where they will sample elevators all across the country, find the elevators that have the right type of grain, ask

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them to store it until they buy it, give them a premium, and go forward. But they functionally control that grain and they functionally survey it. Other ones--and there's elevators that are here which make their reputation on quality--they purchase it, store it, and know that they will have a quality buyer. And I think both ways will work, sir.

[LR578]

SENATOR JOHNSON: Okay, I think that's all I have. [LR578]

SENATOR COASH: Okay. Thank you, Senator Johnson. Seeing no other questions, we appreciate your testimony, Stephen. [LR578]

STEPHEN BAENZIGER: Thank you. [LR578]

SENATOR COASH: Well, that's a good segue, because we're going to call Brian up here. He's going to talk to us a little bit about the malting process and...come on up, Brian. [LR578]

BRIAN PODWINSKI: (Exhibit 1) My name is Brian Podwinski, last name is P-o-d-w-i-n-s-k-i. Today, I'd like to provide testimony as a representative of Nebraska Malt, Blue Blood Brewing Company, and also Salt Valley Spirits. We have a great agricultural history in Nebraska which unfortunately does not include barley for malting up until this year when we partnered with Scott Kinkaid to grow Pinnacle, which is a malting barley variety. It's basically started the process to where we can get Nebraska agricultural products into the brewer's hands. However, this is just the tip of the iceberg of what we will need to be...what will need to be done to actually grow this budding industry in the state. A big hurdle to overcome we have done with the help of Nebraska Economic Development, which is the lack of small-batch malting equipment for producers. There are several small maltsters popping up around the country and unfortunately most are using converted equipment that they've had to build themselves. With our grant, which is a prototype grant, we've been able to work with Norland

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International and actually are developing that equipment now as we speak to build to actually start malting barley later this year. Even with the success in Scott's fields this year, we hope more barley will need to be grown in Nebraska to meet the demands of the brewers here in the state. There are several growers who have expressed interest in helping us in growing more barley, but also we know that we need to have more demand. We also need to ensure that growers earn enough to continue to plant barley and have a place to market their grain. Nebraska Malt is working on developing plans to bring in malting barley but also have an outlet for grain that does not meet malting standards. We wanted to work with...make sure there's different outlets, such as feedlots or ethanol producers, that can actually use the grain which cannot be used in malting. This will help ensure our growers are successful and that we can actually make sure that their crop is sold and they do not have to find an outlet for grain which is unsuitable for malting. To help ensure this success, we would like to work with more of the experts at the university to select the best varieties for use and then also hopefully develop other varieties for use here in Nebraska for malting. Finally, we must be able to remain competitive in the marketplace and with a few large companies producing malting barley for the industry it's difficult. Bottom lines are tight for brewers and everyone else, and so any support would be beneficial to the industry to incentivize brewers and distillers to use locally grown grain and hops to ensure the future of the growth of the industry. The support is there from the brewers and distillers, but we must find ways to ensure we can make this economically feasible for the end users of the Nebraska agricultural products. Craft distillation is a growing industry and is at the same point craft brewing was a few years ago. More and more, individuals passionate about distilled products will be getting into the industry in the coming years. And with at least one to two more distilleries expected here in Lincoln alone by 2016, we're going to see a continued growth in that portion of the industry. Salt Valley Spirits will be the first distillery in Lincoln with our state license coming soon. A big factor in craft distilling is the same that other industries face: keeping our costs in check to ensure a viable company, especially when looking at some of the larger companies involved in the industry. Using local products would be big for our craft beverages and ultimately, if the

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malted barley industry takes off in Nebraska, we could potentially source all of our inputs from right here at home for different drinks such as vodka and whiskey. Craft distillation may very well be the next surge in craft beverages behind craft beer and then also the wineries that we've seen. As a brewer, one of the biggest hurdles we've faced in truly becoming local is the availability of the Nebraska-grown agricultural products. We're able to find hop growers with the ability to provide locally grown hops for use in some products; however, no malted grains were available anywhere in the state. Hop growers are expanding their fields to meet our needs, but the combination of growth in the hop yards and then also the industry as a whole keeps things kind of tight for us. Now, with the beginning of the malting barley in the state, brewers and distillers in Nebraska practicing their craft will be able to truly become local. [LR578]

SENATOR COASH: Very good. Thanks, Brian. So with...I'll just ask you about hops. You're able to purchase a lot of Nebraska-grown hops, but you can't purchase all that you need locally. [LR578]

BRIAN PODWINSKI: Correct. Correct. So far this year, I believe, we've purchased 150 pounds of hops or so. But we'll use in the thousands of pounds, and there's not that much available right now in the state. [LR578]

SENATOR COASH: Very good. And you talked a little bit about a place for growers to send their grain if it doesn't meet certain specifications, right? [LR578]

BRIAN PODWINSKI: Um-hum. [LR578]

SENATOR COASH: So as a brewer, how do you know what Scott harvests is going to meet your needs or not? [LR578]

BRIAN PODWINSKI: Well, there's a list of tests that we're going to actually perform on the grain as Nebraska Malt. We'll look at the size of the grain, the protein content, how it

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germinates, how alive the grain is. There's a long list of tests we'll actually conduct to make sure that the barley coming out of the field can actually produce the malt that we want in the end. And that's where we'll do that as Nebraska Malt. Then at the end, we'll also test the barley that has been malted afterwards to make sure that it meets the standards of what the brewers need in terms of enzymatic activity, conversion, and all that. [LR578]

SENATOR COASH: So as we sit here today, you know, what's been harvested, we're not 100 percent sure whether or not it'll all make it into beer or not. Is that correct? [LR578]

BRIAN PODWINSKI: Correct. [LR578]

SENATOR COASH: But the grain that doesn't make it in, you have to find like a cattle feeder or something to... [LR578]

BRIAN PODWINSKI: Yes. We won't want it to go to waste. We'll want to make sure that somebody will be out there to purchase it. And it goes back to comments made earlier where we want to make sure that to be able to get these contracts to sell grain which may not meet malting standards, we want to make sure we have enough. I would rather sell grain that meets standards, to have the feed contracts, for instance, so we can ensure that they get what they need as well, rather than not have any place to take it and put it elsewhere. I really don't want to see what has happened in other places where a malting company brings in a truck, tests it, and just rejects the load. We want to be able to find a spot for it so the grower doesn't have to do that. That's the idea behind it, to actually create this industry, because right now, with no industry or with no place for it other than potentially Nebraska Malt, it's very difficult to talk to some growers and say, don't worry, we will take care of you. So we want to make sure we have that, and that's where getting more people involved we're going to be able to do that. [LR578]

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SENATOR COASH: Very good. Senator Johnson. [LR578]

SENATOR JOHNSON: How much...you probably...you can't give me dollars and cents probably, because you don't know what a pound is worth because of the market changes, I am assuming, in value. What's the difference between maltable...the best barley malt and the product that would have to go to a feedlot or an ethanol plant? Is there a percentage? Ninety percent value or is it worse than that or...? [LR578]

BRIAN PODWINSKI: I believe it's right around 60 percent right now. Others would know better, but I believe it's about \$5 for malting barley per bushel and approximately \$3 for feed, but I could be wrong. I'm not for sure on the feed side. [LR578]

SENATOR JOHNSON: So there is quite a hit if they're not...if it doesn't qualify. [LR578]

BRIAN PODWINSKI: Correct, and that's where, as Nebraska Malt, we're going to have to...we're going to try to soften that hit some, so that way we know that there's a premium for the good malting barley. [LR578]

SENATOR JOHNSON: Yeah. [LR578]

BRIAN PODWINSKI: And if we can keep the farmers growing it, that way we can have a constant supply. We may pay a little bit more of a premium even though there's a little bit of a loss. We can factor that into other gains that we have as well, try to take care of the growers to make sure we have growers, because of the numbers involved. [LR578]

SENATOR JOHNSON: So this...the \$3 a pound can...is that still economical for the producer or is that a break even or is that a loss? [LR578]

BRIAN PODWINSKI: We would have to talk to the producers on that. I don't know for sure what the actual break-even point on barley is. [LR578]

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SENATOR JOHNSON: Okay. [LR578]

BRIAN PODWINSKI: And I think being as we've only had one season this year, that's where, again, I think Scott would say that next year he'll have a better idea after he sees the increase in corn or, hopefully, he sees an increase in corn crop. [LR578]

SENATOR JOHNSON: Thank you. [LR578]

SENATOR COASH: Thank you, Senator Johnson. Senator Schilz. [LR578]

SENATOR SCHILZ: Brian, thanks for coming in. Nice to see you again. You know, you talk about how you put this all together. I mean, you know, as you're talking about this, as you're starting to build it up from nothing, you talk about creating more demand for these types of things. How do you do that? What are your strategies? What are you thinking about? What are you looking for? What are you trying to do? [LR578]

BRIAN PODWINSKI: Well, the biggest thing is we have to be as competitive as possible. Local brewers have really rallied behind us in what we're doing here in making sure that there is some demand for our products. But we still have to compete with the likes of Briess and Rahr who can sell products a lot cheaper than we can to the same brewer. So we, one, we need to make sure consistency is there, and that's what we're working on with Norland to develop the equipment to do that. And then also, we also need to look at the overall price point where we want to take care of our growers because this is new; in terms of some aspects, it's scary. You're taking field that you...well, I guess, with corn prices these days, it's a little bit different. But in years past, you look at it and say, okay, well, you're taking this much corn away that I know I would be able to sell for X number of dollars. And we're trying something new. So now I think we're going to be able to help soften that and create that side so we make sure we have the topnotch barley for the brewers. And if we can produce that grain where other

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breweries see it and see the consistency behind it and then also know that it's not a one-year deal, so we have great grain this year, we have to find that grain next year as well. And I think we can accomplish that and, once we do, that should help out with the marketing aspect. But the big thing is, is the incentives. Because we're trying to grow this, it's going to cost us more up-front. And if there's any way to actually help incentivize the brewers to use the Nebraska-grown products, that will help it out significantly because that will help soften everybody's...help soften the change for everybody, I believe. [LR578]

SENATOR SCHILZ: Okay. Thank you. [LR578]

SENATOR COASH: So, Brian, if I'm tracking right, and we've talked about this before, the grain that's produced that could be produced here in Nebraska is probably going to be more expensive than what a brewer can buy from a big bulk... [LR578]

BRIAN PODWINSKI: Correct. [LR578]

SENATOR COASH: ...producer up in northern...like North Dakota, places like that. So...and we've got a brewer following you here. So the grain...that grain is higher, so we've got to figure out a way to get a brewer to say, even though it's higher, we want you to...we'd like you to buy a local product, because I think a lot of the brewers I've talked to are pretty committed to local products and things like that, so. [LR578]

BRIAN PODWINSKI: Correct. [LR578]

SENATOR COASH: Gotcha. Okay. Anything to add to that? Any other questions? I don't see any. Thanks for coming. [LR578]

BRIAN PODWINSKI: Thank you. [LR578]

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SENATOR COASH: Speaking of brewers, I think we've got Jim Engelbart is here from Empyrean Brewing. [LR578]

JIM ENGELBART: Hello. I'm Jim Engelbart, E-n-g-e-l-b-a-r-t. I'm the operations manager for Empyrean Brewing Company, and I'm here speaking on behalf of Empyrean and Telesis, Incorporated, our parent company. Brian asked me if I would come down and present today on behalf of the brewers in the state. I don't want to say I'm speaking for all the brewers in the state, but I definitely can speak for ours. I've been in this business for 18 years, actually, starting here in October. So I'm one of the few people in the state that has never had a real job because I started doing it right out of college. (Laugh) In my time working in the beer business, I've been involved in everything from sales and marketing to graphic design, and I've been the operations manager for our brewery for the last seven years. So I would consider myself in the beer industry to be a, quote unquote, supply chain specialist. I've had to source material, everything from boxes to bottles, labels, malt, and hops for our brewery for the better part of the last decade. So I have seen a lot of change in the business, definitely a lot of change locally for us. We've managed to grow our business every single year we've been in business. We started in 1991 and I think we did roughly 500 31-gallon barrels in our first year of business in 1991. And we're on track to hit 8,000 barrels of production this year at our brewery, which makes us still, after all this time, the largest brewery in the state, although we have some new brewers that are nipping at our heels very quickly. So the industry has grown tremendously and our markets have grown not just here in the state but also in other states as well. Inputs in this business have gotten more challenging, and especially more so. There was a huge influx of new operators that came into the brewing business in the mid-'90s and there was somewhat of a washout of a lot of those businesses, a lot of people that got into brewing that obviously weren't really into it for the right reasons and quickly got out. But we are currently in another blossoming period for breweries here in the United States. Last statistics I heard from the brewers association in Boulder is that there is now over 3,000 breweries operating in the United States. Ten years ago, there was under 2,000. Over 600

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breweries opened last year alone in the United States, I believe, somewhere in the neighborhood of 10 or 12 just here in Nebraska alone. The vast majority of these operators are tiny, and so for them to source ingredients, specifically ingredients locally, there could be a lot of benefit to that. But for the most part, even though we live and die by the esoteric qualities we're able to produce in our beer, we're not producing one or two brands of beer in massive volumes and trying to make them as inexpensive and efficiently as possible. We're horribly inefficient small producers that are using ingredients that we can gather from all over the planet: malt from Canada; malt from England; malt from Germany; hops from the western United States; hops from England; hops from Germany; hops from New Zealand. We're able to source material from all over the planet. Twenty years ago, that was very difficult, but there's been a whole industry that sprung up in the last 20 years to supply small operators like ourselves. So in terms of supply chain, I'd love to just say everything is hunky-dory in the brew world, hey, we can, you know, I can pick up my phone tomorrow and call a hops supplier in the northwest and say, send me a box of this, or talk to one of my maltsters up in Wisconsin and have them ship me some bags of malt from eastern Europe tomorrow. I can do a lot of those things, but the supply chain is definitely a lot tighter now than it ever has been. And of course, as in any industry, once supply chains tighten up, prices go up. So where we sit today, specifically talking about malt, I guess, first and foremost, if you follow...I think some of you gentlemen here do definitely follow what's happening with different crops, commodities. Barley this year has taken a huge hit in the United States and in Canada. Now I just saw the report yesterday from up there. Due to the intense amount of moisture we've had in the last few weeks, right in the middle of harvest, roughly only 60 percent of the American barley crop was harvested this year. The rest of it got so wet it actually started germinating in the field before it was harvested. So when you talk about risks associated from the farm standpoint, it really isn't any different than any other crop you're growing. You're putting a crop in the ground, you're putting all your inputs into it, you're crossing your fingers, saying your prayers, hoping that the weather cooperates and that you have something to sell and feed your family, keep your operation going for the next year. A hailstorm can ruin a cornfield in minutes. A

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hailstorm can ruin a barley field or hop field in the same period of time. So at any rate, the risk inherent in any agricultural endeavor is no different in barley than it is in any other crop. I've always been amazed in the time that I've been in this business that there isn't somebody growing barley for brewing in Nebraska. I grew up in the western part of the state where there's a lot of winter wheat grown and am familiar with several varieties, particularly from England, of barley that we utilize in our brewery that are winter crops. So I know the climates are similar enough, I know that the crops can be grown, and I've always been somewhat perplexed as to why they're not grown. Then I start looking at corn prices and yields and understand (laugh) that the incentive has to be there, as Brian very aptly pointed out, for the agricultural side of the business to have some skin in the game, so to speak. No sense in putting a crop in the ground if you're not going to get some sort of return out of it or some benefit, side benefit, as was mentioned with crop rotation. At our brewery, to produce the amount of beer we're going to produce this year, we're going to use well over 400,000 pounds of barley. Ninety-five percent of that barley comes out of North Dakota, South Dakota, Wisconsin, and Idaho. We do get small amounts that we do get from overseas, some specialty malts, specifically some malts that are smoked in Bamberg, Germany, that we use in a few of our beers. There's a few English malts that are known for their caramel character they impart in terms of flavor and color that we like to utilize. But similar malts, again, could be had. We can buy malt from three or four different suppliers that all have similar characteristics to it. In the business, on the sales side, I spoke very much about how we're not trying to make one type of beer in a massive amount of it. At any point in time we have 9 to 12 different types of beer in production in our brewery. I can walk through our cellar right now and point out eight different beers that are fermenting down there right now. Each of those has different inputs when it comes to barley and hops, and that's what makes each of them special or unique or different from one another. There is an explosion in demand in this business right now for esoteric, unique things, and that really is what's been our major growth. We produce eight types of beer that we make all the time, and we do that in no small part because we have restaurants--Lazlo's and FireWorks specifically--that we supply beer to and that we want to have that variety of

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beer on tap. And then at any point in time we're producing two different seasonal beers, and those seasonal beers literally change from recipe to recipe. We may do several batches of the same recipe, but for the most part we'll do it once and never brew it again. And a lot of what drives the consumer then to try those products is the fact that they have such variety available to them. So when we start speaking about having the ability to purchase material locally, that's huge. We just finished brewing 60 barrels, a barrel is 31 gallons if I didn't mention that already, but 60 barrels of harvest ale utilizing hops from two different farmers here in the state. A gentleman named Andy Andersen has a small field up near Fremont. And then the Duffin Knudsen guys, Silas Clarke who submitted a letter, we also purchased hops from them this year. So we bought 200 pounds of fresh Nebraska-grown hops this year, much like Brian said, picked from the field, and within less than 18 hours we had them going into a brew. That creates this type of beer we call harvest ale, or wet-hopped beer, and it produces a very unique flavor. Using the hops before they've been processed and dried for storage yields a different character and flavor out of them. And much like Brian pointed out, it's very difficult to try and get hops from the Pacific Northwest to Nebraska in 18 hours or less to use them in a beer when they're still fresh or wet. If they're left wet and not dried almost immediately upon being picked, like any flowery type material or plant, they again start to degrade and break down. There's a lot of moisture in them and you have to remove the moisture, dry them down for storage. Hops are kind of a different deal than barley altogether. But I guess, before I finish with barley, I did want to point out there is...would definitely be a huge marketable demand, talking about brewing this harvest ale. We've put all that beer out. Normally, 60 barrels of beer on a seasonal release for us would take us the better part of eight to ten weeks to work through that volume of beer. We put this beer into our restaurants and let everybody know it's made with Nebraska-grown hops, and it disappears in a short two and a half weeks. It becomes one of the bestselling beers in our restaurants at the point in time when we tap it. So to say that there is demand for local products in the beverages we consume locally is somewhat of an understatement. The demand is definitely there, and the demand for a never-ending array of new and creative things is there. The challenge on the barley side is, can we

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produce a barley crop that's (a) either consistent enough that we can make the same beer twice out of it or (b) different enough but still high quality enough that we can get a lot of different flavors out of it? There is a movement in the small malting...small maltsters that have popped up around the country, a couple in Maine, a couple on the West Coast. There's a large/small maltster in southern Colorado. These businesses are experimenting now with heirloom variety barleys that are known not so much for the quality they produce in the field but the quality of flavor they produce in the brewhouse. And so it would be, again, in the realm of possibility that a type of barley could be developed in Nebraska with a specific flavor to it that would give our beers a specific advantage or something to set them apart in the market as well. Hops, as I've talked to every hop farmer in the state, and I feel like before anyone started growing hops in the state they've come to talk to our brewery first I think with...just due to the fact that we've been around as long as we have and we're large. And I've told them all the same thing: Anyone can grow hops. It's almost like squash. You can grow it on a sidewalk. As long as it gets some water, it grows. The Latin name for it relates it to...Humulus lupulus relates it to a wolf because of how aggressively the plant grows. The challenge is not just growing the hops but growing quality hops. So just like there is with barley, there's specs that we need as brewers for the hops to meet, and there's lab tests that have to be run by the grower, cost incurred by the grower, so we as brewers know what to expect from those hops and how to utilize them in the brewery, how much do we need to use, at what point in time do we need to use them to get the flavors and aromas that we're looking for. There is a lot of experiments going on in hops right now, and it's being driven by small brewers like us who are again continually looking for an advantage over the next small brewer. We're looking for the newest, next hot hop flavor, and there's a lot of things going on in the hop market right now. And the hop market continues to be tight because of the number of players coming in. We never, ever contracted for hops as a commodity until 2008. So for...from 1991 to 2008, whenever we needed hops, we'd call up our supplier and they'd ship us some. They always had it. In 2008, there was a global crisis in hops in no small part due to a big fire, burned an entire warehouse. Over 400,000 pounds of hops went up in flames in the northwest. Terrible drought in central

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Europe put a big dent in their crop, and something like a five- to ten-year period of 20 percent growth in the Chinese beer market driving demand for hops for beer sold out of...overseas. So at any rate, prices went on average from about \$3.50 a pound for most of the hop varieties we use. Some of them went as high as \$12 to \$15 a pound overnight because of the supply issue. That's when people like Shad Rhynalds and his dad came and talked to us and said, hey, here's something, we could maybe utilize some land we're not utilizing elsewhere. The Rhynalds in particular have specialty that they have the ability and do produce other organic crops, and there is a premium to pay for organic hops, just like there is every other organic produced item. So they decided to go that route. Some of the newer guys that have gotten into the business, like Duffin Knudsen, has said, you know, we want to produce volume and quality and we don't want to have to deal with the certification side of growing an organic crop, so we're going to do it old school and use pesticides and fertilizer. And we bought their hops this year, and I'm very interested in buying a lot more of their hops going forward due to the quality of hop that they have produced. I have been floored by that. [LR578]

SENATOR COASH: Okay. [LR578]

JIM ENGELBART: The last input on the hops side, from an equipment standpoint, very much like in malting, there is some specialty equipment involved whether you're doing it on a large scale or a small scale. And for us as breweries, the main form of hop that we utilize are hop flowers that have been ground into a powder and compressed into pellets. They store better, they ship better, and they're much easier to utilize in the brewery because we don't have to put them in a strainer to keep them from plugging up all of our piping as the beer passes through them. So same thing as there is on the malt side, there is on the hop side. There is specialty equipment these guys are going to need. As Shad said, they're develop...they've developed some pretty cool handpicking devices that take a lot of the physical labor. I've picked hops every year for the last six summers by hand. That's a labor of love. The only thing that makes it worthwhile is that you get to drink beer while you're doing it. (Laughter) But, yeah,... [LR578]

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SENATOR COASH: Okay, thanks, Jim. [LR578]

JIM ENGELBART: Yeah, eight hours straight of picking hop flowers by hand and all I have to show for it is about 12 pounds of hop flowers that I've picked. [LR578]

SENATOR COASH: Okay. [LR578]

JIM ENGELBART: And you dry those down and you lose 60 percent of the water and there you have it. [LR578]

SENATOR COASH: Let's see if we have any questions for you. Appreciate all your testimony. Senator Johnson. [LR578]

SENATOR JOHNSON: Thank you. In the cost of...your cost of producing a barrel of beer, what percentage of the cost is in the hops? [LR578]

JIM ENGELBART: In terms of weight, and I meant to mention this earlier, but to make a gallon of beer takes about two pounds of barley and anywhere from two to six ounces of hops. Well, six is really on the high side, but that's pretty much how it comes out to. So in terms of cost though, the hops make up roughly 20 percent of the cost of the barrel of beer. So from a weight, little, but from a cost standpoint, much higher. [LR578]

SENATOR JOHNSON: Twenty percent. Thank you. [LR578]

JIM ENGELBART: Yeah. A pound of malted barley for us right now can run anywhere from 35 cents a pound on the low side to a dollar on the high side. A pound of hops runs anywhere from \$8 to \$15. [LR578]

SENATOR COASH: Thank you. Senator Schilz. [LR578]

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SENATOR SCHILZ: Thank you. You know, as you're sitting here talking, you talk about the raw hops that you're getting that you're putting in the product, and then you're talking about the processed hops and the pills or tablets that you're talking about.  
[LR578]

JIM ENGELBART: Sure, sure. [LR578]

SENATOR SCHILZ: And then you're talking about the barley that's malted already. Do you guys...is there sales tax or anything that you pay on any of that, that you buy, or is that all... [LR578]

JIM ENGELBART: Because we're making the raw inputs into a finished product we're going to sell and pay tax on, there...we don't pay use tax on the raw material, no.  
[LR578]

SENATOR SCHILZ: Right. [LR578]

JIM ENGELBART: The tax is on the finished goods and anyone...Hobie is in here. He knows. [LR578]

SENATOR COASH: He's next. [LR578]

JIM ENGELBART: We pay a lot of tax. Roughly, 30 percent of our cost is taxes. [LR578]

SENATOR SCHILZ: Sure, sure. What I was asking is, since there's some processing that's going on with those products, is there any way that we could look to help you out there? So that's what I was wondering, so, okay, thank you. [LR578]

JIM ENGELBART: Definitely. I like where you're...I like that tree you're barking up.

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[LR578]

SENATOR COASH: Thank you, Senator Schilz. Any other questions for Jim? Seeing none, we appreciate your testimony. [LR578]

JIM ENGELBART: Thank you. [LR578]

SENATOR COASH: Very helpful. Hobie, you want to come up? [LR578]

HOBIE RUPE: Sure. Gosh, here I thought I might get away having to testify. [LR578]

SENATOR COASH: You don't have...we... [LR578]

HOBIE RUPE: That's all right. I'm kidding. [LR578]

SENATOR COASH: We like to have you in the seat in case we have any tough questions for you. [LR578]

HOBIE RUPE: Of course. My name is Hobert Rupe. I serve as the executive director of the Nebraska Liquor Control Commission. Yeah, I can't grow anything except weeds, so I'm not an expert on that one, so I'll have defer any of those questions. I can give you a brief overview, sort of, of how the industry has grown over the last couple of years and sort of to market the explosive growth. In 2011, this is back three years ago, we had 17 either Class L or Class LK licenses. Those are the craft brewery license. We had 17 of them. In 2012, that grew to 20. In 2013, that grew to 24. As of today, we have 36. So you've seen the exponential growth every year of the craft brewery license. That is reflecting a national trend. Beer consumption isn't really going up. In fact, last I saw, I saw that it dipped down a little bit, so. But what you're doing is you're seeing a reorganization of the pie. For years, you know, don't quote me on this, but I think Sam Adams might finally be over 1 percent of the beer market. That was their goal. And

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people think of Sam Adams as the biggest but, you know, they always sort of position themselves as the largest minnow. But the percentage of craft beer is increasing, and most of those sales are coming from people who are shifting over from the big two manufacturers, which would be Anheuser-Busch/InBev and the MillerCoors conglomerate or coordination. We've seen similar growth in the gallonage. I just was checking my iPhone. I had to get the...back in 2011, we did just right around 509,000 gallons of beer. We're over that this year already as of August, and so we've already done...eclipsed what we were making three years ago in the number of gallons of beer. It is taxed at the same rate. It's taxed at 31 cents a gallon. So beer is taxed...from the excise tax perspective, so that's set...I mean, whether it's a gallon of Bud Light, it's taxed at that rate; whether it's a gallon of Blue Blood or any...same tax rate. The tax rate, the tax is collected from beer that's imported into the state at the wholesale level when it lands at the wholesaler. That tax accrues and they need to submit that. Craft breweries, when it's finished and ready to be moved off the bonded premise to be to sale, that's when the state excise tax would attach. We've seen similar growth recently in craft distillery. There are currently five. There's one pending. I think it might be called Salt Valley or something. I don't know. But it's just about ready to issue. But the gallonage, you know, that's at the "Z," I mean, we're starting to run out of alphabet, so it's a Class Z license, is a...in 2011, the first year, they had about 2,300 gallons. This year, already, we're over 5,400 gallons of distilled spirits. And I think the reason you see both craft brewers and distillers put in the same thing is because the process to create both of those products is very similar, especially at the beginning process. They use similar products, i.e., the grains. You know, I don't think the craft distilleries use the hops. The hops are used as a bittering agent to balance the sweetness from the malted grains in beers. But so both those numbers are increasing. And back in 2011, we had two distilleries. Now we have five and another one pending. That's class...that's taxed at \$3.75 a gallon because, you know, distilled spirits are taxed at a much higher rate. Together, all combined, the commission estimates that it will collect just somewhere over \$30 million in excise tax from the General Fund this year, which makes us the second largest contributor to the General Fund although, you know, that's compared to

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the Department of Revenue so it's sort of comparing, you know, the elephant and the mouse. So I can say that the industry is continuing to grow, along with that, the regulatory burdens that come with that. It must have been a really slow news week earlier this week because I saw they picked up our...someone actually looked at our budget request and saw that I was asking for another auditor to help out on these issues. But the continued growth of actual producers in the state, you know, is one of the reasons for that. I would say that, you know, we haven't seen a bill in particular. I will now do my canary in the coal mine: We have to be very careful when we're looking to incentivize parts of the alcohol industry. There's the case of Granholm v. Heald, which was years ago from the Supreme Court, which in a nutshell said, okay, states, in the Twenty-First Amendment you can regulate your consumption, sale, and production of alcohol; however, you can't do it so far that you appear to be benefiting state producers to the detriment of out-of-state producers, because then you're running into a commerce clause violation. Now because it is a constitutional right under the Twenty-First Amendment, it's, you know, you can get by with stuff which normally would be a commerce clause violation under a strict scrutiny standard because it's a rational basis. So I just...whatever comes out of this thing, just make sure that we're very careful that it doesn't appear to be that you're favoring in-state entities over out-of-state entities or you're probably get me sued again. And apparently that seems to be the fun thing to do of late, so. [LR578]

SENATOR COASH: Well, thank you, Hobie. And I've been on this committee for six years, and you've done your yeoman's work in reminding all of us about the Granholm case and the... [LR578]

HOBIE RUPE: I feel like a parrot, but you have to say that. You have to make sure that you're aware of that. You have to be very careful when you're drafting it. [LR578]

SENATOR COASH: I think it's safe to say that you're on the record on that particular issue. Senator Lautenbaugh. [LR578]

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SENATOR LAUTENBAUGH: Doesn't the Supreme Court usually give deference to the stuff, things we pass? I mean, what are you worried about? (Laughter) [LR578]

HOBIE RUPE: I have no idea what you're talking about in that regard on cigar bar licenses. [LR578]

SENATOR JOHNSON: I knew you'd come up with (inaudible)... [LR578]

SENATOR LAUTENBAUGH: You don't have to answer that. (Laughter) [LR578]

HOBIE RUPE: Yeah, one of the other places I was named as a defendant. [LR578]

SENATOR COASH: Any other questions for Hobie? [LR578]

SENATOR SCHILZ: Not after that one. [LR578]

SENATOR COASH: I've got one for you, Hobie. [LR578]

HOBIE RUPE: Sure. [LR578]

SENATOR COASH: One of the things that got us to take a look at this was what we've done as a state for the wine industry,... [LR578]

HOBIE RUPE: Yeah. [LR578]

SENATOR COASH: ...because what...you know, this is kind of where this started was how we have...and that was before my time. You were around. Can you briefly just kind of brief us on what the state does that works with the... [LR578]

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HOBIE RUPE: Yeah. The one... [LR578]

SENATOR COASH: ...grape producers and the wineries. [LR578]

HOBIE RUPE: Yeah. The wineries, and you might have saw and there was an article earlier this spring, earlier this summer, about some issues with the wineries. The craft...the wineries are sort of at times probably the most powerful single license we issue. Craft wineries, I mean the farm wineries, have the ability to manufacture their product. They can then act as their own wholesaler. They don't have to go through a wholesaler. The beer, any craft breweries go through the wholesale tier. And then they can also sell it themselves at the one license...at their location and one other one. So they sort of can have rights at all three tiers, which is very...an anomaly. But then they have limitations at all those three tiers. One of the issues that...and it's an issue which is, you know, we have to be careful with. There's actually...that's the one time whereas craft brewer pays exactly the same tax rate, you know, Blue Blood is paying the same tax rate per gallon as Anheuser-Busch/InBev. Farm wineries have a beneficial tax rate. They pay 6 cents a gallon where most wine is taxed at 91 cents a gallon. But the requirement is that they have to be, to be a Nebraska farm winery, to do that, they have to use 75 percent of their total production has to be from Nebraska agricultural product. And when I referenced the article earlier, that happened because we had to do a couple waivers this month, this year, because of the combination of the very hard winter, the very late freeze, and then, to add insult to injury, the hail storms which went through a lot of the prime vineyards in the state, and so the grape production was down. So there's...they have a beneficial tax rate, but then they have a requirement that, you know, their output has got to be...contain 75 percent of Nebraska agricultural product. The other thing where the sort of the farm wineries got an incentivized mechanism was when we passed, years ago, the direct shipping license where, in other words, a small winery in California, I can get what's called a direct shipping license so I could ship to Mr. Eickmeier directly, not going through the regular three-tiered system. He could order, you know, five bottles of what he wants, and they can ship it directly. Those

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license fees are one of the few times I've actually seen the Legislature earmark General Fund monies for a specific purpose. In this case, they earmarked the license fees for those direct shipping licenses--don't go to the General Fund, they're diverted into a special wine promotions board to help promote Nebraska wine. So in other words, they're making Gallo Winery pay for the promotion of a Nebraska winery if they want to direct ship. So those are the two differences I think that the industry has. You've got a beneficial tax rate for the Nebraska wineries with a very strict requirement, then you've also got a direct funding mechanism to help the promotion of it. [LR578]

SENATOR COASH: Not that this would be practical, but if a South Dakota winery shipped in a bunch of Nebraska grapes, right, and produced a bunch of wine in South Dakota with Nebraska grapes and it was over that 75 percent mark, would that winery then get the same break that the Nebraska wineries get? [LR578]

HOBIE RUPE: No, no. They've got to be a Nebraska winery, which would be domiciled a Nebraska winery. I will let you know that the Farm Wineries Act was pre-Granholm and pre...it's...any ramifications that might come afterwards. The Granholm case was a ground changer. That was the first time the Supreme Court had sort of opined on the interplay between the Twenty-First Amendment and the commerce clause. So, you know, I wouldn't...you know, I just want to caution you that it was there. But as it's drafted, no, they would not get that benefit. [LR578]

SENATOR COASH: Okay. All right. Thank you, Hobie. Any other questions for Hobie? Senator Crawford. [LR578]

SENATOR CRAWFORD: Just so I understand, that sounds to me like something that's giving an advantage to the Nebraska growers. It's just...it's allowed because that was before the case? [LR578]

HOBIE RUPE: It's probably allowed because no one has decided to sue the Nebraska

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wine industry on the issue yet. [LR578]

SENATOR CRAWFORD: No one...yeah. All right. [LR578]

HOBIE RUPE: Yeah, I would say that it would be... [LR578]

SENATOR CRAWFORD: We can't follow it as a model is what I'm trying to ask. [LR578]

HOBIE RUPE: Yeah. It's not to say the same model would not work. [LR578]

SENATOR CRAWFORD: Yeah. [LR578]

SENATOR COASH: All right. Thank you, Hobie. Any other questions for Mr. Rupe?  
Seeing none, appreciate your testimony. [LR578]

HOBIE RUPE: Thank you. [LR578]

SENATOR COASH: (Exhibit 3) That concludes the invited testimony today. But if there are any other members who wish to get on the record, we'll take any public testimony at this time. Come on up. While you're getting settled, and...is...by a show of hands, is anyone else here to testify? Seeing none. While you're getting settled, I want to make sure we read into the record. We did get, for the committee's benefit, a really insightful letter from the Nebraska Tourism Commission on this issue which I want to make sure is read into the record as well. Welcome. [LR578]

BILL HAWKINS: (Exhibit 2) Thank you, Senator Coash and other senators. My name is Bill Hawkins, B-i-I-I H-a-w-k-i-n-s. Thank you for taking your time to consider using local agricultural products to create unique value-added products which provide local jobs and tax benefits. I'm an organic farmer, an herbalist, and have been involved with the Sustainable Ag Society for many years, which consists of family farmers who are

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looking at specialty crops and unique crops that they can produce on their farm and value add to it to benefit the local economy. While I don't drink a lot of alcohol, I do enjoy a good craft beer or wine and I have a lot of friends and business associates who produce a lot of fine products. I was at a seminar at a conference with the Sustainable Ag Society where the Rhynaldses presented a program on growing hops, and so I've been involved with the Kimmel Research Center down in Nebraska City looking at the wine and beer industry. Along with the incredible world-class cheeses that we produce here in the state, which is amazing, we have the ability to produce the best craft beers and distilled spirits in this state. Anything that we can produce and consume locally and also export benefits the state and our local economy. I'm here today as the director of the Nebraska hemp company that is researching and developing the new emerging hemp industry in the state of Nebraska. Industrial hemp is a valuable, drought-resistant, rotational crop that is a seed, food, fuel, and fiber crop that is processed locally and can provide sustainable jobs producing environmentally green, value-added products that benefit the local communities across the state. This list of products that can be made from this plant is endless, from the lifesaving medicines, high-protein food products, textiles, biocomposite building products, biodegradable nonplastic caulk, plastics, and also beers and meads and other distilled spirits. The hop plant and the cannabis plant are the only two genus in the same family. They both have similar profiles of secondary metabolites, which are the chemicals that give beer its unique flavors. Up until the declaration of purity by the church in Germany, possibly in the fourteenth century I learned, hemp and other grains and plants were used in the production of beers. The church changed that for a while. There are already companies in Colorado and Washington state and around the world that are producing hemp beers. There are two types of hemp beers produced. The first uses the toasted hemp seeds in the brewing process that add a unique nutty flavor profile. These seeds are legal and imported from Canada now and will be produced in Nebraska soon. I have a handout here that I pulled off the Internet, "What is Hemp Beer," and it talks about using and making different hemp-infused products. The second...and we already have customers who are wanting to use locally produced hemp seed. And as has been stated by numerous brewers and

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processors, that local/sustainable is a buzzword that is driving a real economy. And anything that we can do here in the state of Nebraska to encourage and promote using local products and turning them into value-added products really benefits our state. Possibly, bulkwise, you can buy more cheaper barley up in North Dakota. But when you talk about the environmental cost, the transportation costs, and the benefits of buying it and producing it locally, it's a real benefit for the state. So I thank you for your time. And hemp can produce a real unique product that can add to the benefits that this industry is producing. So thank you for your time. [LR578]

SENATOR COASH: Thank you, Mr. Hawkins. Do we have any questions? [LR578]

BILL HAWKINS: Any questions or...? [LR578]

SENATOR COASH: I didn't know you could put some hemp in beer. [LR578]

BILL HAWKINS: You bet. And I will leave...I've got some packages of hemp seeds that you toast them... [LR578]

SENATOR COASH: I'd go give it to the brewers back there, see what they can do with it. [LR578]

BILL HAWKINS: Definitely. We are already talking with them. Thank you so much for your time. [LR578]

SENATOR COASH: All right. Thank you, Mr. Hawkins. Is there anybody here, anybody else here that would like to go on record on LR578? Seeing none, we'll close the hearing and thank you all for coming today. (See also Exhibits 5 and 6.) [LR578]