

UNITED STATES DEPARTMENT OF AGRICULTURE

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NATIONAL ORGANIC STANDARDS BOARD

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WEB CONFERENCE

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MONDAY,
AUGUST 14, 2017

The National Organic Standards Board
convened via web conference, Tom Chapman, Chair,
Presiding.

BOARD MEMBERS PRESENT:

TOM CHAPMAN, Chair
ASHLEY SWAFFAR, Vice Chair
JESSE BUIE, Secretary
FRANCIS THICKE, Crops Subcommittee Chair
SUE BAIRD
HARRIET BEHAR
ASA BRADMAN
LISA DE LIMA
STEVE ELA
DAVE MORTENSEN
JOELLE MOSSO
EMILY OAKLEY
SCOTT RICE
A-DAE ROMERO-BRIONES
DAN SEITZ

ALSO PRESENT:

JENNIFER TUCKER, Associate Deputy Administrator
PAUL LEWIS, Director, Standards Division
MICHELLE ARSENAULT, Advisory Committee
Specialist, NOSB
MILES MCEVOY, AMS Deputy Administrator

1 P-R-O-C-E-E-D-I-N-G-S

2 (1:06 p.m.)

3 MR. LEWIS: Good afternoon. My name
4 is Paul Lewis, Director of Standards Division of
5 the National Organic Program. I would like to
6 welcome the members of the National Organic
7 Standards Board and the public to today's NOSB
8 discussion in the development of a potential
9 proposal on hydroponics and organic agriculture.

10 This is part of the Board's continuing
11 discussion on this topic, and I am looking
12 forward to today's dialog.

13 The NOSB will be having its next
14 meeting, in fact a face-to-face meeting, from
15 October 31st to November 2nd, 2017. As part of
16 that meeting the NOSB will have a public webinar
17 on October 24th, and a possible second public
18 comment webinar on October 25th to hear public
19 comments on topics to be addressed at the face-
20 to-face meeting.

21 Please check the NOP website to
22 participate in the public comment webinar and

1 face-to-face meeting.

2 I would also like to thank my NOP
3 colleagues for their help behind the scenes to
4 bring us today's teleconference.

5 Before I turn this meeting over to the
6 Chair of the NOSB Tom Chapman, I want to make
7 sure everyone can hear us. And if you can hear
8 us, please chat in the chat room, type in "yes."

9 I would like to now turn the meeting
10 to our Chair of the NOSB, Mr. Tom Chapman. Tom,
11 thank you for chairing today's meeting. I am
12 looking forward to a interesting and productive
13 dialog.

14 CHAIRMAN CHAPMAN: Thank you, Paul.

15 My name is Tom Chapman. I am Chair of
16 the National Organic Standards Board. I would
17 like to welcome all members of the NOP, the
18 National Organic Program staff, as well as the
19 public. Thank you for taking time out of your
20 busy day to listen and help us address this
21 important subject before the organics community.

22 This conference call is to facilitate

1 a public and board-wide discussion of the
2 hydroponics in hopes of getting the Crops
3 Subcommittee additional information that they
4 need to craft a proposal with input from all
5 board members. Board-wide discussions have
6 historically only happened at board meetings.
7 And this conference call is a new approach that
8 will hopefully give subcommittee, the
9 subcommittee additional insight into the thinking
10 of both subcommittee and non-subcommittee
11 members, and to be helpful at moving discussions
12 and dialog of complex topics along more quickly
13 between in-person board meetings.

14 This is a new format for the board, so
15 I ask board members and listening members of the
16 public to forgive us if there are any technical
17 issues. Additionally, we will not be voting on
18 any items today. If you hear us talk about
19 technical terms like motions, proposals, or
20 recommendations it is to talk about the potential
21 of bringing these forward at a future board
22 meeting. Again, no voting will occur today.

1 Since this meeting is meant to
2 facilitate a transparent board-wide discussion
3 prior to a finalized proposal, this conference
4 call was not open to public comment. And the
5 board currently does have an open docket
6 available for feedback directly to board members.
7 If members of the public want to provide more
8 information to the board today, that would be the
9 best forum.

10 Additionally, as Paul outlined, the
11 board, the board will hear public comment in
12 preparation for the fall NOSB meeting via
13 webinar, in-person, and written comments.

14 With that, I will hand the meeting
15 over to Michelle to take a verbal roll call of
16 members present. Michelle.

17 MS. ARSENAULT: Thanks, Tom.

18 All right. Sue Baird.

19 MS. BAIRD: Yes.

20 MS. ARSENAULT: Hi, Sue.

21 Harriet Behar.

22 MS. BEHAR: Here.

1 MS. ARSENAULT: Excellent.
2 Asa Bradman.
3 MR. BRADMAN: Asa is here.
4 MS. ARSENAULT: Thank you.
5 MR. BRADMAN: Yes.
6 MS. ARSENAULT: Jesse Buie.
7 MR. BUIE: Present.
8 MS. ARSENAULT: Hello there.
9 Tom Chapman, I know you're here.
10 Lisa de Lima.
11 MS. DE LIMA: Here.
12 MS. ARSENAULT: Excellent.
13 Steve Ela.
14 MR. ELA: I am here.
15 MS. ARSENAULT: Excellent, sir.
16 Dave Mortensen.
17 MR. MORTENSEN: Present.
18 MS. ARSENAULT: Thank you, sir.
19 Joelle Mosso.
20 MS. MOSSO: Here.
21 MS. ARSENAULT: Hello.
22 Emily Oakley.

1 MS. OAKLEY: Present.

2 MS. ARSENAULT: Hi, Emily.

3 Scott Rice.

4 MR. RICE: Present.

5 MS. ARSENAULT: Thank you, sir.

6 A-dae Romero-Briones.

7 MS. ROMERO-BRIONES: Here.

8 MS. ARSENAULT: Thank you.

9 Dan Seitz.

10 MR. SEITZ: Here.

11 MS. ARSENAULT: Great.

12 Ashley Swaffar.

13 MS. SWAFFAR: Here.

14 MS. ARSENAULT: Okay, thank you.

15 And Francis Thicke.

16 MR. THICKE: Here.

17 MS. ARSENAULT: Great. That's all 15

18 NOSB members present and accounted for.

19 CHAIRMAN CHAPMAN: Thank you,

20 Michelle. And with that I'm going to hand the

21 board -- I'm going to hand the meeting over to

22 Francis, chair of the Crops Subcommittee to run

1 the discussion from here. Francis.

2 MR. THICKE: Thanks, Tom. And thanks,
3 Michelle and Paul.

4 So, as Tom mentioned, what the Crops
5 Subcommittee would like to do here today is get
6 feedback from the full board on some of the key
7 concepts in the draft proposal on hydroponics and
8 container growing which has been prepared by
9 members of the Crops Subcommittee. In
10 particular, we would like board feedback on four
11 proposed motions in the document.

12 Also, I understand that some members
13 of the Crops Subcommittee are planning on
14 preparing a minority report to be included in the
15 proposal. And we would like to, if you wish, to
16 hear about that as well.

17 So, what I'll do is read each motion,
18 each draft motion along with a little background
19 information. And then we can open it up for
20 discussion.

21 So, getting right into it, the first
22 one is on aeroponics. And aeroponics is defined

1 here as a variation of hydroponic plant
2 production in which plant roots are suspended in
3 air and misted with nutrient solution. And the
4 proposed motion is to not allow aeroponic
5 production systems to be certified organic.

6 With that, I would open it up for
7 comments from board members. You can raise your
8 hands on the screen.

9 Everybody is a little bashful here.
10 Oh, here we go. Harriet is the first one with a
11 hand raised.

12 MS. BEHAR: Hello, everyone.

13 MR. THICKE: And Emily, I'm sorry.
14 I'm sorry, Emily Oakley is second on deck.

15 Thank you. Go ahead.

16 MS. BEHAR: So, aeroponics is not
17 allowed in two of our major trading partners, the
18 European Union and Canada. And I think that the
19 definition is very clear. And eventually I'm
20 hoping that we can have a discussion, if it does
21 go through the NOSB recommendation, that we also
22 provide the National Organic Program, with the

1 consultation, a place to put this prohibition in
2 the regulations.

3 So that that's my only concern with
4 not allowing it is making sure that we are on
5 board, if it is disallowed, that we know where to
6 put it in the regulations. Because that was one
7 comment we did get from the National Organic
8 Program on our last draft -- last proposal, and
9 that's why we took it back, is that they did not
10 understand where they would put the rulemaking.

11 But I support the proposal that
12 aeroponics as defined not be permitted to use the
13 USDA organic seal or organic label in the
14 marketplace.

15 I'm done.

16 MR. THICKE: Thank you, Harriet.

17 Emily.

18 MS. OAKLEY: Yes. I just think that
19 this might be one area where we had the greatest
20 amount of consensus in previous discussions, both
21 possibly board-wide at some of the in-person
22 meetings, and also in the CS subcommittee

1 meeting. So I wanted to just get a sense from
2 people on the call today if there is a general
3 consensus for prohibiting aeroponics. If there
4 is anybody that wanted to speak in favor of it.
5 Just trying to get a sense of where people stand
6 on this issue.

7 And I'm done.

8 MR. THICKE: Okay, thank you.

9 There are no other hands raised on
10 this issue right now. And I would echo what
11 Emily asked is that if there's anybody here, the
12 Crops Subcommittee would like to know if there's
13 anybody who would prefer that aeroponics be
14 allowed to be certified organic. If we don't
15 hear from anybody then we'll assume that that
16 proposed motion has unanimous support.

17 MS. MOSSO: Joelle.

18 MR. THICKE: Joelle, I see your hand
19 is raised.

20 MS. MOSSO: Hi. Yes, I was actually
21 going -- I'm echoing actually that I could
22 support the aeroponics under the current

1 definition would not be allowed.

2 MR. THICKE: Thank you, Joelle.

3 So I don't see any other hands raised
4 on this issue, so let's move right on to the next
5 one.

6 Oh, Ashley.

7 CHAIRMAN CHAPMAN: I think Ashley
8 raised her hand.

9 MR. THICKE: Yes, Ashley, did you want
10 to speak here?

11 MS. SWAFFAR: Yep. Just want to say
12 I'd be in favor of not allowing it also.

13 MR. THICKE: Thank you.

14 Okay, if nobody else, I don't see any
15 other hands raised, so let's move on to the
16 second proposed motion, and a draft motion I
17 should say, and that's on hydroponics. And in
18 this one, for the discussion here we reverted
19 back to the definition of hydroponics that was
20 used by the NOSB in its 2010 recommendation.

21 And I'm just going to read a few
22 sentences here to give the background on that.

1 In the 2010 recommendation the NOSB
2 stated that hydroponics cannot be classified as
3 certified organic growing methods due to the
4 exclusion of the soil-plant ecology. The
5 definition of hydroponics that they used then is
6 "the production of normally terrestrial, vascular
7 plants in nutrient-rich solutions, or in an
8 inert, porous solid matrix bathed in nutrient-
9 rich solutions."

10 And if you remember, in the spring,
11 those of you who were there, spring 2017 in a
12 discussion document the Crops Subcommittee had
13 changed that definition slightly and had included
14 along with in their matrix "biologically
15 recalcitrant." Well, in this draft motion we've
16 taken that out and gone back to the 2010
17 recommendation.

18 So I guess I would open it up at this
19 point for discussion on that draft motion and
20 definition.

21 CHAIRMAN CHAPMAN: Yes, Francis, I'll
22 raise my hand.

1 MR. THICKE: Okay, Tom, go ahead.

2 CHAIRMAN CHAPMAN: I'm curious to know
3 what the Crops Subcommittee's thought is the
4 value of I guess re-passing the 2010
5 recommendations, given I believe this item came
6 on our work agenda because the 2010 definition
7 wasn't sufficient to provide the program with the
8 information they needed to move forward and
9 approve anything.

10 What value does it have re-passing the
11 same motion?

12 MR. THICKE: Well, the value is that
13 what we have to follow up is a container growing
14 motion, draft motion that would define container
15 growing. I think in the past what the NOP was
16 concerned about is that this did not address
17 container growing. And so we are addressing that
18 in a future motion that we'll discuss here in a
19 minute or two.

20 Okay, Jesse's hand is raised. And
21 then following Jesse is Harriet.

22 Go ahead, Jesse.

1 MR. BUIE: Yes. You know, how will
2 the revised EU organic regulations, you know,
3 banning hydroponics, how is that going to affect
4 our deliberations?

5 MR. THICKE: I don't know if I can
6 answer that question. But you bring up a point
7 that -- and this is a good background that will
8 be important for the container discussion -- the
9 European Union, except with a few exceptions,
10 does not allow any container growing. Everything
11 has to be grown in soil, connected to the Earth's
12 surface.

13 And we understand that the European
14 Union now is in the process of actually making
15 that just applied to all countries. Apparently
16 there are a few countries that have an exception,
17 but apparently that is going to be for all
18 countries in the European Union.

19 And there are some implications there.
20 One is that it's not reciprocal in that European
21 growers can grow hydroponically and sell it in
22 the U.S. Of course, U.S. growers cannot sell

1 hydroponically and sell it to the European Union.

2 So, I don't know exactly what all this
3 is going to do, what it all implies for the
4 European Union in that our market, our exchange.

5 If anybody else has a comment that
6 came in on that?

7 CHAIRMAN CHAPMAN: This is Tom. I
8 have a comment.

9 MR. THICKE: Go ahead, Tom.

10 CHAIRMAN CHAPMAN: I mean there are
11 some fairly significant differences between the
12 U.S. standards and international standards for
13 European Union today. Some examples are the
14 allowance of antibiotics in livestock, the
15 allowance of vitamins and minerals. On the U.S.
16 side in cost of products, the way you calculate
17 non-agricultural and agricultural ingredients and
18 what's allowed percentage-wise is vastly
19 different between the U.S. and Europe. And
20 there's others.

21 And these, you know, like sulfites in
22 wine, another example, these are all fairly

1 significant differences that haven't blocked or
2 really limited trade between the U.S. and Europe.
3 They're just dealt with as one-off situations.
4 Some may result in annotations to the equivalency
5 agreements, and some are just accepted as
6 regional differences between standards.

7 I don't really see -- I look at
8 international models as a way of providing input
9 as how other folks have addressed this issue, but
10 I don't see it as a motivating reason to take a
11 certain action or establish a specific standard.

12 And that's it for me. Thanks,
13 Francis.

14 MR. THICKE: Okay, thank you, Tom.

15 One follow-up point. I remember when
16 we were doing the antibiotics in fruit, tree
17 fruit, is that the Europeans would not allow
18 American apples imported that had been grown with
19 antibiotics. So, I think on major issues there
20 has sometimes been some difference. But that's
21 not the case in hydroponics at this point. Maybe
22 they will take action in the future; I'm not

1 certain.

2 But I do know in speaking with some of
3 the European representatives that they are
4 concerned that they have a lot of pressure from
5 the hydroponics growers, and they're concerned
6 that if the U.S. passes a very weak hydroponic
7 rule that it will have implications for them down
8 the road.

9 Next up is Harriet.

10 MS. BEHAR: Okay. So, to the first
11 question about whether the -- why we went back to
12 the 2010 definition, in my view it's not so much
13 the definition that's the issue but how, what is
14 the mechanism for regulating that system of
15 production?

16 And as Francis said, we are going to
17 be looking at containers as being a separate
18 system of production, separate from a
19 "hydroponic" operation that meets the 2010
20 definition. And then we would look for a
21 mechanism to not allow or allow, however you want
22 to have it. So we would have that definition.

1 And I think we all agree that that
2 definition is very clear, very understandable,
3 actually does mesh well with our trading
4 partners.

5 In response to whether or not this has
6 caused any market interference, especially
7 internationally, I would also state that the --
8 that in our equivalency agreements with both
9 Canada and the European Union, hydroponic is
10 called out specifically as something that is not
11 allowed to go into the European Union. And we do
12 have some issue with "organic" and NOP organic
13 operations in -- on the land mass of the European
14 Union that can only sell their products into an
15 organic market overseas into our market because
16 in their home market it is not allowed.

17 So there is to me some market
18 confusion and even some chance for mislabeling
19 due to that non-allowance.

20 And I agree that there is the
21 antibiotic --

22 MR. THICKE: Thank you.

1 MS. BEHAR: -- side with the livestock
2 that we will not accept antibiotics from
3 livestock. So typic -- that's produced in the
4 European Union because they do allow it. But
5 typically what happens is then those operations
6 have to be dual-certified to both the NOP and to
7 the European Union.

8 I'm done.

9 MR. THICKE: Thank you, Harriet.

10 And people said they can't tell who's
11 speaking. So I will say myself that this is
12 Francis talking again.

13 I don't see any other hands raised.
14 But I would raise the question is there anyone on
15 the board who cannot today support the 2010
16 recommendation based upon the 2010 definition of
17 hydroponics? The Crops Subcommittee would like
18 to know that as we try to work to finalize our
19 recommendations, our proposals and motions.

20 Ashley has her hand raised. Ashley,
21 go ahead.

22 MS. SWAFFAR: Thanks. So, one thing,

1 I just want to bring up this fact is, you know,
2 the hydroponic definition, like we see in that
3 2010 site, would probably not fit what's
4 currently happening as far as what hydroponics
5 systems are certified. Because I know certifiers
6 are actually certifying those operations
7 according to the 2010 document. So I really
8 think that the currently certified hydroponic
9 systems would still continue to be certified
10 organic if, even if this motion was to go forward
11 not to allow hydroponic systems as you've written
12 it.

13 MR. THICKE: So, Ashley, the question,
14 and I don't know the answer, are there not some
15 hydroponic operations that are in pure liquid
16 that are certified today? Can anybody answer
17 that question?

18 Ashley, go ahead.

19 MS. SWAFFAR: Right. Well, I was
20 going to say it's so, everybody has all these
21 different ideas, because they're still in that
22 little peak, whatever you call that little thing

1 that looks like the size of a quarter that will
2 keep things, so that, well, if you would really
3 consider that really an all-liquid system.

4 But, yes, I mean there are some --

5 MR. THICKE: I thought that --

6 MS. SWAFFAR: Go ahead. Sorry.

7 MR. THICKE: Go ahead. Go ahead. Go
8 ahead, Ashley.

9 MS. SWAFFAR: I haven't seen every
10 system out there that's certified. I haven't
11 seen very many. So I can't speak to what every
12 certifier does and look at every system. But I,
13 I do think there's a lot of certifiers out there
14 that are following the 2010 recommendation as
15 justification for certifying hydroponic systems.

16 So I really think that we'll still
17 have some hydroponics.

18 MR. THICKE: I'm interrupting, Ashley.
19 Would you yourself personally be in favor of the
20 hydroponic operation that uses all organically-
21 approved inputs that's in pure liquid, like a
22 nutrient film technique, to allowing them to be

1 certified organic?

2 MS. SWAFFAR: Thanks for putting me on
3 the spot. Yes, I would. I would.

4 MR. THICKE: You would consider them
5 to be certifiable. Okay, thank you.

6 MS. SWAFFAR: Yes. I do support the
7 2010. But I, you know, I'm very open to
8 hydroponics because I think they're interesting
9 new technology that really has a place in the
10 organic.

11 MR. THICKE: Okay. Joelle, I see your
12 hand is raised.

13 CHAIRMAN CHAPMAN: Francis, can you
14 add me to this as well?

15 MR. THICKE: Yes. Tom, you can be
16 second.

17 Joelle.

18 MS. MOSSO: This is Joelle. And I
19 just wanted to follow up on what Ashley also said
20 and that I, too, would support more novel systems
21 that allow for systems to evolve and to be
22 inclusive of hydroponics. And I, you know, ask

1 it be discussed more later in the call.

2 There's a group of us, you know,
3 providing a minority view that will be speaking
4 to what we, you know, view as compliant. And we
5 do feel that the 2010 recommendation for the
6 definition of hydroponics is fine but does need
7 further elaboration, as was requested from the
8 NOP. So, we will be providing that, not with
9 details on this call but we are in the process of
10 writing it.

11 MR. THICKE: Thank you, Joelle.

12 Tom.

13 CHAIRMAN CHAPMAN: Yes. To attempt to
14 answer your first question about operations being
15 certified, I don't know. But from the feedback
16 I've seen from certifiers, from the public input
17 in the past, and from the kind of pro-hydroponics
18 subcommittee of the Hydroponics Subcommittee --
19 Task Force, it sounds like most of those
20 operations consider themselves in compliance with
21 the 2010 recommendation.

22 So, I mean that kind of gets back to

1 my first point of what additional clarification
2 that provided. I am fine with the 2010
3 recommendation from the NOP and would vote in
4 favor of it, but I don't -- the problem I have
5 with the 2010 recommendation is it didn't provide
6 the clarity to the program and to the public as
7 to what it was really prohibiting.

8 From the way I read it, it prohibits
9 items without any sort of plant, terrestrial
10 plants grown without any substrates, similar to
11 the aeroponics motion that you discussed earlier,
12 potential motion. Or plants grown entirely in
13 inert substrate which, you know, would mean
14 something like a perlite which, as I understand,
15 most operations have moved away from.

16 So while I'm fine supporting the 2010
17 recommendation again, I don't, I still think it
18 sows a lot of confusion out there in the
19 community as to what's really being prohibited.

20 MR. THICKE: Okay. Joelle, did you
21 have a hand raised again? It's still up on the
22 right.

1 MS. MOSSO: No, I don't. Sorry. Let
2 me lower it.

3 MR. THICKE: Okay. Steve. Steve Ela
4 has his hand raised. Steve.

5 MR. ELA: I think, and again I agree
6 with what you're saying, Tom, but I guess, you
7 know, the Crops Committee was, you were -- we
8 know this is a controversial topic so we were
9 trying to find at least, you know, some of the
10 things that we felt we, you know, could have some
11 common ground on among the whole NOSB and then
12 work our way up from that.

13 So while it's sort of restating the
14 2010, you know, recommendation, I guess we felt
15 like it was still important to say, yes, here's
16 at least for the NOSB board as a whole here's the
17 baseline yet again. And I, you know, agree the
18 wording probably needs to be added to just to
19 help clarify that a little bit that, you know,
20 you can't grow in rockwool, you can't --
21 rockwool, you can't grow in perlite. And so at
22 least just to draw some baseline that, you know,

1 here's something the board agrees on.

2 So that's all I have to say.

3 MR. THICKE: Thank you, Steve.

4 Anybody else, comment?

5 MR. BRADMAN: This is Asa. I don't
6 know, can you hear me?

7 MR. THICKE: Yes.

8 MR. BRADMAN: Okay. I apologize for
9 interjecting, my computer's not letting me click
10 the hand, raising my hand.

11 I want to go back actually to the
12 aeroponics. I might be an outlier here but I'm
13 not opposed to aeroponics. I'm not saying I'm
14 for it right now either. I've been in the
15 situation in the last six months where I'm
16 gathering information and I haven't seen an
17 aeroponics production system. And I feel like I
18 need hands-on experience and observation and
19 discussion before making a judgment about that.

20 And I have, you know, I've seen now
21 more kind of hydroponic and container systems.

22 And I know I'd like to come up with a compromise,

1 maybe that's a labeling compromise or other, that
2 can foster production of food that uses less
3 resources and less synthetic chemicals. And I'd
4 like to do that in a way that adheres to the
5 principles of the Organic Foods Production Act.

6 I don't quite see the way there right
7 now but I think there is a possibility to do
8 that. Some of the suggestions around -- well,
9 we'll talk about containers later -- you know, I
10 think there's points there about using materials,
11 reusing materials, maintaining percolation with
12 soil, et cetera, that have a lot of promise.

13 MR. THICKE: Thank you, Asa.

14 Harriet has her hand raised. Go
15 ahead, Harriet.

16 MS. BEHAR: I'm wondering if something
17 that would help this definition would be to
18 eventually define inert material. That's my,
19 that's my comment, that that seems to be what is
20 that inert material we're talking about? It's
21 either roots in water or roots that are in some
22 sort of rockwool, coconut core, perlite. I don't

1 know what else we'll come up with. And I think
2 some of us feel that that's an inert material and
3 others not.

4 So I'm just wondering if the
5 definition of inert material might be useful.

6 I'm done.

7 MR. THICKE: Okay. Thank you,
8 Harriet.

9 I guess we've kind of gone a little
10 bit in circles with this with recalcitrance and
11 so on. And when I search, I Google the word
12 hydroponic, basically it means grown in water.
13 And I guess it comes from Greek. Greek, "hydro"
14 is water and "ponos" is work. Water works or
15 something. So it's basically I think the common
16 understanding is that if you're growing with
17 virtually all water it's hydroponic. But that
18 doesn't really seem to be working in this case.

19 We'll go back and we'll look at it a
20 little more.

21 I don't see any more hands up right
22 now. So let's move on for now to aquaponics.

1 And aquaponics is defined here as a recirculated
2 hydroponic system in which plants are grown in
3 nutrients originating from aquatic animal
4 wastewater, which may include the use of bacteria
5 to improve availability of those nutrients to the
6 plant. The plants improve the water quality by
7 using the nutrients, and the water is then
8 recirculated back to the aquatic plants.

9 And the proposed motion is very simple
10 again: motion to not allow aquaponic production
11 systems be certified organic.

12 I would like, I'm very interested to
13 hear what the whole board thinks about
14 aquaponics. And I don't see any hands raised yet
15 but I welcome your comments.

16 CHAIRMAN CHAPMAN: Francis, this is
17 Tom.

18 MR. THICKE: Do ahead, Tom.

19 CHAIRMAN CHAPMAN: Can I get a better
20 idea as to the justification for why the Crops
21 Subcommittee would propose prohibiting this form
22 of production?

1 MR. THICKE: It's because aquaponics
2 is actually pure hydroponics, often without any
3 substrate at all. It's basically hydroponics.

4 And some aquaculture systems are
5 completely linked and they only use fish waste
6 for their nutrients. Whereas as others are, just
7 are -- I forget what the term is but they use
8 some fish waste and also some liquid nutrient
9 feeding.

10 So the thinking of the Crops Committee
11 in this is that aquaponics is really just
12 hydroponics using a difference source of
13 nutrients.

14 I see Harriet has her hand raised, and
15 then Steve has also. Go ahead, Harriet.

16 MS. BEHAR: I also have concern about
17 the fact that this is a raw manure that is not
18 really treated systematically. And I believe
19 there has been some issue with a recall. I'm not
20 sure what the issue was.

21 But I feel that it's really unfair to
22 the land-based producers who have to wait three

1 to four months before being able to apply raw
2 manure to their crops. They wouldn't be able to
3 take the effluent from an aquaponic operation and
4 use it as irrigation water out in their field.
5 So I think it's kind of an unfair playing field
6 to say that because it's right there in the same
7 building and it's floating in the water directly
8 that it would be allowed, whereas it would not be
9 allowed for those in the field operation.

10 And so I think there's a lot more that
11 needs to be looked at in this system. I think
12 there is a lot of interest in the synergy between
13 the fish and the plants and this kind of
14 symbiotic relationship where one, you know, where
15 the plants actually somewhat clean the water so
16 it can go back to the fish. And I can understand
17 how people are attracted to that.

18 But I think we do really need to look
19 at the raw manure issue and having it be in line
20 with field- and land-based and soil-based
21 producers are required to do and still carry the
22 organic label.

1 I'm done.

2 MR. THICKE: Thank you, Harriet.

3 Steve Ela.

4 MR. ELA: Yes. And I would echo what
5 Harriet said, I think, you know, some of that
6 consistency. And I think the Crops Committee, I
7 mean it's one of those things where at this point
8 we'd like to disallow it for organic
9 certification. But in our discussions we've
10 certainly said this is a very fascinating system
11 that, if we could solve some of these problems,
12 you know, we would be open to discussing it in
13 the future and allowing it.

14 But I think just like Harriet said,
15 the manure issue is probably a big one for me in
16 terms of consistency. And I'd rather see it
17 disallowed for now and then come back and, you
18 know, later on with some, you know, clearer
19 standards on the manure issue and some other
20 things, you know, allow it in the future. But
21 I'd rather not go down the road of allowing it
22 now and then trying to say, wait, this is, you

1 know, we need to clarify it. I'd rather do it
2 more prudently and thoughtfully without putting
3 the -- without having it already out there in
4 practice.

5 I'm done.

6 MR. THICKE: Thank you, Steve. Thank
7 you, Steve.

8 We have Dan Seitz and then Scott Rice
9 and then Emily Oakley. Go ahead, Dan.

10 MR. SEITZ: So this is Dan Seitz.

11 CHAIRMAN CHAPMAN: This is Tom. Just
12 raising my hand, Francis, so you know that my
13 hand's been raised.

14 MR. THICKE: Oh, Tom. Oh, okay.

15 Go ahead. You had your hand up first,
16 Tom, go ahead.

17 CHAIRMAN CHAPMAN: No, no. You can
18 let Dan go ahead. Thanks.

19 MR. SEITZ: Okay. So to some degree
20 I'm echoing what Steve said. I see this as a
21 prudent motion to pass now in order to avoid the
22 situation where we're actually faced with the

1 hydroponics where certifiers start to certify the
2 operation and then after the fact we're in the
3 awkward position as a board, and the NOP is in
4 the awkward position of trying to then clarify
5 what are the standards that should be used for
6 this.

7 So I don't see this as a prohibition.
8 Certainly the aquaponic folks can continue. It's
9 really a question of whether the coveted organic
10 seal can be applied to that. And before that
11 possibility is open, I think we have to be very
12 clear if we -- very clear on what would be the
13 requirements for such a system to be certified
14 organic.

15 So once again I think it's more to
16 just avoid the messy situation that we're finding
17 ourselves in with hydroponics.

18 And I'm done.

19 MR. THICKE: Thank you, Dan.

20 Tom.

21 CHAIRMAN CHAPMAN: Thanks. So I'll
22 just go now after the next piece. But so as I

1 understand it, these operations are already
2 currently being certified and are allowed under
3 the current interpretations by the program. So
4 it's not like we'd be prohibiting something novel
5 that hasn't yet started. We would be prohibiting
6 a practice that has already occurred that the
7 businesses have been built around, with the
8 possibility that we would bring it back again in
9 the future if we did more research.

10 That's not, that's not a prudent move
11 I guess in my view. We should either, we should
12 have done our due diligence. And if we need to
13 manage the input system for aquaponic growers,
14 similar to how an input system for manure is
15 managed for in-ground grower, there's reason for
16 that. And we should explore that option.

17 But the wholesale prohibition of them
18 because we haven't done our research when they're
19 already allowed is just not, it's not palatable
20 to me.

21 That's it for me.

22 MR. THICKE: Okay. Thank you, Tom.

1 Scott next; right? Go ahead, Scott.

2 MR. RICE: Thanks. Thank you.

3 Tom made the point that I was going to
4 make, but can add to that. Essentially, yes, we
5 have these already in inspection. I think it
6 would not be helpful to pull that back and then
7 allow it. Again, that's not a very sensible way
8 for a business to respond to in terms of how a
9 regulation works.

10 And in terms of just aquaponics in
11 general, I think it's a system within kind of the
12 framework of hydroponics and fluid-based systems
13 that we talk about that most reflect kind of what
14 we're looking for in my mind for an organic
15 operation, and that's kind of the ideal closed
16 loop system. You know, we like to see that type
17 of resources, input, and nutrients.

18 So to me it speaks to kind of what,
19 what I look for in the ultimate goals of organic
20 production.

21 Another good point, I think, is that
22 manure in the regulation is not -- it's

1 explicitly defined as feces, urine, or other
2 excrement in bedding produced by livestock that
3 has not been composted. And livestock in the
4 regulation does not include aquatic animals. So
5 I just wanted to put that out there as well.

6 And that's it for me on that. Thanks.

7 MR. THICKE: Thank you, Scott.

8 MR. BRADMAN: This is Asa.

9 MR. THICKE: Yes, Asa.

10 MR. BRADMAN: Apologies again for
11 interrupting. My computer is not letting me
12 raise my hand.

13 I just wanted to echo what Tom and
14 Scott said and that, you know, I think Harriet
15 raised this really important point about concerns
16 about manure and food safety and things like
17 that. And, you know, I certainly agree that
18 there should be careful evaluation of that and
19 any rules around that should protect, you know,
20 protect food safety and ensure food safety. And
21 I don't know if that means it's the exact, you
22 know, replication of what we do with land-based

1 manure, but I agree that that's important.

2 MR. THICKE: Thank you, Asa.

3 Next we have Emily and then Ashley
4 after Emily. Go ahead, Emily.

5 MS. OAKLEY: Thank you.

6 I wanted to echo what you said
7 earlier, Francis, by the reason that the Crops
8 Subcommittee brought this forward is because we
9 determined these systems to be essentially
10 hydroponic. They are hydroponic but simply with
11 the inclusion of fish tanks from which water is
12 recirculated for feeding. But the majority of
13 the plants' nutrients, if not all of them, are
14 coming from the fish.

15 So these systems are hydroponic. I
16 think to not disallow them is to create a double
17 standard. Again, I think that we do want to
18 disallow them because they are hydroponic.

19 I also think that there are definite
20 concerns with the manure issue, whether it's
21 within the regulations manure is defined as
22 livestock or not, it's definitely a raw feces

1 product that we would definitely want to
2 consider.

3 I also think that there is an animal
4 welfare component that needs to be addressed if
5 something like this were going to be allowed.
6 And I feel perhaps more strongly that this isn't
7 something that we would disallow now and then
8 come back and look at later. I think it's
9 something that we would disallow now and be very
10 unlikely to come back and change. Just as I
11 think that would be the same for a disallowance
12 of aquaponics or hydroponics.

13 And I'm done. Thank you.

14 MR. THICKE: Thank you, Emily.

15 We have Ashley next and then Lisa. Go
16 ahead, Ashley.

17 MS. SWAFFAR: Yes. So I just kind of,
18 Scott kind of hit on what I was going to say, but
19 you know I would very much be opposed to bringing
20 something forward that several members of your
21 Crops Committee feel like that might need more
22 information or needs to be looked at further.

1 There's no, there's nothing that says that we
2 have to bring it forward at this meeting.

3 If you guys feel like you need more
4 information on aquaponics, I would, you know, --
5 don't, don't bring a proposal forward that you
6 don't have all the information on.

7 And then, you know, but I do really
8 like the aquaponics system. I will say that.
9 And Emily talked about the animal welfare
10 component. You know, livestock has aquaculture
11 kind of weaving in the list of their systems so,
12 you know, maybe that could be looked at in the
13 future also.

14 Thanks. Just a quick comment.

15 MR. THICKE: I would like to just --
16 Thank you, Ashley. Since I can't raise my hand,
17 I would like to make a couple points.

18 One is that we have actually looked
19 for information on fish waste. And we've some
20 conflicting, but very, very little, in fact it
21 doesn't appear that there's been a lot of
22 research on it. And so it's not that we haven't

1 done due diligence, it's that it's an unknown
2 right now as far as we can tell.

3 Next up was, I'm sorry, Lisa. Lisa de
4 Lima. Go ahead, Lisa.

5 CHAIRMAN CHAPMAN: Francis, I have a
6 question about that. Can I ask you before we
7 move on to Lisa?

8 MR. THICKE: Yes.

9 CHAIRMAN CHAPMAN: I understand
10 there's a, there's a NIFA grant right now and
11 research against that related to aquaponics and
12 food safety. What, if anything, did the
13 subcommittee think about that information in the
14 USDA?

15 MR. THICKE: If it's the one that I'm
16 thinking about it wasn't very conclusive. It was
17 very limited research and they didn't find
18 anything in their research. But they didn't,
19 weren't about to make any generalizations that it
20 was -- that they had covered the waterfront on
21 food safety and aquaculture.

22 Okay. Let's see, I lost my screen

1 here. Here we go, next up was, I'll just give
2 the order, Lisa and then Harriet and Dave
3 Mortensen. Let's go with that.

4 Lisa.

5 MS. DE LIMA: I just want to echo what
6 some of the sentiments that Scott and Asa put
7 forward that I'm definitely open to aquaponics.
8 And if there's additional issues that need to be
9 worked out as far as regulations, I'd rather talk
10 about that and bring that forward.

11 I definitely wouldn't, couldn't get
12 behind ruling it out at the next meeting without
13 having figured out some of those issues that I
14 realize, Francis, that you're saying you don't
15 have answers to and that you guys have tried to
16 get. But I still wouldn't be comfortable voting
17 to disallow at this point.

18 That's it for me.

19 MR. THICKE: Thank you, Lisa.

20 And then I kind of lost track.

21 There's four of them up there. Who was next, was
22 it Dave Mortensen?

1 MS. BEHAR: No, it was Harriet.

2 MR. THICKE: Go ahead, Dave. You
3 haven't spoken yet.

4 Harriet?

5 MS. BEHAR: Okay.

6 MR. THICKE: Okay, Harriet, go ahead.

7 MS. BEHAR: You want me to go or I can
8 go after Dave.

9 MR. THICKE: If you want to be very
10 polite, let's let Dave go first.

11 MS. BEHAR: Okay, I'm being polite.

12 MR. THICKE: Dave.

13 MR. MORTENSEN: Thank you, Harriet.

14 Yes, I guess, you know, and the Crops
15 group has spent a lot of time reading and
16 thinking about this issue, I guess as we all
17 have. I guess the first thing I would say is
18 that, you know, we're talking -- we're not
19 criticizing or saying something should be done as
20 a production practice. Although, frankly, the
21 aquaponic waste issue, whether it's
22 conventionally or organically grown, to me is a

1 really serious concern.

2 And, frankly, on the NIFA grants
3 proposal front the only way we're going to
4 actually be able to assess the safety of that
5 program is through some sort of epidemiological
6 approach of studies of systems in place, many of
7 them, as opposed to how we control the experiment
8 of the kind that was outlined in the NIFA grant,
9 which would be like searching for a needle in a
10 haystack in my view.

11 This, I agree with Emily, we're
12 looking at a system basically of bathing roots in
13 a nutrient solution. There's a growing body of
14 evidence that would argue pretty strongly that
15 plants that are taking nutrients up actively from
16 the soil, that that active uptake also has been a
17 very beneficial way for human consumption of
18 phytochemistry of the shoots and fruits of the
19 plant.

20 And so that I continue to be concerned
21 about plants grown in a, basically in a nutrient
22 solution, whether it's a fish nutrient solution

1 loaded with fecal waste microbial communities or
2 a other organically approved nutrient source,
3 it's still bathing roots in nutrients in a way
4 that evidence would suggest alters the
5 phytochemistry of the plant.

6 I also had the opportunity this winter
7 to visit a aquaponic system. And I guess another
8 concern that I have is the extreme extent to
9 which these systems are dependent on energy
10 consumption. There had been a ice storm that
11 knocked out power to this particular facility
12 that I visited. And within nine hours all of the
13 plants and all of the fish had died due to the
14 loss of power that was powering the pumps, the
15 lights, the aeration systems, the nutrient
16 delivery systems, et cetera, et cetera.

17 And I found myself thinking, my
18 goodness, this is about as far from an organic
19 holistic system as I can imagine.

20 So I continue to be thinking of this
21 both from a how are the plants that are grown in
22 these system responding to them but, also, what

1 is the energy footprint and how holistic is the
2 system in fact? And so I am concerned about
3 those things as we look at something carrying the
4 organic seal.

5 I'm finished.

6 MR. THICKE: Thank you, Dave.

7 I have on my list Harriet next, then
8 Emily, and then Ashley. Go ahead, Harriet.

9 MS. BEHAR: Okay. So I understand
10 that this has already been approved by
11 certifiers. But this is a system of production
12 that was approved to carry the organic label
13 without standards for that production.

14 And there is a precedent for this in
15 aquaculture. We did have products that were
16 labeled as organic in aquaculture. We even had,
17 I know of at least one, fairly large and heavily
18 invested operation that used the USDA organic
19 seal on aquaculture products. And then the
20 National Organic Program said, Whoa, wait a
21 minute, this is a system of production that we do
22 not have any standards for. And they declared

1 that that could no longer occur as far as being
2 able to carry the organic, USDA organic label.

3 So I think that that really is where
4 we're coming down to here is a unique form of
5 production with its own system. It would be
6 almost like saying, well, we don't have any
7 standards for dairy. Let the certifiers figure
8 out what's, you know, what's organic dairy. I
9 mean, it's a completely separate and unique
10 system of production that doesn't have any
11 standards.

12 And as we talk, you know, Emily
13 brought up the animal welfare issue. And so, I
14 mean, these are all things that need to be looked
15 at in a holistic way with a clear standard. And
16 through that clear standard we protect the
17 organic label for all things that are labeled
18 organic. Because if one section -- I mean, we
19 have, we have this issue right now with personal
20 care products and things like that, that the
21 meaning of the organic label is somewhat demeaned
22 when there is not clear meaning, not clear

1 standards, and the consumers are then confused of
2 what is actually organic. And it does kind of
3 bleed over into other areas.

4 And I know that we are expecting at
5 some point an aquaculture standard. And I
6 believe that that would be the time to then
7 consider aquaponics as well. But, of course,
8 also with the manure issue because it's a human-
9 consumed product.

10 I'm done.

11 MR. THICKE: Thank you, Harriet.

12 Next we have Emily Oakley. Go ahead,
13 Emily.

14 MS. OAKLEY: I just wanted to address
15 Tom and Scott and I think maybe also Ashley's
16 point about whether or not the Crops Subcommittee
17 felt that we needed more information before being
18 able to bring this forward. And I think other
19 people have also weighed in on this. But I just
20 wanted to reiterate that probably what the case
21 is is that there are some members of the CS who
22 would currently feel comfortable supporting

1 aquaponics but there are others who would not.

2 Probably rather than question of
3 people wondering if there's more information that
4 could ever persuade them to accept aquaponics, I
5 think that it's more of a division within the
6 philosophical points of view within the CS. So
7 there's certainly I think those who might tend at
8 some point to want to allow it, and then those
9 who would never want to allow it.

10 So I just wanted to put that
11 clarification out.

12 And I'm done. Thanks.

13 MR. THICKE: Thank you, Emily.

14 Harriet, your hand is still up but
15 maybe you just didn't take it down.

16 Tom, did you want to say something?

17 MS. BEHAR: I just took it down.

18 CHAIRMAN CHAPMAN: Yes. Sue's had
19 some technical issues so I got a text from her
20 since she's not able to speak on the phone right
21 now unfortunately. We'll work through that
22 problem.

1 But just to convey something from Sue,
2 the aquatic systems that she's worked with have a
3 three-part septic-like filtering system that
4 removes solids, leaving only nutrients remaining.
5 Most large operations are designed as such.

6 So it's her opinion that manures from
7 aqua -- concerns around manures from aquaponic
8 systems are not founded. But just adding that
9 little bit into the conversation.

10 But basically from what I've heard so
11 far -- this is Tom speaking for Tom now -- it
12 doesn't sound like board-wise we have a consensus
13 on this, this issue. So is it the Crops
14 Subcommittee's intent to still bring this motion
15 forward?

16 MR. THICKE: Probably. I can't speak
17 for the whole Crops Subcommittee. But we don't
18 really know what the vote would be as yet. And I
19 think that we should go on record in my opinion
20 to see what the full board does think on this,
21 and on the container issue as well.

22 One little comment on the filtering of

1 the fish waste. Of course I think we all
2 recognize that if you filter the fish waste that
3 the microbes would be in solution. And so that
4 wouldn't really be a -- that wouldn't really
5 prevent any contamination to filter out the
6 waste.

7 So are there any other comments on
8 aquaculture or should we move on to the
9 containment system?

10 MS. MOSSO: Yes, I just wanted to put
11 a comment in there about the filtering. It would
12 be completely dependent on the size of the filter
13 as to whether or not microorganisms, bacteria or
14 otherwise, would be in the water.

15 MR. THICKE: So are you suggesting
16 that they would actually filter out on the micron
17 level the bacteria? Would that -- Are people
18 doing that?

19 MS. MOSSO: No, I'm not suggesting
20 anything other than you could create a system
21 which would eliminate bacteria or larger
22 organisms beyond solids.

1 MR. THICKE: Thank you.

2 Harriet has her hand up.

3 MS. BEHAR: And that just to me
4 solidifies the need for a standard before -- I
5 mean, if there is a filtration system then it
6 would be in the standard what would be the size
7 of the filter, which types of filters would there
8 be.

9 I mean, I've heard also of enzymes
10 being used to mitigate pathogens. So, there's a
11 lot to this system. And right now there are no
12 standards. And so there's lots of different ways
13 to do it and every one is viewed the same.

14 I'm done.

15 MR. THICKE: Thank you, Harriet.

16 Sue Baird, welcome to the call. I see
17 you're on now. Go ahead.

18 MS. BAIRD: Thank you. It's great to
19 be here.

20 I do agree that there should be
21 standards for filtering out bacteria. But I'm
22 wondering why we cannot apply the same standards

1 as is dictated by for the microbial presence in
2 dehydrated poultry or other compost systems.

3 MS. OAKLEY: I'm sorry. This is Emily
4 again.

5 And just really quickly, dehydrated
6 what? I didn't hear that last word.

7 MS. BAIRD: The dehydrated poultry or
8 livestock standards that has been stated under
9 the NOP guidance is compatible and can be applied
10 the same as a compost.

11 MS. OAKLEY: Okay. Thank you.

12 MR. THICKE: All right. Thank you,
13 Sue.

14 MR. SEITZ: Francis, I had raised my
15 hand. Dan.

16 MR. THICKE: Oh, Dan. For some reason
17 the order seems to be getting messed up here on
18 my screen. So if I get you out of order, tell
19 me.

20 Go ahead, Dan.

21 MR. SEITZ: Sure. There's just an
22 irony here that I just want to mention that in

1 the absence of standards you sometimes have
2 different certifying agents, agencies certifying
3 certain practices for which there are not yet
4 NOSB or NOP regulations or guidance. And then
5 once you have a certifier that recognizes a
6 practice, then you have vested interests that are
7 following that.

8 And every -- a number of people have
9 said, well, once you have these vested interests
10 is it fair to somehow put in a requirement
11 afterwards that may limit what they're able to do
12 or prohibit that process from happening?

13 But to me it's just kind of strange
14 situation that in a sense the certifiers are
15 creating what you might say NOSB and NOP policy
16 through actions that create vested interests
17 here. And I was under the impression, and I'm
18 obviously mistaken, that aquaponics had not yet
19 been certified. But I imagine that there perhaps
20 are not many yet that have been.

21 So I just want to offer the caution
22 that in the absence of requirement, as more

1 operations do get certified and you create more
2 vested interest, it becomes harder and harder to
3 actually come up with worthwhile standards in
4 line with the OFPA and the regulations. And do
5 we want a situation where, in essence, a
6 certification practice then is leading the way?

7 At least that's how I see it from a
8 kind of legal standpoint.

9 That's it.

10 CHAIRMAN CHAPMAN: Francis, this is
11 Tom.

12 MR. THICKE: Go ahead, Tom.

13 CHAIRMAN CHAPMAN: Is see that Miles
14 wants to --

15 MR. THICKE: Go ahead.

16 CHAIRMAN CHAPMAN: I see that Miles
17 wants to say something. Miles. Can you call on
18 him?

19 MR. THICKE: Okay, sure.

20 MR. MCEVOY: Hi. Yes, the discussion
21 is very, very interesting. In terms of
22 aquaponics it is a little bit challenging in

1 terms of how the regulations apply there. You
2 couldn't certify an aquaculture operation under
3 the USDA organic standards at this time or apply
4 the USDA organic seal. But there are organic
5 aquaculture products that are in the U.S. market.
6 And these are produced under foreign standards.

7 For instance, the EU does organic
8 salmon that's in the U.S. market. And as long as
9 they don't use the USDA organic seal we're not,
10 we're not taking any particular action against
11 that. But there are no U.S. standards for
12 organic aquaculture. So you could not do USDA
13 organic aquaponics in terms of the fish part of
14 the operation at the current time.

15 There were a couple other things that
16 were said. In terms of the EU arrangement, the
17 EU is in the process of updating their
18 regulations. They've been working on this for
19 many years. It is quite a challenging process.
20 And whether or not they're successful at changing
21 the regulations is yet to be seen. They've had
22 many proposals over the years. So counting on

1 conversations of what's going to happen I think
2 is premature.

3 And there are similar types of organic
4 operations that are not in soil in northern
5 European countries that are certified organic
6 under the EU standards. And the EU, U.S.-
7 European Union organic equivalency arrangement
8 has no restrictions in terms of hydroponics, so
9 there's no critical variances or differences
10 there.

11 And then, finally, one of the beauties
12 about the U.S. organic regulations is that it
13 provides a lot of flexibility in operations to
14 develop systems that are, can be compliant with
15 the regulations. And so certifiers and
16 operations have determined ways of certifying
17 organic beekeeping, honey bee production,
18 mushroom production where there aren't any
19 specific standards. And so that diversity of
20 standards or systems is, they're all in
21 compliance with the USDA organic regulations
22 because they, certifiers, ensure that that

1 happens, and we oversee those certifiers to
2 ensure that any operations that they certify are
3 compliant with the regulations.

4 So it does at times lead to some
5 differences in terms of systems that certifiers
6 approve. But all those operations are compliant
7 with the regulations. And the diversity is one
8 of the benefits of the way that the system is set
9 up.

10 So, thank for listening.

11 MR. THICKE: Thank you, Miles.

12 We have two people on deck, Steve Ela
13 and then Dan Seitz. Steve is first.

14 MR. ELA: Sure. I think, I guess, you
15 know, one of the issues I have and, you know, it
16 comes back to kind of the manure issue and
17 manure's supposed to be applied and tilled in,
18 which obviously we can't do in an aquaponics
19 system. But and I agree while we can create
20 filters or there are filters that would, you
21 know, filter out those potential pathogens,
22 conversely, those same filters are going to be

1 filtering out the "biological activity" of the
2 system.

3 You know, if we're removing bacteria,
4 pathogenic bacteria, we're also removing the good
5 bacteria. And I think one of our big debates
6 within the whole hydroponic issue is really what
7 is the biological activity of this system? And
8 so I guess I have real concerns if we're, you
9 know, if we're putting in place filters to remove
10 bad bacteria, then we no longer have a
11 biologically active system which, you know, goes
12 against, goes against the standards.

13 And I'm done.

14 MR. THICKE: Thank you, Steve.

15 Dan, you had your hand raised. I
16 think it went down though. Do you still want to
17 speak now?

18 MR. SEITZ: It went down. But I had
19 left it raised before so I don't have anything
20 further to say.

21 MR. THICKE: Okay. Okay, thank you.

22 CHAIRMAN CHAPMAN: This is Tom.

1 MR. THICKE: Go ahead, Tom.

2 CHAIRMAN CHAPMAN: So, Steve, if
3 there's a filter in place for an aquaponic
4 operation that removes harmful bacteria and then,
5 you know, heat-based composting of manure
6 operations where heat is the mechanism by which
7 harmful bacteria is killed, and then that's
8 allowed as an acceptable input, I guess what's
9 the difference there? Why is one practice deemed
10 acceptable and the other one not?

11 I mean, you're interacting, those
12 nutrients are then later interacting with biology
13 in the system at a later point, whether it's a
14 heat-composted manure or a --

15 MR. THICKE: I would jump in, Steve.

16 CHAIRMAN CHAPMAN: Yep. Go ahead.

17 MR. THICKE: I would jump in in that
18 I think it's a completely different system.
19 Under composting it's biologically driven and it
20 still feels like it's still unperfected. But
21 then it actually re-cultures and makes a very
22 robust culture of beneficial bacteria at the end

1 of the process. Whereas this is a mechanical
2 system of filtering out. And you could add back
3 in bacteria afterwards if you wanted, but it's
4 not really an ecologically-based system in my
5 opinion.

6 CHAIRMAN CHAPMAN: So do we have
7 research that shows that the nutrients that then
8 go into the plant area of the system are not
9 culturing bacteria?

10 MR. THICKE: In the aquaculture?

11 CHAIRMAN CHAPMAN: Correct.

12 MS. OAKLEY: You mean aquaponics?

13 CHAIRMAN CHAPMAN: Aquaponics, yes.

14 MR. THICKE: In the aquaponics. I'm
15 sorry, yes, yes, yes. Presumably there could be
16 some. Yes, there could be some. But my
17 understanding is that often in these things when
18 you recirculate them, when they recirculate the
19 water they basically kill the ozone, the microbes
20 because too many harmful bacteria can grow in it.
21 And then they re-inoculate with beneficial
22 organisms. I've heard of those systems where

1 pathogenic ones get out of control.

2 So it's really different from
3 composting in my mind.

4 MR. THICKE: Steve Ela, you had your
5 hand up again?

6 MR. ELA: Yes, this is Steve Ela.

7 Well, I was just going to respond as
8 well. I mean, this is Steve.

9 I think, yes, Tom, I agree with what
10 Francis said. I mean, I think, you know, yes, in
11 what you're asking gets back into the fundamental
12 question that we're going to go into on the
13 containers. And I know a number of the board
14 members and, you know, I believe OTA have
15 proposed that, you know, there have to be
16 (webinar interference) some bacterial action that
17 maybe restarts.

18 But I'd have a real question if we're
19 talking about a, you know, a system that is
20 diverse and resilient and, you know, really goes
21 with those organic standards in that case.

22 MR. THICKE: Thank you, Steve.

1 MR. ELA: Go ahead, Francis.

2 MR. THICKE: Harriet has her hand up.

3 MR. ELA: Oh, I'm sorry. Okay.

4 MR. THICKE: Harriet.

5 MS. BEHAR: All of this discussion
6 just reinforces that we need a standard. And I,
7 I appreciate Miles', you know, discussion of
8 mushrooms and beekeeping and such. But I would
9 also remind him that the National Organic
10 Standards Board has provided standards for those
11 types of systems of production because we wanted
12 to have that consistency between. And, of
13 course, I believe he knows how much I, I really
14 would love to see the apiculture standards
15 because there really is a huge difference between
16 the various certifiers and what they approve for
17 forage zones and inputs and the whole nine yards.

18 So, I think actually all this
19 discussion about aquaponics and whether or not
20 it's biological, and animal welfare, and manure,
21 and all those things bring up that it is a unique
22 system of production that would need standards.

1 And I'm for that discussion. But I
2 think that having an aquaponic standard would
3 come after having an aquaculture standard in
4 place.

5 I'm done.

6 MR. THICKE: Thank you. I don't see
7 any hands up.

8 Tom, did you speak up?

9 CHAIRMAN CHAPMAN: Yes, I did. But I
10 can stand off. Go with Ashley and then we'll be
11 okay with that.

12 MR. THICKE: Oh, okay. I see Ashley's
13 hand came up.

14 MS. SWAFFAR: Yes.

15 MR. THICKE: Go ahead, yes.

16 MS. SWAFFAR: Sorry. I'm taking notes
17 here.

18 So, Harriet, I think that you made
19 some really good points about the standard. And,
20 you know, that just brings that around to the
21 point that all of us made at the beginning of the
22 call as, you know, I'm not sure why the Crops

1 Committee did bring this forward because it
2 sounds like there's quite a bit of support for
3 aquaponics on this current NOSB board. So I'm
4 just a little maybe wondering why you would bring
5 it forward if you know that the motion might
6 possibly fail to prohibit.

7 And maybe going forward have you all
8 thought about next steps on aquaponics, after
9 thoughts?

10 MR. THICKE: Okay. Well, there are
11 several people's hands up. And I have Tom is
12 next and then Emily and then Sue.

13 Go ahead, Tom.

14 CHAIRMAN CHAPMAN: So I'm somewhat
15 echoing what Ashley just said. And I agree with
16 Harriet that, yes, standards are needed. And I
17 really was hoping that we would be debating those
18 on this call or talking about what sets of
19 standards would we be putting in place for an
20 operation like an aquaponic operation.

21 But I'm not really there for a direct
22 prohibition of it without discussing standards.

1 Given the number of operations already served by
2 it and statements from the program that these
3 operations can be compliant with the program as
4 it's written today.

5 Whether or not there's NOSB
6 recommendations for other types of production,
7 those are just recommendations at this point and
8 are not standards. They're not standards until
9 they go through the full rulemaking process and
10 public comment through the Federal Register. And
11 that hasn't occurred for mushrooms or other types
12 of operations.

13 So, I do hope at some point we can
14 move this conversation forward. I'm curious to
15 know if the Crops Subcommittee would move on to
16 looking at standards for aquaponic operations if
17 this motion fails at the fall meeting, because it
18 seems at that point that there's no consensus to
19 prohibit these practices. These practices are
20 already allowed under the current rules. And
21 that it would be beneficial to provide more, more
22 structure to those rules through individualized

1 standards.

2 So that's a question for you guys.

3 The next piece, though, just a
4 recommendation from my standpoint is, you know,
5 prohibiting a practice already in place is
6 economically costly. And that piece of review
7 that occurs in the later steps beyond the NOP
8 review. Just a fact of life when it comes to
9 rulemaking and that's a piece of the rulemaking
10 review. And so now as we look at these
11 justifications for disallowing these types of
12 production, you know, the Crops Subcommittee
13 should come well researched and cited with
14 research.

15 If food safety is a concern, you know,
16 I would like to see a lot of that research in
17 citations in the recommendations. And, you know,
18 if there are concerns around how these differ
19 from in-soil production practices, then those
20 should also be well, well cited and outlined in
21 the argument to deploy these practices.

22 That's it for me.

1 MR. THICKE: I would like to jump in
2 real quick if I could, in that I think, for
3 example, with animal welfare standards the
4 economic analysis show there would be a huge
5 economic problem for these huge chicken
6 operations that do not have access to outdoors.
7 But the NOSB recommended anyway, took it forward
8 anyway, now it's come up at USDA, but there are
9 consequences sometimes to those kind of things.

10 And basically why the Crops Committee
11 that wrote the document put that -- opposed
12 aquaponics just simply is that it is hydroponics.

13 Let me look at my list here. Who is
14 -- Emily is next.

15 MS. OAKLEY: Yes. Thank you, Francis.

16 I was actually going to reply to Tom
17 and Ashley about I would not be in favor of
18 trying to propose recommendations to support
19 aquaponics if this did not pass, the prohibition
20 didn't pass in the fall, because in my view with
21 hydroponics I don't think the inclusion of fish
22 in a tank makes the system that much more

1 innovative or more in keeping with the organic
2 standards.

3 I think as I said before, on Crops
4 Subcommittee calls the organic principles are
5 based on the understanding that plant nutrients
6 are delivered through the soil. That's why we
7 have so many different standards around cover
8 cropping, crop rotations, manure applications,
9 root conservation, tillage, et cetera. The many
10 things that farmers engage in, many of which are
11 spelled out in the regulations based on the
12 premise that plants grow in the soil and derive
13 their nutrients from the soil.

14 But for me the fact that fish are
15 added into the system, while it might be an
16 interesting option for other people, does not
17 make it an organic system and does not meet the
18 standard.

19 So I, I also wanted to point out that
20 in the 2016 April meeting in D.C. there were some
21 standards -- or some statistics, sorry, from the
22 NOP about the number of certified operations

1 under these different ponc systems and container
2 systems. And as of the 2016 data that Miles gave
3 us, there were only 22 certified aquaponic
4 operations, which is a really incredibly small
5 number of the overall operations that, you know,
6 are certified organic under the USDA.

7 And I also just wanted to point out
8 the time which is that we have about 40 minutes
9 left in this call. So we might want to start
10 moving towards the container discussion so that
11 we have plenty of time for that as well.

12 Thanks. I'm done.

13 MR. THICKE: Thank you, Emily. Good
14 point.

15 We've got two up. And then maybe we
16 should move to containers after that.

17 Go ahead, Sue.

18 MS. BAIRD: Yes.

19 Thanks, Emily, for that time reminder.
20 So I'll keep this short.

21 At least for aquaponics I do feel like
22 there is an inherent difference in the delivery

1 system. I don't feel like we are addressing, or
2 at least in my mind we're not addressing the fish
3 or the fish itself, we are addressing plants that
4 are produced by the fish.

5 MR. THICKE: Thank you, Sue.

6 So let's move on to the container
7 production systems. And I just want a little,
8 give a little background here before I read the
9 proposed motion. And that is that the Crops
10 Subcommittee is looking for a compromise in the
11 middle ground between requiring all organic crop
12 production to be in the soil, connected to the
13 Earth's surface, as is the standard in most
14 European countries today.

15 And a number of the Crops Committee
16 really would prefer that.

17 On the other hand, we have people on
18 the Crops Committee and on the board in general
19 that would allow 100 percent organic production
20 to be certified organic, 100 percent hydroponic,
21 yes.

22 So we've come up with a compromise

1 that we think is in the middle. And I think we
2 can talk about where these pieces came from, but
3 there's three parts to the compromise. And let's
4 see, I'm going to read the motion here.

5 The proposed motion is that for
6 container production to be certified organic, a
7 limit of 20 percent of the plant's nitrogen
8 requirement can be supplied by liquid feeding. A
9 limit of 50 percent of the plant's nitrogen
10 requirement can be added to the container after
11 the crop has been planted. And the container
12 substrate must be at least 50 percent soil and/or
13 compost by volume.

14 And for perennials, the soluble
15 nitrogen feeding limit is calculated on an annual
16 basis. And transplants, ornamentals, herbs, and
17 aquatic plants are exempted from these
18 requirements.

19 It's kind of long. And we can look at
20 all the pieces. But maybe we should, I should
21 just open it up first of all for other comments
22 from other people. If anybody wants to raise

1 their hand. Or else I can go on.

2 Steve had his hand up. Go ahead,
3 Steve.

4 MR. ELA: Yes, so this is Steve.

5 So I think, you know, what I'm coming
6 down to on this, and I know it's, I know there
7 are, you know, things for us, you know, as you
8 said we have both interests reflected on the
9 board. And that's great, but --

10 MS. ARSENAULT: Hey, Steve, I think we
11 just lost you. If you could adjust your headset
12 or phone. Yes.

13 MR. ELA: Okay. Is that any better?

14 MS. ARSENAULT: Better. Thank you.

15 MR. ELA: Okay, thank you.

16 But it comes down to pushing the
17 envelope a little bit. And I think, you know, we
18 could have straight hydroponic systems, we could
19 have straight soil systems. Where I really, you
20 know, like I hear people saying they can't have
21 any more than, you know, 10 percent soil or
22 compost in the container, yet then I hear other

1 people testify that theirs, you know, have much
2 higher level, 50 percent, 60 percent, 70 percent
3 soils, and they're doing it very successfully.

4 So, I see the NOSB in general part of
5 our job is to push the envelope of what is good
6 organics. And I think we, I think we need to
7 push this envelope. And so I support this
8 compromise. It's not what either side wants.
9 But I really feel like we, you know, we push the
10 envelope with antibiotics in tree fruits for fire
11 blight and, you know, that has cost me personally
12 by banning that.

13 We push the envelope with animal
14 welfare. We push the envelope with other things.
15 And I really feel strongly that we need to, even
16 though this is a compromise I think it's pushing
17 the envelope from straight hydroponics. And I
18 think, you know, the straight soil people are
19 giving up quite a bit as well.

20 I'm done.

21 MR. THICKE: Thank you, Steve.

22 I don't see any other hands up. I

1 would like to just cover a few of the points, the
2 precedent for them. For example, the 20 percent
3 maximum liquid feed of nitrogen, Chilean nitrate
4 is now on 602 which allows no more than 20
5 percent of the crop's total nitrogen requirement
6 to come from sodium nitrate. And it's a very
7 soluble material, of course, this sodium nitrate.

8 And what's true actually is that some
9 of the materials being used in hydroponic
10 production are as soluble. For example,
11 hydrolyzed soybean meal is advertised as
12 completely 100 percent soluble. And the nitrogen
13 level is similar to sodium nitrate at about 16
14 percent nitrogen. And so we have a precedent of
15 allowing only 20 percent of the nitrogen needs to
16 come from this highly soluble system, organic
17 system.

18 So that was what the Crops
19 Subcommittee used for the basis for that
20 recommendation.

21 Unless my screen is not working,
22 nobody's raising their hand. I thought we'd have

1 all the hands up for this one.

2 CHAIRMAN CHAPMAN: This is Tom,
3 Francis. I had a question specifically about
4 that.

5 Chilean nitrate, the precedent, I
6 disagree with your precedent I guess. The
7 precedent that was for the NOP to review, for the
8 NOP to review the substance and propose they get
9 listed as a prohibited natural substance and
10 limited to just 20 percent.

11 That's not what you're proposing here.
12 You're proposing limiting a practice altogether
13 as opposed to if it was analogous to that
14 situation it would be proper for the Crops
15 Subcommittee to petition, or an individual of the
16 public to petition, or the Crops Subcommittee to
17 propose that soluble soybean extract, or whatever
18 it's called, hydrolyzed soybeans, get added to
19 that same list as a prohibited natural and
20 limited in how much it can be used.

21 But the precedence isn't around liquid
22 feeding of plants, it's around 1600 substance.

1 And so the precedence would then be to follow the
2 previous boards and add it as a prohibited
3 substance, not as not prohibit the practice
4 altogether.

5 That's my thought.

6 MR. THICKE: I have to disagree, Tom,
7 because soluble nitrogen fertilizers, the
8 synthetics, are not allowed in general. And
9 Chilean nitrate is unusual in that it is soluble.
10 And so that is why it is not -- that's one
11 reason. And also it's a high solvent. But that
12 is a reason for not allowing it.

13 And it's a very similar kind of a
14 situation where you have this very soluble kind
15 of a material going into the plant, into the
16 hydroponic system. And we use nitrogen because
17 many of the regulations, the European regulations
18 and such, will limit the amount of liquid feeding
19 in general. And that is very complicated,
20 because some nutrients like boron and
21 micronutrients are needed in higher amounts.

22 So, and nitrogen is kind of an

1 indicator nutrient in the soil in that if you
2 have nitrogen working in your soil cycling and
3 being produced out of the organic matter, in
4 organic material, then you probably have a very
5 robust kind of a microbiology going on in your
6 soil. And we thought also nitrogen would be
7 easier, one nutrient would be easier for
8 certification and enforcement.

9 I get that the solubility factor that
10 it doesn't mimic a natural ecology of an organic
11 system that is important that we were looking at.

12 CHAIRMAN CHAPMAN: So, Francis, I hear
13 you. But the mechanism used wasn't to put a
14 prohibition in the standards for sodium nitrate,
15 it was to put it in the material addressed in
16 602.

17 So, I guess I question why the Crops
18 Subcommittee wouldn't consider putting hydrolyzed
19 soybean meal in 602 instead of prohibiting the
20 practice of liquid feeding.

21 MR. THICKE: I come back to the
22 principle, Chilean nitrate is the only material

1 really that has been used. Well, now, now I
2 guess the hydrolyzed soybean meal can be used in
3 the soil.

4 And that's one reason why we also
5 looked at having a maximum amount inputs that
6 could be done, put into the container after the
7 crops was planted because one could still put
8 highly soluble material on the container and then
9 water it into the system. We know that when
10 standards are set that many people will push it
11 right to the limit and find the loophole that
12 will allow them to do something that may not even
13 be intended by the rule.

14 So this is just to shore it up and to
15 make it as a robust, ecologically-based soil
16 system.

17 We have two more hands up. Joelle
18 first and then Dave Mortensen.

19 MS. MOSSO: Yes. Thanks.

20 I just wanted to kind of go, you know,
21 and have my voice heard here. The Crops
22 Subcommittee is proposing this but we're also

1 going to be putting a minority view on this
2 document that comes forth. So as a kind of
3 caution, word of compromise, although I do
4 realize and recognize that the soil group has put
5 forth a lot of compromise from what they would
6 necessarily go towards people who may be more
7 inclusive of hydroponic systems.

8 I did want to make sure that, you
9 know, the public heard as well as the larger NOSB
10 that a minority view does exist. I think it's
11 reflective of the diversity that we see within
12 the all stakeholders of the organic system. And
13 I think we should be speaking about that in
14 addition to just what we're bringing forth,
15 especially in regards to that we're bringing
16 forth the Crops Subcommittee neighboring forces
17 proposal, potential proposal. And there's a good
18 likelihood that in the larger context of the NOSB
19 it will not pass and status quo will be
20 maintained.

21 So I do think rationales are great to
22 be heard. I also think that we need to be

1 cognizant of that as well.

2 MR. THICKE: Thank you, Joelle.

3 Dave Mortensen.

4 MR. MORTENSEN: Yes. I, you know,
5 this issue of how much of the liquid fertility
6 would be delivered, you know, we've been having
7 probably, well certainly since the Denver meeting
8 and way before that. For those that are not new
9 on the board like I am, this has been discussed
10 in great detail.

11 One of the things that was pointed
12 out, I believe at the Denver meeting, and
13 certainly has been on a number of the phone calls
14 was, and I don't know that it's helpful to say
15 I'm pro this or pro that group or whatever, but
16 the point was made that we shouldn't be bringing
17 forth regulations on the liquid feeding side that
18 are not any more restrictive than are the
19 regulations on soil-based systems.

20 I think that was the logic that led us
21 collectively to be discussing a compromise that
22 limits the liquid feeding in a way that's

1 consistent with limitations on feeding of crops
2 in the soil and not putting in there, you know,
3 handcuffing liquid-based systems. So that at
4 least in terms of the threshold, that's where we
5 were coming from with that. At least that's how
6 we settled in on that as a group.

7 The -- What was the second thing I was
8 just thinking in response to Joelle comments? I,
9 it's left me for the moment, so I'll come back.

10 But at least on the first part, that,
11 that issue of this threshold was it was a
12 compromise that was deliberately set and debated
13 based on the comments by some that we shouldn't
14 be putting undue restrictions on the liquid-based
15 systems. And that's what their point of view
16 reflects.

17 I guess, actually, the second point
18 was that actually on one of our recent calls, I
19 think it was two subcommittee calls ago, the
20 point was made that don't, don't have a proposal
21 come forward that doesn't have multiple layers of
22 motions in the proposal. And that was one of the

1 reasons why this proposal has multiple motions
2 and why it is that they're ordered in a way that
3 we're looking for identifying where we have
4 common ground and consensus and get to more
5 issues where we have less agreement on those.

6 So, again, a deliberate attempt was
7 made to come forward with a multi-motion
8 proposal. And that's why it looks the way it
9 does.

10 CHAIRMAN CHAPMAN: I have a question
11 for Dave. This is Tom.

12 MR. THICKE: Go ahead, Tom.

13 CHAIRMAN CHAPMAN: From what I heard
14 from what Francis read, and maybe I'm wrong, but
15 it was about container, the 20 percent nitrogen
16 input would be limited to container production,
17 so it would not be applied to field crops. And
18 so it's not what you're saying that it's held
19 equally across the board.

20 So, did I mishear, Francis, the way
21 you read the proposed motion?

22 MR. THICKE: There was some, there was

1 a motion that is written. It's not written for
2 in-ground. Although there's been discussion
3 about that, that some have said we could have the
4 same standard for in-ground that we have for
5 container production.

6 And it's very true that many soils are
7 getting a lot of liquid feed and would not be
8 able to meet this standard. And so I think
9 that's something we may want to look at in the
10 future is should a standard like this be applied
11 for in-ground growing? And, of course, that
12 would allow you would want to give time for those
13 growers to get their soils in shape and working
14 so that they could meet that standard.

15 However, it's true with containers
16 that you have more flexibility because you're
17 creating your own substrate, unlike if you have a
18 40-acre field out there that's very sandy and has
19 very little organic matter. To change that field
20 is very difficult and takes time. But a
21 container, you're creating your substrate on the
22 spot and so you could more easily meet a standard

1 than the field grower.

2 Next we have Harriet and then Emily.

3 MS. BEHAR: Okay. So, this container
4 standard was to allow some production but
5 recognize that biological activity in the soil is
6 where we prefer to see most of the nutrient
7 transfer to plants occur. And I, I'm hoping that
8 the minority opinion will have something to us in
9 a timely manner so we would have chance to look
10 at it in time to have some discussion before our
11 proposals are due to put up on the docket.

12 So that's just asking the minority to,
13 you know, work with us and try to get something
14 to us soon.

15 This is also a lot kind of based again
16 on the European Union. I guess I'm just going to
17 reiterate again that we're not just pulling this
18 out of a hat or being arbitrary in our dislike of
19 hydroponic operations carrying the organic seal.
20 This is kind of something that is seen around the
21 world as an issue. And we, we are trying to
22 recognize that there are operations currently

1 here in the U.S. that are doing hydroponic and
2 are certified as organic.

3 But there's a question of how that all
4 happened and why that all happened. So, I
5 understand there may be some economic impact.

6 The other thing that I have been doing
7 is talking with compost makers. And my
8 understanding is that the weight or the bulk
9 density of the compost that might be required in
10 a 50 percent soil or compost based substrate
11 would be too heavy to make it practical.

12 And I specifically was talking with
13 Purple Cow Organics, and then with some other
14 people. I was at a field day where people were
15 talking about compost and making compost. And
16 then this is, and also John Biernbaum from the
17 University of -- from Michigan State who was on
18 the Task Force, the Hydroponics Task Force, have
19 all told me that producing nutritionally balanced
20 and acceptable compost can be done so they have
21 less bulk density and less weight. This is not
22 rocket science. It can be done right now.

1 And so I think at least that issue I
2 hope we can not continue to talk about that
3 because there is compost that can be used.

4 I'm done.

5 MR. THICKE: Thank you, Harriet.

6 And I wanted to quickly interject on
7 this topic that about the percent, 50 percent and
8 20 percent, that the USDA Hydroponics Task Force,
9 the subcommittee that was following the 2010
10 recommendation, made that recommendation.

11 The first recommendation is that all
12 organic crops should be grown in the soil. And
13 then they said if that is not going to be the
14 case then under containers that there should be a
15 limit, a limitation of no more than 50 percent of
16 the required fertility being added after
17 planting, and no more than 20 percent to be added
18 as a liquid fertilizer after planting.

19 So those recommendations come directly
20 also from the USDA Hydroponics Task Force.

21 Emily, you were next. And then we
22 have Ashley and Scott and Sue.

1 MS. OAKLEY: Thank you. I just wanted
2 to make a clarification to something you had
3 mentioned earlier, Francis, that I think the word
4 you said that there might be many soil systems
5 that are applying a large amount of liquid
6 fertility.

7 And I think I obviously can't speak as
8 an expert to this, but of the many, many family-
9 scale organic farms that I visited, I would say
10 that I have not visited any in which liquid
11 fertility added either through fertigation or
12 feeding after the crop has been planted forms a
13 large percentage of the crop's fertility needs.

14 Maybe in a desert environment or in
15 some sandy or some suboptimal conditions people
16 are applying large amounts of liquid fertility in
17 the soil. But I think the whole notion of the
18 organic regulations and principles are that we
19 work to build our soil over time.

20 As a farmer, the two things that I
21 tell people who come to my farm for tours or who
22 see me at the farmers' market and have question

1 is that our two biggest challenges organically
2 are weed control and building up soil fertility.
3 Those are things that take the longest amount of
4 time and the things that we have the long view
5 on.

6 So, I do think that there are a
7 majority of organic farmers going in the soil who
8 are working on building soil fertility over time
9 and not relying on outside inputs in liquid form
10 for their crops' needs.

11 But I also just wanted to say that I
12 don't know if people remember at the spring
13 meeting in Denver one of the blueberry container
14 growers who spoke, I believe from Chile, I asked
15 him a question about his ability to incorporate a
16 50 percent soil or compost into his containers.
17 And he said that, yes, he thought that he would
18 be able to do that.

19 And I know subsequent people testified
20 that that might not be possible for them. But I,
21 I agree with this notion that Steve brought up
22 that we want to push people to be adhering to the

1 standards. And the principle of organics, as
2 I've said many times before, is based on soil.

3 So I hope that if we have an agreement
4 that we can agree on with the 50 percent
5 soil/compost in the container, that even some of
6 these liquid inputs that people are concerned
7 about needing in large quantities would be
8 diminished because the plant would be getting a
9 good percentage of its needs from the soil or
10 compost within the container.

11 And that's it. Thanks.

12 MR. MCEVOY: Francis, Tom, point of
13 clarification.

14 MR. THICKE: Yes.

15 MR. MCEVOY: On the Task Force, the
16 Hydroponics Task Force they didn't have any
17 recommendations, just a number of different ideas
18 that were within the two different subcommittees
19 of that Task Force. And the one subcommittee
20 that was looking at kind of the pro soil
21 component, they did have that idea. But there
22 were many other ideas that were in that report.

1 But there were no recommendations from the Task
2 Force.

3 MR. THICKE: Okay. Yes, Miles,
4 perhaps that was right, it wasn't a formal
5 recommendation. But it was stated as I quoted
6 it.

7 MR. McEVOY: Yes, it was an idea that
8 was in one part of the report. And there are
9 many other ideas in there.

10 MR. THICKE: Okay. Next I had Scott.

11 MR. RICE: Okay.

12 MR. BRADMAN: After Scott, this is Asa
13 again. I can't raise my hand on the computer.

14 MR. THICKE: Okay, that's good.

15 MR. RICE: Yes, this is Scott.

16 I, I just wanted to touch back on the
17 -- to clarify that this would be speaking
18 specifically the limitation of liquid feeding is
19 specific to container, or is it for across the
20 board for all producers? I think I'm hesitant to
21 have, you know, two different standards on that.
22 And if we're going to be limiting that feeding,

1 then there's a portion of our community who grow
2 in the soil who have not been necessarily paying
3 as close attention to this as maybe the
4 hydroponic growers.

5 And just to keep that in mind as we
6 set limitations.

7 And then, secondly, also a concern
8 I've expressed before is that we, we create a
9 threshold in terms of that 50 percent soil or
10 compost. But perhaps that's not necessarily
11 serving the function or the purpose in these
12 particular systems but just maybe a check box.
13 Just keep that in mind as we bring this up.

14 MR. THICKE: Okay, thank you, Scott.

15 Asa.

16 MR. BRADMAN: This is Asa.

17 I think on this proposal I kind of
18 fall a little bit closer to where Joelle is on
19 the requirements here. I mean, I would like to
20 see more flexibility in it.

21 I mean, I've said before I'm not
22 opposed to hydroponics but I'd like to see it

1 done in a way that's, you know, consistent with
2 good ecologic and, you know, principles and,
3 again, minimizing carbon footprints, minimizing
4 use of synthetic pesticides, that sort of thing.
5 And I kind of transfer that to the container
6 arena as well.

7 And, again, a limitation of 20 percent
8 on external feeding, I'm not sure if that would
9 really apply to perennials. And, again, if the
10 materials are really -- if we all agree that
11 they're certified organic, I don't think the
12 limitation should be there in the way that
13 they're listed here.

14 Again, I know there's other issues
15 with container production and concerns about
16 erosion. And I think there are good points
17 there. And I'd like to see more discussion and
18 evaluation of that.

19 But I guess I want to I guess see a
20 little bit more flexibility here.

21 MR. THICKE: Okay. Thank you, Asa.

22 Next we have Sue Baird. And then --

1 MS. BAIRD: Yes. Hi.

2 MR. THICKE: Go ahead.

3 MS. BAIRD: Can you hear me?

4 MR. THICKE: Yes.

5 MS. BAIRD: Am I on? Okay.

6 I wanted to address first of all Sue's
7 contention that we are here to push the limit.

8 And I'm not sure that I agree with that totally.

9 I think we're here to enforce regulations and to
10 make sure that our, our proposals adhere to the
11 regulations.

12 She specifically cited the use of the
13 streptomycin antibiotics in production, and that
14 had been clearly from the beginning stated there
15 would be no antibiotics in organic production.
16 So I'm not sure that this -- that point really
17 applies here.

18 The second point I wanted to point
19 out, this goes back, and I may be wrong, but I
20 think historically that the limitation on Chilean
21 nitrate is not so much on the use of the liquid
22 nitrogen flowing and being added into the system,

1 but I should have looked this up but I really
2 think that historically it was a result of the
3 concern for that batch that only lives in the
4 Atacama Desert. And they were addressing the
5 environmental issue more than they were the use
6 of the nitrogen being added to the soil.

7 Again, that's just in the back of my
8 mind. I did not research that, and I apologize
9 for that.

10 Thirdly, Harriet states that she had
11 John Biernbaum. I would really like to see some
12 of his research. Because when she quoted him,
13 she said that (unintelligible) intended for
14 containers. And she also quoted that --

15 MS. ARSENAULT: Sue, this is Michelle.
16 We're losing you a bit. If you could get closer
17 to your phone. Thanks.

18 MS. BAIRD: Okay. Can you hear me
19 better now?

20 MS. ARSENAULT: Much better. Thank
21 you.

22 MS. BAIRD: I'm sorry.

1 The quotes that she quoted when she
2 sent the email said that they were working on a
3 compost that would be lighter and could be doable
4 for container growing. Also stated that large
5 media companies are working on composts that
6 would weigh less to make it be able to work, and
7 she said specifically for legal marijuana growing
8 industry.

9 I would like to see some real research
10 that says that these lighter composts are doable
11 for containers before I would feel comfortable in
12 dictating a 50 percent soil or compost in the
13 container growing.

14 That's it.

15 MR. THICKE: Thank you, Sue.

16 I just suggested that you look, I sent
17 a couple of files from John Biernbaum that went
18 into quite a bit of detail on that. You might
19 find that in your inbox.

20 MS. BAIRD: Oh, thank you.

21 MR. THICKE: Next was Ashley.

22 MS. SWAFFAR: Hey, guys. Sorry.

1 I just wanted to go over some things
2 that Harriet had said that feels like a minority
3 opinion seeing that we've about got that
4 finalized we think. Maybe by the end of the week
5 we could get you kind of what, what we're
6 thinking on that.

7 And then I just want to say, you know,
8 I can't support limiting that 20 percent nutrient
9 and then requiring 50 percent soil or compost.
10 There's a lot of container producers that can't
11 get anywhere near that. And, you know, I really
12 support the systems that they have and feel that
13 they are inclusive of our organic standards.

14 So I can't support the system -- or,
15 sorry, I can't support this, your motion.

16 MR. THICKE: Thank you, Ashley.

17 Lisa is up next, and then Harriet, and
18 then Emily.

19 MS. DE LIMA: I'm on the same page as
20 where Asa was. Looking at the different
21 requirements I'm not ready to -- I mean I'm open
22 to hydroponics and so I don't think I could get

1 behind this.

2 But I know we don't have time on this
3 call since we've got 10 minutes left. But I
4 think there's some other areas that we haven't
5 really gotten a chance to talk about where we
6 might find more commonality like just, example,
7 artificial lighting, and then dealing with
8 containers and, you know, what the requirements
9 would be around recycling those containers and
10 those kind of topics.

11 I know we're getting down to the wire
12 having to get things into the program if we want
13 to do something, if we want to do something this
14 fall. But I would like to see, I'm just
15 wondering if you guys have discussed any of that
16 on the crops calls?

17 MR. THICKE: We have, Lisa. And we
18 have some, some suggested proposals in the works
19 that we could bring forward on those issues.

20 MS. DE LIMA: Okay. Thank you.

21 MR. THICKE: Okay. Thank you, Lisa.

22 Harriet was up next, and then Emily.

1 MS. BEHAR: Yes. And so thank you,
2 Francis, for bringing up the information from
3 John Biernbaum. And I was -- but since that has
4 come out I have talked directly with compost
5 makers who can produce compost in, you know,
6 eight weeks, ten weeks that would -- at least
7 that's what they tell me.

8 And I could, I have the person's card
9 who said that to me. And I can ask him to send
10 us more information on that. But I believe it's
11 not a difficult technology to do.

12 And then in answer to Joelle, yes, the
13 Crops Committee has a discussion document that
14 addresses artificial light, recycling of the pots
15 and the vegetative matter and the substrate, as
16 well as -- what's the third? I have a third
17 thing in there. Somebody help me.

18 Francis, what else did I have in my
19 proposal, my discussion document? Sorry. It's a
20 long call.

21 MR. THICKE: Sorry, I was distracted.
22 Oh, you were also talking about

1 mulching systems; correct?

2 MS. BEHAR: That's right. The use of
3 petroleum-based mulches that don't get removed at
4 the end of one season. Many of these container
5 systems lay down the woven petroleum-based
6 landscape clothes and leave those down for many
7 years and completely cover many acres. So I've
8 tried to address that situation as well.

9 I'm done.

10 MR. THICKE: Okay. Thank you,
11 Harriet.

12 Emily.

13 CHAIRMAN CHAPMAN: Francis, this is
14 Tom. May I be after Emily?

15 MR. THICKE: Sure.

16 MS. OAKLEY: Pardon? Did somebody say
17 something?

18 MR. THICKE: Emily, you're next, yes.

19 MS. OAKLEY: Sorry. The call, I got
20 dropped out of the call but I'm back on. So,
21 sorry about that.

22 Is it my turn?

1 MR. THICKE: Yes, it is your turn.

2 MS. OAKLEY: Sorry about that.

3 I just wanted to not put anybody on
4 the spot, but if there's anybody that hasn't
5 spoken and wants to, there are a couple of people
6 in particular who we haven't heard from on the
7 container proposal in particular, or potential
8 proposal in particular. And I was just wanting
9 to give them the chance to weigh in if they
10 wanted to.

11 A-dae and Ashley, I don't want to put
12 you on the spot, so if you don't want to weigh
13 in, please don't. But I also just wanted to be
14 sure that you had a chance to share your thoughts
15 if you wanted to.

16 And I'm done.

17 MR. THICKE: Okay. No more hands are
18 up.

19 I just wanted to, I usually get a real
20 quick -- Oh, Tom, I'm sorry. Yes, go ahead.

21 CHAIRMAN CHAPMAN: Yes. Yes, thanks.

22 So I mean mine somewhat dovetails with

1 what Emily was asking for. But I did hear Ashley
2 and I thought she, she opposed it from the
3 comments I heard earlier.

4 But it sounded like for me, again, we
5 don't -- there's not enough votes here to pass
6 this concept as it's written, from what I heard
7 from the discussions. So my question back to the
8 Crops Subcommittee is what's the plan?

9 Are you going to bring this forward as
10 is? Or will you guys, you know, take it back and
11 consider something that could get the consensus
12 of the board?

13 And if it's not, then what's the plan,
14 you know, following if this does not pass at the
15 board level?

16 MR. THICKE: Well, the Crops Committee
17 will certainly talk about what happened today.
18 There seems to be a difficulty that there doesn't
19 seem to be a middle ground that's acceptable. It
20 seems that on the hydroponics side that there
21 doesn't seem to be much give. And the soils
22 advocates have gone from growing in the ground to

1 reaching a compromise position.

2 So, it looks like we have to
3 compromise and support hydroponics. And some of
4 us at this point can't do that. But we'll look
5 back at what has been talked about and see what
6 we can come up with.

7 I just wanted to clarify something.
8 Miles said that the Hydroponics Task Force did
9 not make a recommendation.

10 I guess that's correct. I -- that's
11 probably a legal thing. Because I just came back
12 and, quote, they said "we suggest a limitation of
13 no more than 50 percent of the required fertility
14 being added after planting, and no more than 20
15 percent to be added as a liquid fertilizer after
16 planting." And they gave a lot of reasons for
17 it.

18 So, they didn't make an official
19 recommendation but they certainly strongly
20 suggested it.

21 CHAIRMAN CHAPMAN: Francis, that was
22 one subcommittee of the Task Force; correct? Not

1 the full Task Force?

2 MR. THICKE: That is right. I thought
3 I mentioned, that was the one side the soils side
4 of the Task Force; exactly.

5 And that's where we're back to this
6 thing again where we really don't seem to have a
7 middle ground. We seem to have two sides here.
8 And, frankly, as I said, I think the soils group
9 is compromising to a great degree. But I don't
10 see any sense of compromising on the part of the
11 hydroponics advocates.

12 CHAIRMAN CHAPMAN: Yes. So, Francis,
13 real quick.

14 MR. THICKE: We have to keep it --
15 Yes?

16 CHAIRMAN CHAPMAN: Yes, real quick, we
17 have four minutes. We can take a few comments
18 but then you'll need to wrap it up from there
19 because we do need to stop at 3:00 o'clock sharp.

20 MR. THICKE: Sounds good, Tom. Thank
21 you.

22 Steve, go ahead.

1 MR. ELA: Sure. And I think, Tom, I
2 was just going to echo what Francis said. I
3 mean, I wish, I wish we could see a compromise
4 that would be passable. And it seems like there
5 really are two sides on this, and some people in
6 the middle, but it's a tough one.

7 I mean, I, I don't think any of us
8 have seen a compromise that, you know, that a 10-
9 person majority of the board supports that. And
10 so it's real enigma. And I'm not sure how we --
11 I'm still very uncomfortable that we don't, that
12 we continue with the status quo because I think
13 we have certifiers that don't certify operations,
14 and certifiers that do. And that was not the
15 point of the NOP.

16 But I think I'm, you know, I'd sure
17 like to see what the compromise is that, you
18 know, ten people can support because I just, like
19 Francis said, it's just not -- it hasn't popped
20 up yet. If it had, I think we would, you know, a
21 lot of us would, would go for it because we need
22 to crack this nut somehow.

1 Carry on.

2 MR. THICKE: Thank you, Steve. Thank
3 you.

4 And just to summarize, the Crops
5 Subcommittee will certainly look at everything
6 we've just talked about today and see, and see
7 what we can do to try to find some ground that we
8 can all agree on.

9 I'll turn it over to you, Tom. You
10 can wrap it up.

11 CHAIRMAN CHAPMAN: Yes. Thank you,
12 Francis. I appreciate your time, the time of the
13 Crops Subcommittee, and all the members here, as
14 well as the public listening in.

15 Clearly this is not an easy subject to
16 resolve. This has been on the board's agenda
17 since 1995 in some form or another since the
18 board's been meeting. So it's not surprising
19 that it's difficult to find compromise. And I do
20 appreciate the Crops Subcommittee's hard work in
21 attempting to find something to bring forward.

22 With that, we'll conclude this

1 meeting. Again, thanks everyone for
2 participating. And again, this was just a forum
3 to facilitate a public discussion of the full
4 board, a transparent discussion of the full
5 board. Any formal notes or whatnot will not
6 appear in the forum but will occur in the
7 subcommittee to bring proposals going forward for
8 the full board to consider. And at that time
9 they would be available to the public for
10 comment.

11 And we look forward to hearing your
12 comments and taking this discussion further at
13 the full board meeting in the fall.

14 Thank you, everybody. This meeting is
15 now adjourned.

16 (Whereupon, at 2:59 p.m., the web
17 conference was adjourned.)
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19
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21
22

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