Hello, my name is Austin Sayer, I am a fourth-generation farmer from Brownsville, we raise several seed crops including ryegrass, Tall Fescue, meadowfoam, Radish, clover, and a few others. None of the end users of these crops are in Oregon, and many are international. HB 2020 would put us and others at a serious disadvantage in these markets.

Agriculture will particularly be impacted due to the thin margins that farmers operate on year in and year out. Additional costs can only create thinner margins for us as ours is a global market with no opportunity to simply increase our prices. This puts Oregon's diverse agriculture industry at a disadvantage not only on a national scale, but a global one. There are already many areas of the world that are determined to grow crops that have historically only been grown in Oregon, and this will only provide those areas with more competitive advantage while decreasing our market share in very limited demand markets.

With decreasing margins, we lose our ability to innovate our operations to increase our efficiency and produce crops that allow us to improve soil health with minimum tillage. We grow many crops that give us the ability to improve soil health through their unique nutrient cycling and minimal surface residues, thereby allowing us to put the next crop in the ground with very few inputs and tillage requirements.

There needs to be an accessible incentive and offset program included in HB2020. Oregon agriculture is very much part of the solution to atmospheric CO2 already. The total carbon capture by Oregon's grass seed production acreage is over 2.2 million tons per year with the state average at 5.45 tons of carbon per acre of grass seed per year, that equals 20 tons of carbon dioxide PER ACRE per year. With these kinds of numbers, Oregon agriculture is certainly already doing a great job of removing CO2 from the atmosphere. It would be a tragedy to limit our ability to innovatively improve upon our carbon footprint.

Oregon agriculture has always been renowned for its diversity. We continue to increase our production and have been able to do so through our creative and resourceful independent operations. If we lose our ability to compete both nationally and globally, the beautiful landscape that is Oregon Agriculture will forever be damaged.

Gmail

Austin Sayer <ars1014@gmail.com>

RE: [College of Agricultural Sciences] Grass seed carbon study

3 messages

Chastain, Thomas Grady <Thomas.Chastain@oregonstate.edu> Wed, Feb 13, 2019 at 1:51 PM

To: "ars1014@gmail.com" <ars1014@gmail.com>
Cc: "Anderson, Nicole Paulette" <Nicole.Anderson@oregonstate.edu>, "Moore, Amber D" <amber.moore@oregonstate.edu>, "Jessie, William" <William.Jessie@oregonstate.edu>, "Verhoeven, Elizabeth" <betsy.verhoeven@oregonstate.edu>

Austin:

What you remember is a study that I had proposed but did not get funded. Here are some grass seed production specific numbers to consider for carbon from the work that I was able to complete. The table below shows the biomass values and total carbon content for two grass seed crops.

Crop	Component	Biomass (lbs/acre)	C fraction	Total C (lbs/acre
Tall Fescue	Shoots	18500	0.42	7770
	Roots	11200	0.35	3920
	Seed	1600	0.42	672
				12362
Perennial Ryegrass	Shoots	10400	0.42	4368
	Roots	8500	0.35	2975
	Seed	1500	0.42	630
				7973

The table shows that an acre of tall fescue captures a net 12,362 lbs of carbon per acre over a one-year period with somewhat lower values for perennial ryegrass. Since these crops are perennials, they capture this much net carbon each year over the life of the crop stand with somewhat higher values in young 1st-year stands and lower values in older 3rd year stands.

If you plug my numbers into the most recent acreage values, you can calculate the tons of carbon captured by each of the crops. Tall fescue is the top crop with more than 800,000 tons of carbon captured each year. The total carbon capture by Oregon's grass seed production acreage is over 2.2 million tons per year. The state average is 5.45 tons carbon per acre of grass seed field.

3.67 tons of CO_2 per ton of carbon

Crop	Acreage	Total C
	(acres)	(tons)
Annual ryegrass	120250	743265
Perennial ryegrass	83450	332673
Tall fescue	134370	830541
Kentucky bluegrass	20650	82321
Rough bluegrass	1080	4305
Orchardgrass	15190	93889
Chewings fescue	8790	35041
Red fescue	11370	45327
Hard fescue	2280	9089
Colonial bentgrass	3030	12079
Creeping bentgrass	3590	14312
	404050	2202843

5.45 tons C/acre

Biomass is one way that carbon can be sequestered on the farm. The other is in the soil. Our work shows that soil carbon in Willamette Valley grass seed fields range from 13 grams C/kilogram soil to 34 grams C/kilogram soil. The lower end of the range is from burned fields and lower productivity soils and the high end is from soils with little or no crop residue removal and higher productivity soils. So how much carbon is in the soil? At the low end of the range, grass seed fields have 13.2 tons C/acre furrow slice (top 6.7 inches of the soil) and at the high end, 34.5 tons C per acre. There is carbon below this level but it drops off pretty rapidly with depth since most of the root system biomass is found in the top 12 inches of the soil as a result of anoxic conditions. I've copied soil scientists with expertise in this area in case they have anything to add.

I do not know the current values for the carbon use footprint in production of grass seed crops. However, I do know that there is certainly less carbon used or emitted in the production of grass seed crops than the 5.45 tons of carbon captured per acre by the biomass.

Tom

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