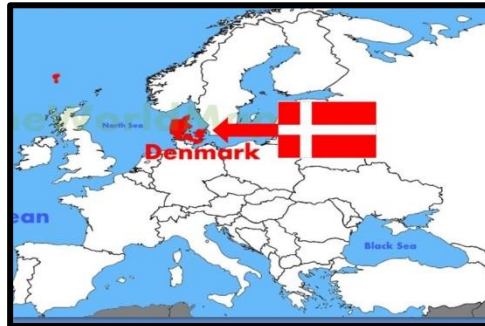


## Danish Grass and Legume Seed Production to 2019

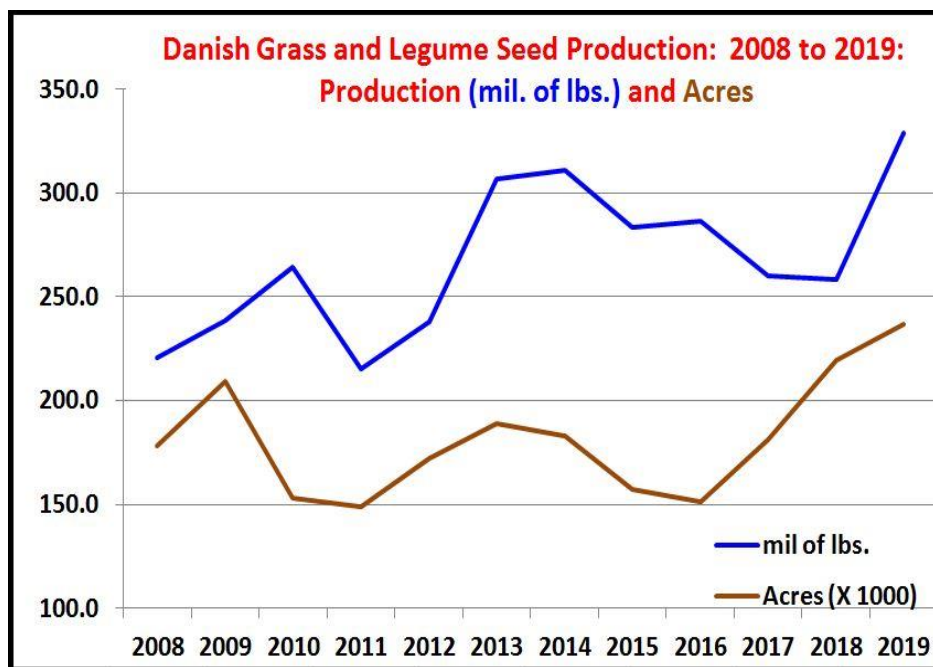
**Denmark**, a country in northern Europe, has a population of 5.8 million people, and has been a part of the EU community since 1973. In addition to its' continental land base, there are also around 406 islands belonging to Denmark. With its' coastal climate, Denmark has a climate very suitable for the production of grass seed.



### Overview:

Agriculturally, Denmark is known for its' pork production, and is the EU's largest exporter of pork products. For crops, Denmark annually grows around 2.8 million acres of wheat and barley, but also commits around 180,000 to 200,000 acres towards grass and legume seed production. Denmark provides much of the EU member countries needs for grass seed, especially the temperate grasses (perennial ryegrass, creeping red fescue, tall fescue, and Kentucky bluegrass). What grass and legume seed production that occurs in Denmark annually affect markets throughout the world.

2019 saw 237,000 acres of Danish agricultural lands dedicated to grass and legume seed production. This was a 17,000 acre (8.2%) increase from 2018, and the 3<sup>rd</sup> consecutive year that grass and legume seed acres had increased. 2019 saw 328 million lbs of grass and legume seed production, up 73 million lbs. from 2018 totals. Over the past 12 years, Denmark has averaged 180,000 acres of grass and legume seed production, producing, on average, 267 million lbs. of various grass and legume seed.



Danish Grass and Legume Seed Production 2008 to 2019		
Year	mil of lbs.	Acres
2008	220.4	178,105
2009	238.5	209,257
2010	264.3	152,988
2011	215.3	148,576
2012	238.2	172,383
2013	307.0	188,582
2014	310.6	183,064
2015	283.2	157,066
2016	286.1	150,936
2017	259.9	180,973
2018	258.4	219,654
2019	328.6	236,940
2008 to 2019 Avg	267.5	181,544

## Danish Grass and Legume Seed Crops

### Danish Turf Grass Seed Crops

- Danish turf grass seed production is led by perennial ryegrass and creeping red fescue, with each crop averaging over 75,000 and 43,000 acres annually.
- Acres of **perennial ryegrass** have risen dramatically the past few years, going from 57,000 acres (2016) to over 108,000 acres in 2019. 2019 saw the largest perennial ryegrass seed crop come off in at least the past 12 years, with almost 170 million lbs. produced.
- Acres of **creeping red fescue** have remained very steady the past 10 years. With an average yearly production of over 71 million lbs., Denmark is the largest producer of creeping red fescue seed in the world.
- Acres of **tall fescue** have also risen substantially above the 10 year average, with 2019 acres at 18,000 (over 7,500 acres above the 10 year average). 2019 also saw the largest tall fescue crop come off in the past 12 years, with 25.12 million lbs. of seed produced.
- The other major turf grass seed crop, **smooth-stalked meadowgrass (Kentucky bluegrass)**, also saw 2019 production at record levels, with 28 million lbs. of seed produced.
- Other turf grass species grown in Denmark include meadow fescue, sheep's and hard fescues, and other meadowgrass.
- In total, Denmark produced over 292 million lbs. of turf grass seed in 2019, well above the 10 year average of 235 million lbs.

Danish Turf Grass Seed Production: 2008 to 2019																
Year	Perennial ryegrass		Red fescue		Tall fescue		Smooth-stalked meadowgrass		Meadow fescue		Sheep's / hard fescue		Others meadowgrass		Total Turf Grass	
	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres
2008	86.95	71,810.4	69.19	40,647.0	12.76	12,852.4	15.78	14,724.0	3.47	2,841.2	2.25	2,568.7	0.34	294.8	190.74	145,738.6
2009	89.47	85,324.9	73.79	52,210.3	17.02	15,237.7	19.94	17,172.6	2.62	2,313.6	2.84	3,216.8	0.30	165.1	205.98	175,641.0
2010	100.76	58,086.7	81.98	41,653.6	20.68	7,080.4	21.99	17,025.8	3.05	851.8	4.33	2,998.9	0.28	297.3	233.07	127,994.6
2011	84.09	64,117.1	68.86	38,661.6	11.07	3,352.0	20.68	18,380.2	1.89	574.8	3.72	2,471.5	0.20	279.2	190.50	127,836.3
2012	108.62	86,103.5	63.28	37,340.3	9.56	6,163.5	24.36	17,386.1	1.04	634.1	3.63	1,936.1	0.19	214.7	210.68	149,778.2
2013	166.81	94,038.0	73.98	44,277.8	13.90	9,369.5	20.52	14,670.1	0.87	650.4	3.21	1,911.4	0.08	66.7	279.36	164,983.9
2014	163.01	88,267.9	72.29	43,308.6	16.30	10,403.6	23.81	13,680.7	1.34	572.5	2.65	1,731.7	0.20	268.9	279.60	158,233.9
2015	144.72	65,436.4	67.42	41,008.6	17.33	10,803.4	19.16	14,368.2	1.10	1,007.2	1.99	1,883.2	0.11	113.7	251.81	134,620.6
2016	139.15	57,651.8	72.92	42,563.1	17.58	8,352.1	16.17	16,926.9	1.90	927.9	1.70	1,865.4	0.26	228.6	249.68	128,515.9
2017	113.24	65,155.2	69.35	45,781.1	17.89	14,367.7	19.25	20,188.7	2.07	1,923.2	2.61	2,496.3	0.11	137.1	224.52	150,049.3
2018	110.99	85,372.8	74.77	55,586.8	21.08	19,017.0	16.45	21,622.2	1.18	1,107.5	3.02	3,463.2	0.09	137.1	227.58	186,306.5
2019	169.50	108,382.0	67.14	48,401.0	25.16	17,979.9	27.97	24,889.7	0.64	525.1	2.35	2,449.6	0.14	197.7	292.91	202,824.8
10 Yr Avg (2009 to 2018)	122.09	74,955.4	71.86	44,239.2	16.24	10,414.7	20.23	17,142.1	1.71	1,056.3	2.97	2,397.4	0.18	190.8	235.28	150,396.0

Note: Smooth-stalked meadowgrass = Kentucky Bluegrass

Note: Tall fescue seed production is included under turf grasses, even though it is also used as a forage grass

## Danish Forage Grass Seed Crops

- Danish forage grass seed production, compared to its' turf grass seed sector, only occupies about 10% of her total grass and legume seed production land base. 2019 saw 23,500 acres in forage grass seed production, compared to over 200,000 acres in turf grass seed production.
- Forage grass seed production in Denmark is led by **cocksfoot (orchardgrass)**, with 2019 production at 12.6 million lbs.
- **Italian/Westerwold ryegrass** crops produced almost 5.7 million lbs. of seed in 2019.
- **Festulolium** (a cross between tall fescue and perennial ryegrass), saw 2019 production come in at almost 4 million lbs.
- Although typically a larger crop than festulolium, in 2019 **hybrid ryegrass** (a perennial ryegrass X Italian ryegrass species), saw only 2.1 million lbs. of seed come off, 1.5 million lbs. below the 10 year average.
- In total, 2019 saw Danish forage grass seed production at 27.5 million lbs., 4 million lbs. above the 10 year average. Most of this seed is exported to neighboring EU countries.
- Acres dedicated to the production of forage grass seed was up substantially in 2019, with over 23,500 acres in production. This was the 3<sup>rd</sup> consecutive year where acre were over 20,000, and well above the 10 year average of 15,100 acres.

Danish Forage Grass Seed Production: 2008 to 2019														
	Cocksfoot		Italian/Westerwold ryegrass		Festulolium		Hybrid ryegrass		Meadow fescue		Small timothy		Total Forage Grass	
	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres
2008	11.00	11,294.7	5.52	3,697.2	2.06	2,148.3	3.36	2,489.3	3.47	2,841.2	0.03	38.5	25.44	22,509.3
2009	11.42	13,127.0	5.48	3,604.3	1.99	1,815.5	3.67	2,045.3	2.62	2,313.6	0.03	13.6	25.22	22,919.2
2010	11.71	6,536.4	5.19	3,247.8	1.76	937.5	3.55	1,083.3	3.05	851.8	0.02	8.6	25.29	12,665.5
2011	7.90	2,983.1	5.12	3,431.1	2.40	1,736.7	1.73	980.5	1.89	574.8	0.01	36.6	19.04	9,742.6
2012	8.23	2,354.7	6.02	6,163.5	2.32	1,567.1	2.64	1,721.8	1.04	634.1	0.01	9.1	20.26	12,450.4
2013	5.17	3,478.5	6.87	3,226.2	4.03	2,618.8	2.83	1,912.3	0.87	650.4	0.05	39.5	19.82	11,925.8
2014	5.95	5,241.3	5.98	3,415.0	5.20	3,121.2	4.50	2,261.3	1.34	572.5	0.04	39.5	23.01	14,650.9
2015	5.82	3,125.6	6.77	2,697.6	6.31	3,125.6	4.87	1,727.5	1.10	1,007.2	0.01	39.5	24.89	11,723.2
2016	8.90	9,892.6	6.51	1,468.1	5.25	1,178.2	4.49	674.8	1.90	927.9	0.05	22.2	27.08	14,163.8
2017	11.18	12,398.5	8.14	4,606.0	4.32	1,268.4	3.73	881.7	2.07	1,923.2	0.03	-	29.48	21,077.8
2018	10.65	13,070.1	0.77	3,304.0	2.88	1,907.7	4.92	1,047.2	1.18	1,107.5	0.13	-	20.53	20,436.6
2019	12.66	14,005.4	8.11	4,773.3	3.97	3,028.3	2.13	1,202.2	0.64	525.1	-	-	27.52	23,534.3
10 Yr Avg (2010 to 2018)	8.69	7,220.8	5.69	3,516.4	3.65	1,927.7	3.69	1,433.6	1.71	1,056.3	0.04	20.9	23.46	15,175.6

Note: Cocksfoot = Orchardgrass

## Danish Legume Seed Crop

- Danish production of legume seed is minimal, with 2019 acres only totaling 371 acres. Although data does indicate some alfalfa seed and alsike seed production occurred, no acres are given. All reported 2019 acres are dedicated to red clover seed, which saw 1 million lbs. of seed produced off 371 acres.
- On average (10 year), less than 1000 acres of legume seed crops are grown annually.

Danish Legume Seed Production: 2008 to 2019														
	Red Clover		Lucerne/Alfalfa		Alsike clover		Birdsfoot trefoil		Common vetch		White clover		Total Legumes	
	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres	mil of lbs.	Acres
2008	0.81	1,153.7	0.09	-	0.00	-	0.01	-	0.02	-	-	0.0	0.93	1,153.7
2009	1.04	941.2	0.24	13.6	0.05	17.3	0.02	26.2	0.00	72.9	0.1	-	1.42	1,071.3
2010	0.77	1,521.5	0.47	8.6	0.00	-	0.03	32.9	0.04	45.7	0.1	0.1	1.38	1,608.8
2011	0.31	790.0	0.05	43.7	0.06	-	0.00	51.9	0.10	64.2	0.1	0.2	0.63	950.0
2012	0.23	765.8	0.10	34.6	0.08	-	0.03	62.8	0.08	51.2	0.1	0.2	0.66	914.4
2013	0.49	1,075.6	0.01	36.3	0.02	14.8	0.05	73.1	0.06	44.5	0.2	0.1	0.79	1,244.6
2014	0.50	1,145.1	0.06	53.6	0.04	14.8	0.01	-	0.00	-	-	-	0.62	1,213.5
2015	0.27	724.3	0.04	29.7	0.00	14.8	0.01	-	0.09	-	-	0.2	0.40	768.7
2016	0.68	23.7	0.30	-	0.04	14.8	0.03	17.3	0.00	-	0.0	-	1.09	55.9
2017	0.41	197.2	0.20	-	0.04	-	0.03	24.7	0.00	-	0.1	-	0.73	222.0
2018	0.66	609.6	0.17	11.1	0.04	-			0.00	-	-	-	0.87	620.7
2019	1.03	371.2	0.19	-	0.06	-			0.00	-	-	-	1.28	371.2
10 Yr Avg (2009 to 2018)	0.54	779.4	0.17	23.1	0.04	7.7	0.02	28.9	0.04	27.8	0.1	0.1	0.86	867.0

## Danish Production compared to Peace River Region of Alberta/BC

The Peace River region of Alberta/BC continues to be a major production region in Canada for grass and legume seed. At one time, 50 million lbs. of creeping red fescue production was considered an average production year. However, with more growers planting our more traditional crops (Wheat, Barley, Canola, and Oats), acres of grass and legume seed in this region has fallen dramatically in recent years. With this decrease in production, Denmark stands alongside the USA as a major player in turf grass seed production. Denmark's average annual creeping red fescue production figure of 71.8 million lbs. is over 2X what the Peace regions average is now (32.5 million lbs.). The only other major creeping red fescue growing area in the world is the Silverton Hills in Oregon, USA, with 11,000 acres producing 10.8 million lbs. of creeping red fescue in 2019.

Comparison of 2019 Grass and Legume Seed Production: Denmark and Peace River Region of Alberta/BC				
	Denmark		Peace Region of Alberta/BC	
	Production	Acres	Production	Acres (est.)
Turf	235.3	150,396	34.7	69,400
Forage Grass	23.5	15,176	15.6	39,000
Legumes	1.3	371	2.1	7,000
Total	260.0	165,943	52.4	115,400

**Summary:**

Denmark has established itself as the grass and legume seed production nation in Europe. With the EU as its' steady customer, and a coastal climate very conducive for the production of temperate climate grass species, Denmark should continue to be the number one European grass seed producer for years to come.



EU Data obtained from: European Seed Certification Agencies Association (ESCAA)  
<http://www.escaa.org/index.php>

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