

An article of *Maaseudun Tulevaisuus* (MT, Newspaper: Future of the Countryside) 4.11.2020 reporter
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Second Article: The amount of the oat drink and milk produced per hectare are almost the same

MT have been doing some research into the level of crop of oats vs grass a farmer get per hectare and how many companies can produce drinks from both oats and grass.

Oatly's advertisement campaign has roused up passion and all kinds of discussion. Often is forgotten that both drinks are made from the products of fields, which use the sunshine energy for growth. The question is how well these oat drinks, or milk products exploit this opportunity and how do they compare.

Rough calculation shows that you will get a bit more oat drink compared to milk per field hectare. The difference is much smaller than you could think.

The leading researcher from Natural Resources institute Finland (LUKE), Perttu Virkajärvi, has studied the calculation and finds it very interesting. It tells about the effectiveness of the use of the field, but not about the products climate impact.

MT collected the statistics from LUKE regarding the amount of crop harvest from oat and silage over the last five years.

The crop of oat is not usable as it is. You can only use the larger grains which need to be peeled. This means that you lose at least third of the crop. After this process even these grains are not used entirely to make the oat drink. Roughly half of the grains will be used and half of them will remain as mash.

"Every oat product company has their own producing process and there are differences in the refining efficiency, but it is hard to get this information", says one oat business field specialist. He or she wants to say this anonymously because it could be harmful.

We divide Finland from the farming point of view into different area's. The middle of the Finland and the north part of Finland we call as a Milk Finland because there are many dairy farmers. In North Ostrobothnia the oat crop during 2015-2019 was average 2952 kilograms per hectare. From that amount will get about 800 kilograms material for manufacturing oat drinks, which means about 8000 litres of finished product.

When you are manufacturing oat drinks you will also produce mash. Oatly explains that this mash is used as pigs' feed, in which case there is enough feed to raise less than 300 kilograms of pork.

What about the milk?

The LUKE's crop information from the same period for the pre-dried silage crop will give on average 14636 kilograms. The usable matter accumulates per hectare is about twice the size when comparing with oat.

According to the research made by LUKE one cow needs feed from the area of 1.5 hectare. This calculation includes grass, concentrate and calf growing.

One cow produces on average 9000 litres milk per year. From 1.5 hectare grass field you will get 6000 litres raw milk and 60-70 kilograms meat when the cow is slaughtered. In addition, you will get about 200 kilo grams butter when you lower the fat percent of raw milk to regular milk's 1,5 percent. According to LUKE`s European milk project you get 6200 litres milk per hectare.

In both cases we are talking about the plants taking the carbon from the air, which is accrued in the plant through photosynthesis. After the processing process these products will be for sales in the stores.

From this point of view producing an oat drink seems like a clever way to produce a drink. This tells us how much per hectare air-bound carbon is transferred to the consumer's table. But this does not tell us the impact on the climate or which of the options is more climate friendly, Mr Virkajärvi indicates. This kind of estimation would demand more information about greenhouse gases.

Grass fields absorb more nitrogen than oat fields. Farming grass is allowing less nitrogen than oat field. N₂O emissions put more strain on grass than oats. Grass, on the other hand, emits less N₂O than oats. CH₄ emissions are generated from ruminant cows, not from oat cultivation, Virkajärvi says.

In addition, there are differences in the carbon sequestration of grass and grain and these complex processes are not even known.

The farmer's share is 3 or 35 percent

The difference between what the farmer gets from oat drink or milk is huge. Also, the price difference in the store is big.

The cost of oat ton is about 150 €. After manufacturing you get about 280 kilograms oat flour out of the oat ton. When making oat drink from that, the raw material price of the oat is about 6-7 cents per litre. From milk the farmer gets little bit less than 40 cents per litre. (Finnish prices)

The situation in the stores is opposite. Regular milk costs about 1 € and oat drink about 2 € per litre or even more. When the farmer gets about 35 percent from the price of the milk litre, from oat drink the farmer's share is only about 3 percent.

When farming oat the farmer gets remarkably fewer euros if you compare it to milk production.

The prices of raw materials have been taken from the weekly monitoring of grains of Maaseudun Tulevaisuus and European Union milk statistics. The consumer prices you can find from the stores in Finland.

