



Technical leaflet

Pivot irrigation system on grasslands



1 Description of the innovation

Climate changes brings new challenges for agriculture in Europe. Some areas suffer from scarce water resources. Wielkopolska (middle-west part of Poland) is one of them. Last year total annual rainfall in this region didn't exceed 300 mm/m². This year will be very similar. Dairy farmers are looking for innovative solutions and strategies which can allow them to maximise milk production and grow and/or to add value to their products. Production of high quality grass in dry conditions requires providing external water to plots. This procedure is



mainly used for vegetables but very seldom in case of grasslands. There are plenty of different irrigation systems available. One of them is pivot irrigation system presented on a picture below. This system optimizes crop irrigation, reaches even water distribution (90%) and achieves perfect dosing control. It can be automatically controlled from farmer smartphone and requires no staff.

A drilled well (200 meters deep) was dug in the farms as a source of water for irrigation. Currently, three machines are used to irrigate three grasslands that have different location, size and shape. The parameters of every ramp of the pivot irrigation system are set up depending on the needs of the specific agricultural plots.

The decision when to irrigate is always undertaken by the farmer himself based on his visual evaluation of plants and soil. To improve the performances of his grasslands, apart from irrigation technology, the farmer tested several grassland mixtures which would give the best production results under irrigation.



Wielkopolska
Izba Rolnicza



Uniwersytet Przyrodniczy w Poznaniu



Logo of Inno4Grass project, including the European Union flag and text: "Projekt współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Regionalnego" and "Innowacja Regionalna 2014-2020".



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2 Results obtained with the adoption of innovation

In dry years, which now appears to be regular, farmers can still get high production of good quality grass. He has limited area and he can buy other forage like maize from local market. However, he is not able to buy good quality grass.

Michał Kaczmarek, where the innovation is adopted, runs family farm in Uścikowo, Wielkopolska Voivodship. Today farm is 63 ha big with 130 dairy cows of 8 600 l annual milk production per cow and is solely focused on dairy business. Farmer has successfully implemented ramp pivot irrigation system on his farm. A drilled well (200 meters deep) was dug as a source of water for irrigation. Three machines are used to irrigate three separate grasslands that have different location, size and shape. The parameters of every ramp pivot irrigation are adopted to specific agricultural plots. Apart from irrigation technology farmer tested several grassland mixtures which would give the best production results being irrigated. The decision when to irrigate is always undertaken by farmer himself based on his visual evaluation of plants and soil condition.

The strategy of the farmer is to get as much fodder as possible from his grassland and buy maize silage from the market.



Advantages

- longer-lasting temporary grasslands
- lower costs of cultivation
- higher production of grass
- better grass quality



Disadvantages

- higher costs of water consumption on a farm
- high costs of investment
- bureaucratic procedures related to using water resources

More information

www.encyclopediapratensis.eu— case study section/Michal Kaczmarek Farm