

Juchowo Biodynamic Farm, PL

Organic farming since 2000

Association: Demeter



Yield enhancing strategy, what makes the farm special??

Juchowo Farm is a large-scale organic and biodynamic (Demeter-oriented) mixed farm built around a closed nutrient cycle: most feed is produced on-farm, manure is composted and returned to fields, and rotations rely strongly on grass-clover and permanent/temporary grasslands to build soil fertility and stabilise yields on light soils. The farm's role as a demonstration and research-on-farm site make it a particularly strong lighthouse example for practical, scalable yield stability strategies in organic systems.

Farm's website (Juchowo.org) – this farm is a foundation

Optimisation wishes and questions: Juchowo Farm wants to improve yield stability on light soils by optimising the rotation (grass-clover, cereals, cover/break crops), selecting locally robust varieties, and fine-tuning compost/manure/slurry use. In parallel, it aims to strengthen milk productivity and quality, including the development of A2A2 milk.

Farm: Mixed Organic and Biodynamic farm, 1900 ha: 1400 ha arable land, 340 ha permanent grassland, 15 ha vegetables, 10 ha herbs and orchards, 650 cattle of which 350 are dairy cows, milk yield 6.500 kg/year and cow. The farm combines agricultural production with wider rural development goals (education, social initiatives, environmental protection), while remaining strongly anchored in a professional, market-oriented food production.

Soils: 70% sandy soils and 30% clay-sandy soils (arable land), peat soils (grassland)

Rainfall and temperatures

2015-2025	J	F	M	A	M	J	J	A	S	O	N	D	Year
Rainfall [mm]	39	32	37	25	46	54	81	37	46	45	36	33	511
Temperature [°C]	0.4	0.9	3.4	7.7	12.3	17.2	17.4	18	13.9	9.1	4.4	1.6	8.9

Crops. yields and fertilisation 2021-2024 [t/ha]

Crop Rotation	2021	2022	2023	2024	Mean
Grass and legume mixtures	3.8	4.4	5.8	5.7	4.9
Spring oats	0.8	2.5	1.1	2.8	1.8
Buckwheat	0.5	0.6	0.5	0.7	0.6
Winter spelt wheat	1.6	1.8	2.0	1.1	1.6
Winter barley	1.1	2.8	2.1	0.7	1.7
Winter rye	0.5	-	1.9	1.0	1.1
Oil flax	0.7	0.8	0.5	-	0.7
Silage maize	-	-	58.2	25.0	41.6

Grass and legume mixtures, silage maize 32% DM, grains: 86% DM; Fertilisers [mean kg/ha*year], main types applied across the rotation: farmyard manure – dairy cattle deep litter (15-35 t/ha), cattle slurry (15-20 m³/ha), compost (3-50 t/ha); mineral: ICL Polysulphate (100-200 kg/ha, 14K/ 40S/ 4Mg/ 12Ca %), Korn-Kali 'granular' (100 kg/ha, 33K/ 5S/ 3.6Mg %), Magnesia-Kainit (9 K/ 8 S/3 Mg %), ESTA® Kieserit (200 kg/ha, 20S/ 15Mg %); foliar: EPSO Top siarczan magnezu (8-12 kg/ha, 13S/ 10Mg %); biological / biodynamic: Rhizosum N25 (25 g/ha), biodynamic preparations horn manure 500, horn silica 501, valerian 507, Ecovigor, BlueN®, Fundamental, Viano Mixproof Bio 1; lime: Carbonate lime Kujawit 45-50% CaO (1.5 t/ha), Granulated lime bi calc+.

Fertilisation per crop (mean of 2023-2024 season records) N/P/K/Mg/S in kg/ha: Winter rye 80/17/112/26/63; Small-seeded legume forage mixtures 80/68/111/26/62; Winter spelt 101/73/137/31/65; Silage maize 155/35/217/68/67; Spring oats 119/77/159/35/67.

Machinery

Tractors

Power

John Deere 6175R	175 HP
John Deere 5100R	81.60 kW/111HP
John Deere 6195R	173 kW/235 HP
John Deere 8370R	298 kW/405 HP
2x Fendt 310	73.55 kW/100 HP
Fendt 312	88.26 kW/120 HP
Fendt 718	132.39 kW/180 HP
Fendt 936	264.78 kW/360 HP
Fendt GT	73.55 kw/100 HP

Vehicles

Fadroma JCB Loader	110.32 kW/150 HP
Pole JCB Loader	73.55 kW/100 HP
Hardi Sprayer	24 m working width

Machinery

Working width (m)

Joskin Scarifleex aerator	9
Armour barrel	12
Heavy harrows	12
Hatzenbichler weed cutter	12
Einbock weed cutter	12
Furrow cutter	3
Evers subsoiler/non-interfering	6
Hardi comannder/Sprayer	24
Horsch pronto 6DC/Seeder	6
2x Kuhn grass mowers 1	6
Kuhn grass mowers 2 set	6
Lemken cultivator/Cultivation unit	6
Beet hoe	3
Tadlen field sprayer	12
Bale wrapper	-
2x Krone baler /2x Bale wrapping machine	-
Small self-loading baler/Trailer	-
Vicon baler/Bale wrapper	-
Pronar trailer	-
2x Schuitemaker self-loading trailer	-
Leferes trailer	-
Vogel& Noot plough	3.5
2x Bergmann TSW 5210 manure spreader (newer)	24
Rauch spreader/Subsoil fertiliser applicator	24
Monosem seed drill	3
Sperheed (mulcher)	6
Vaderstad NZ/Cultivation unit	6
Vaderstad top down/Cultivation unit	5
Heavy rollers/Field roller	6
Gutler rollers/Field roller	6
2x Kverneland rake	9

Agricultural harvesting equipment

Vegetable combine harvester Amac	1.5
Combine harvester John Deere	7.2
Combine harvester Laverda	6
Carrot combine harvester Asa Lift	0.75

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