



# Biohof Lüscher, CH

Holziken, Switzerland

Organic farming certified by Bio Suisse since 1997



## Yield strategy, what makes the farm special?

Good weed control, good nutrient availability and efficiency, diversification, preservation of soil fertility, machine cooperation

**Optimisation wishes:** stabilisation of yields and product quality despite climate change

## Simon Lüscher

**Farm:** Mixed farming, vegetable cultivation, 25 ha arable land, 50 cattle, 2000 broiler chicken

**Soil:** sandy loam, shallow (gravel below 30 cm depth); some renaturalised soils after gravel extraction

**Precipitation and temperatures:** Küttigen station

2020	J	J	M	A	M	J	J	A	S	N	N	D	Year
Precipitation [mm]	108	59	78	77	114	111	118	107	114	96	104	135	<b>1219</b>
Temperature [°C]	1.8	4.3	6.9	10.5	15.2	19.5	20.3	20.2	16.1	11.4	5.3	2.5	<b>11.2</b>

**Arable crops, yields, fertilisation, 2019–2025, (crop rotation 1, productive soils) [t FM\*/ha]:**

	2019	2020	2021	2022	2023	2024	2025	MW
1 & 2 Clover grass							10.6	<b>10.6</b>
3 Winter wheat	4.7	4.4	4.2	5.8	3.2	3.4	4.5	<b>4.3</b>
4 Onion	17	41	9	32	14	20	...	<b>22</b>
5 Carrot	40	57	41	51	44	66	...	<b>48</b>
6 Potato	31	34	36	32	22	8	40	<b>28</b>
7 Grain maize	10.5	9.0	8.5	10.6	10.0	8.2	10.0	<b>9.5</b>
8 Pea / bush bean	Not specified							
9 Winter wheat	4.7	4.4	4.2	5.8	3.2	3.4	4.5	<b>4.3</b>

\***FM = Fresh matter**; Grain maize: net at 86% dry matter (DM), wheat at 85,5% DM; Fertilisation of cereals (35-40 m<sup>3</sup>), maize (40 m<sup>3</sup>) and clover grass (30 m<sup>3</sup>): 60% on-farm: Cattle slurry [kg/m<sup>3</sup>]: 4.37 N, 0.83 P, 2.34 K; since 2025 mixed with liquid digestate [kg/m<sup>3</sup>]: 4.5 kg N<sub>total</sub>, 2.4 kg N<sub>available</sub>, 1.5 kg P<sub>2</sub>O<sub>5</sub>, 6 kg K<sub>2</sub>O, 0.9 kg Mg, otherwise purchased manure; Commercial fertiliser for potatoes and vegetables (Bioorga, 12% N, 600-800 kg); chicken manure partly in biogas plant (2 of 6 rearing operations), rest as solid manure on green manures [kg/t]: 8.9 N<sub>total</sub>, 4.8 P<sub>2</sub>O<sub>5</sub>

## Machinery

### Tractor/implement carrier

	Power in hp
New Holland T 5060 tractor	106
Kubota M5 tractor 92	90
Fobro Mobil implement carrier with hoeing unit	35

### Working width (m)

### Attachments

On-Land plough Althaus	1 m
Treffler chisel plough	3 m
Cultivator	3 m
Basilier row rotary tiller	3 m
Basilier ridge former	3 m
Lion rotary harrow with seed drill	3 m
Dama seed drill	3 m
Agricola single-seed seed drill (in machine cooperation)	3 m
Treffler hoe harrow	6 m
Tucano hoeing machine	3 m
Flame weeder (in machine cooperation)	3 m
Grimme biomass chopper	3 m
Hardi plant protection sprayer	15 m

### Harvesting machines

Dewulf carrot harvester (in machine cooperation)	0.75 m
Combine harvester (contractor)	4.7 m
Vegetable harvesting machines (peas, beans, spinach) (contractor)	3 m
Grimme potato and onion harvesters (contractor)	0.75 m

### Fertilisation/irrigation

Drag hose on contract, 60% hosed from hole, rest from a tank	15 m
Manure spreader (rent)	6 m
Hose reel Wälchli	
Beinlich irrigation reel	300 m

### Forage production

Kuhn drum mower	
Kuhn mower conditioner	
Rotary hay tedder	
Single rake	
Double rake	3 m