

# Biohof Frei, CH

Ellikon, Switzerland



Organic farming certified by Bio Suisse since 2004



Thomas Frei  
Bisbauer

## Yield strategy, what makes the farm special?

Creating optimal sowing conditions, good weed control, maintaining soil fertility, high share of artificial grassland and green manures, preventing soil compaction, light machinery, few passes, balanced fertilisation

**Optimisation wishes:** Stabilising yields and product quality despite climate change

## Thomas Frei

**Farm:** mixed farming; 37 ha of agricultural land, including 7 ha of grassland; 14 ha of open arable land; wheat, spelt, oats, field beans, flax, maize, potatoes, vegetables; 34 dairy cows, 150 laying hens; 2 ha of forest

**Soil:** sandy loam, loam, clayey loam in places

**Precipitation and temperatures:** Uesslingen station

2010	J	J	M	A	M	J	J	A	S	N	N	D	Year
Precipitation [mm]	67	43	47	60	110	121	121	110	74	72	60	77	<b>962</b>
Temperature [°C]	1.3	2.4	6.4	10.1	13.8	18.5	19.9	19.3	15.2	10.4	5.3	2.2	<b>10.4</b>

## Arable crops, yields, fertilisation, 2019–2025, [t Fresh matter (FM)/ha]:

Crop rotation plan	2019	2020	2021	2022	2023	2024	2025	MW
1/2 Clover grass (5 cuts) <i>Cattle manure</i>				9.0 60 m <sup>3</sup>				<b>9.0</b>
3 Silage maize (green maize & cubes) <i>Cattle manure</i> <i>Commercial fertiliser</i>	24 30 m <sup>3</sup>	~20 30 m <sup>3</sup>	~18 40 m <sup>3</sup>	~20 40 m <sup>3</sup>	21 40 m <sup>3</sup>	19 500 kg	26 30 m <sup>3</sup> 400 kg	<b>21</b>
3 Wheat <i>Pig manure (cattle manure 2022)</i> <i>Commercial fertiliser</i>	5.1 30 m <sup>3</sup>	4.6 40 m <sup>3</sup>	4.3 40 m <sup>3</sup>	5.2 40 m <sup>3</sup> 300 kg	5.6 300 kg	3.5 30 m <sup>3</sup>	4.9 30 m <sup>3</sup> 150 kg	<b>4.7</b>
4 Winter field beans	3.7	3.5	2.1	4.3	4.1	2.6	3.3	<b>3.2</b>
5 Wheat <i>Pig manure (cattle manure 2022)</i> <i>Commercial fertiliser</i>	5.1 30 m <sup>3</sup>	4.6 40 m <sup>3</sup>	4.3 40 m <sup>3</sup>	5.2 40 m <sup>3</sup> 300 kg	5.6 300 kg	3.5 30 m <sup>3</sup>	4.9 30 m <sup>3</sup> 150 kg	<b>4.7</b>
5 Spelt <i>Cattle manure</i>	3.5	2.8	3.1	3.0 30 m <sup>3</sup>	4.5	3.4 30 m <sup>3</sup>	4.0	<b>3.5</b>
6 Winter oats <i>Cattle manure/Commercial fertiliser</i>	-	5.3 40 m <sup>3</sup>	4.5 30 m <sup>3</sup>	5.5 40 m <sup>3</sup>	5.5	3.5 300 kg	6.0 250 kg	<b>5.0</b>
6 Winter oilseed rape <i>Cattle manure/commercial fertiliser</i>	8	0	-	-	-	0.8 30 m <sup>3</sup>	2.0 200 kg	<b>0.9</b>

Cattle manure, diluted [kg/m<sup>3</sup>]: 1.68 kg N<sub>total</sub>, 0.76 kg P<sub>2</sub>O<sub>5</sub>, 2.66 K<sub>2</sub>O, C:N = 9.15; Pig manure (fattening) [kg/m<sup>3</sup>]: 3.2 kg N<sub>total</sub>, 1.9 kg P<sub>2</sub>O<sub>5</sub>, 2.0 K<sub>2</sub>O; C:N = <10 (unknown); Commercial fertiliser Azopower [%]: 11% N, 2% Mg, 5% S, C:N = 4.0–4.5

## Machinery

### Tractor

Tractors

### Power in kW

40-66

### Working width (m)

### Attachments

3-furrow plough Lemken Opal

Lemken chisel plough with wing shares

Maschio rotary harrow

Amazone disc seed drill

Lely tine harrow

Treffler harrow (rental)

Bärtschi harrow

Maschio rotary harrow

2.5 m

3 m

3 m

5.5 m

7.5 m

3 m

3 m

### Harvesting machines

Combine harvester (contractor)

5.4

### Fertilisation

Trailing shoe, tank

or via contractor

Fertiliser spreader Rauch

9 m

15 m

15 m