Research Institute of Organic Agriculture FiBL
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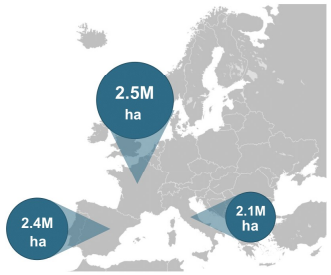
Organic Agriculture in Europe 2020

Organic Farmland



17.1M ha — Organic farmland in million (M) hectares (ha)

3.7% — Growth 2019/2020

3.4% — Organic share of total farmland

Farmland in million (M) hectares
Top 3 countries

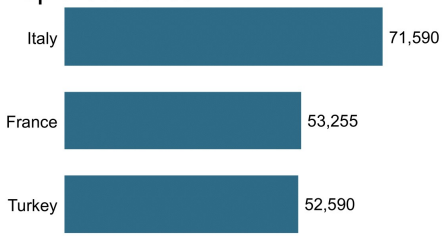
Organic Producers

The number of organic producers is increasing

417,977 — Organic producers

105% — Growth 2011/2020

Number of producers
Top 3 countries



Organic Market

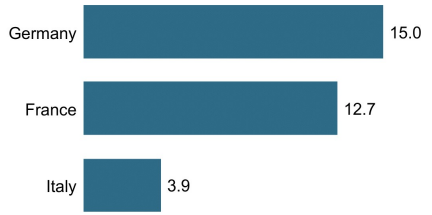
The European market is growing

52.0 — Europe´s organic retail sales in billion euros

63 — Per capita spending in euros

14.9% — Organic market growth 2019/2020

Market in billion euros
Top 3 countries



Market growth in percent
Top 3 countries

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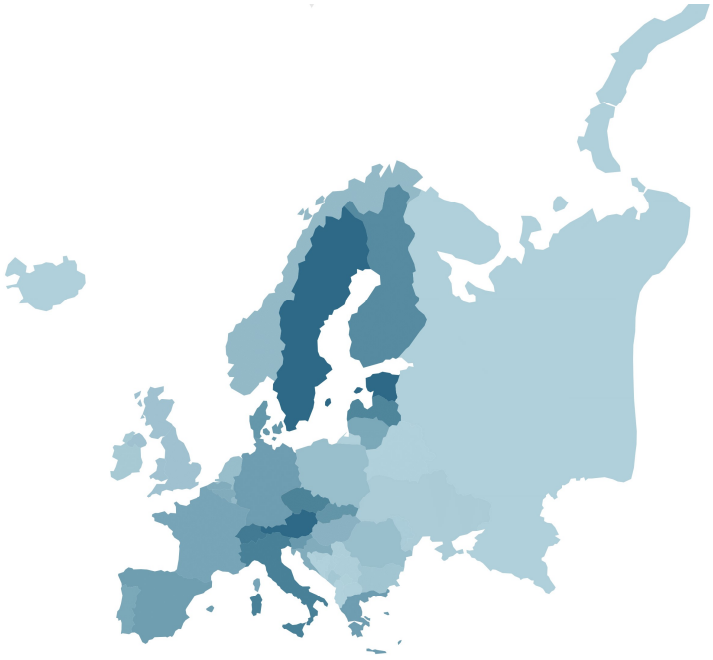
Source: FiBL survey © 2022
More information: www.organic-world.net - statistics.fibl.org

Europe: Organic agricultural land 2020



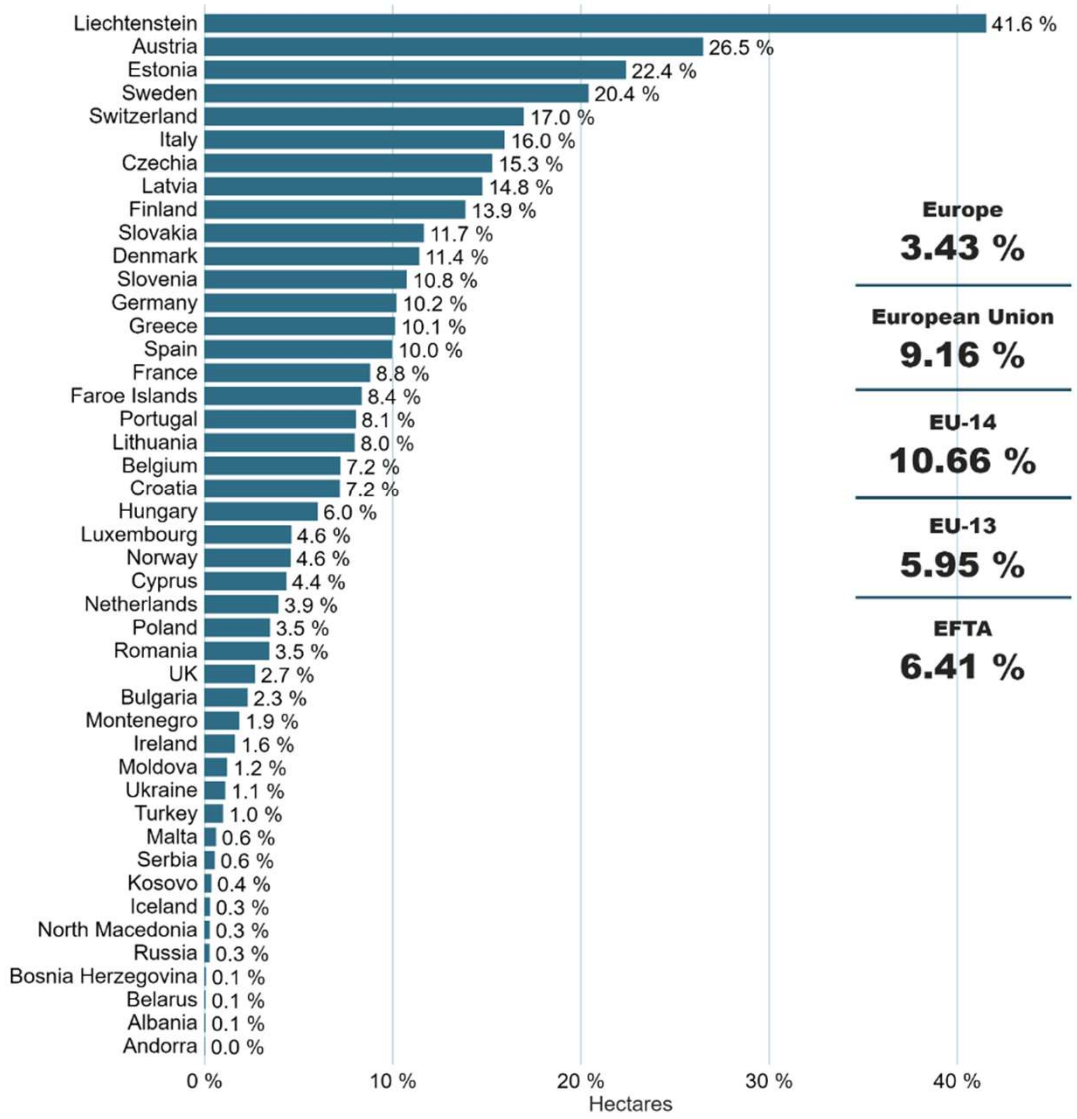
Europe: Organic share of total agricultural land

More than 0% — More than 20%

Source: FiBL survey 2022, based on national sources and Eurostat.

Europe: Organic shares of total agricultural land 2020

Source: FiBL-AMI survey 2022



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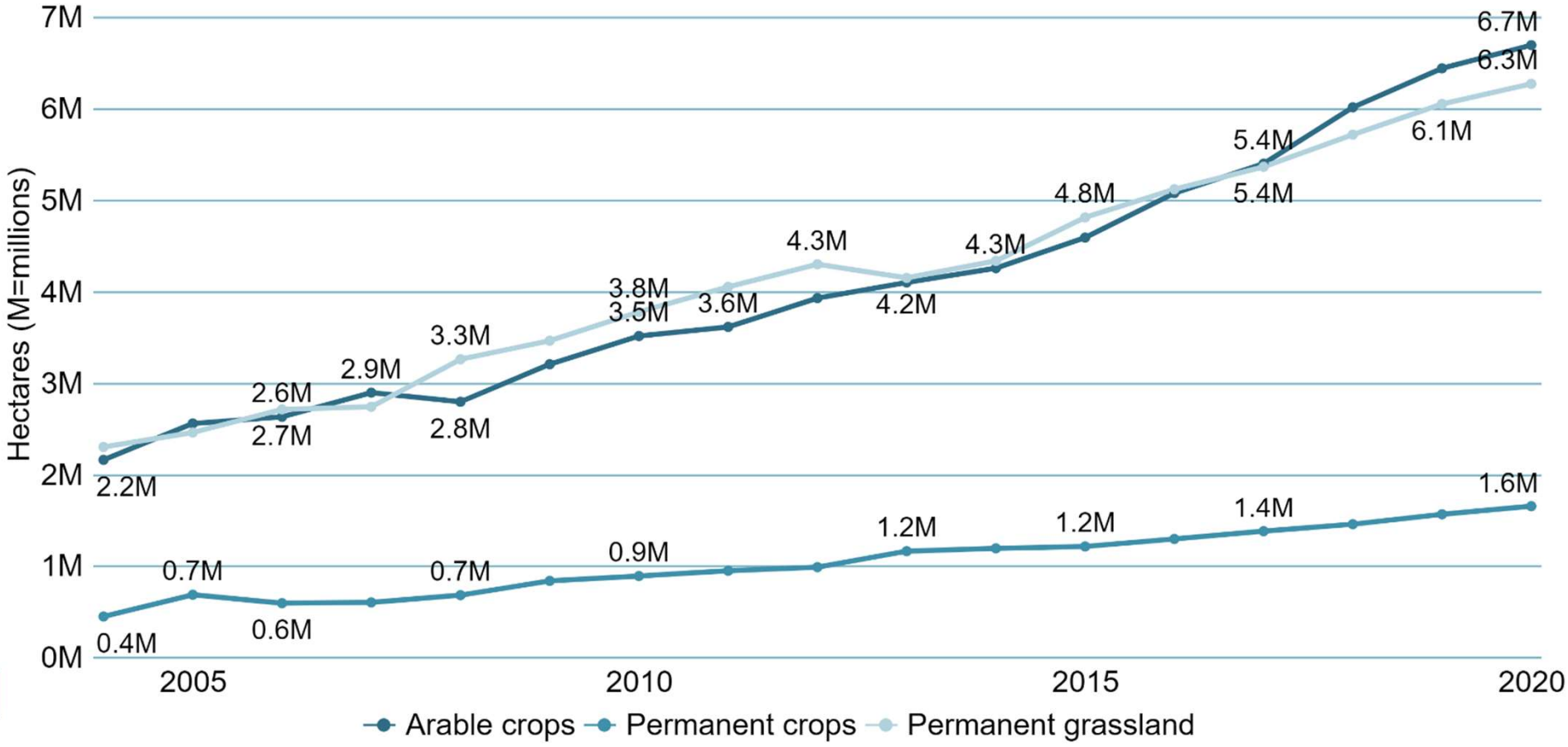
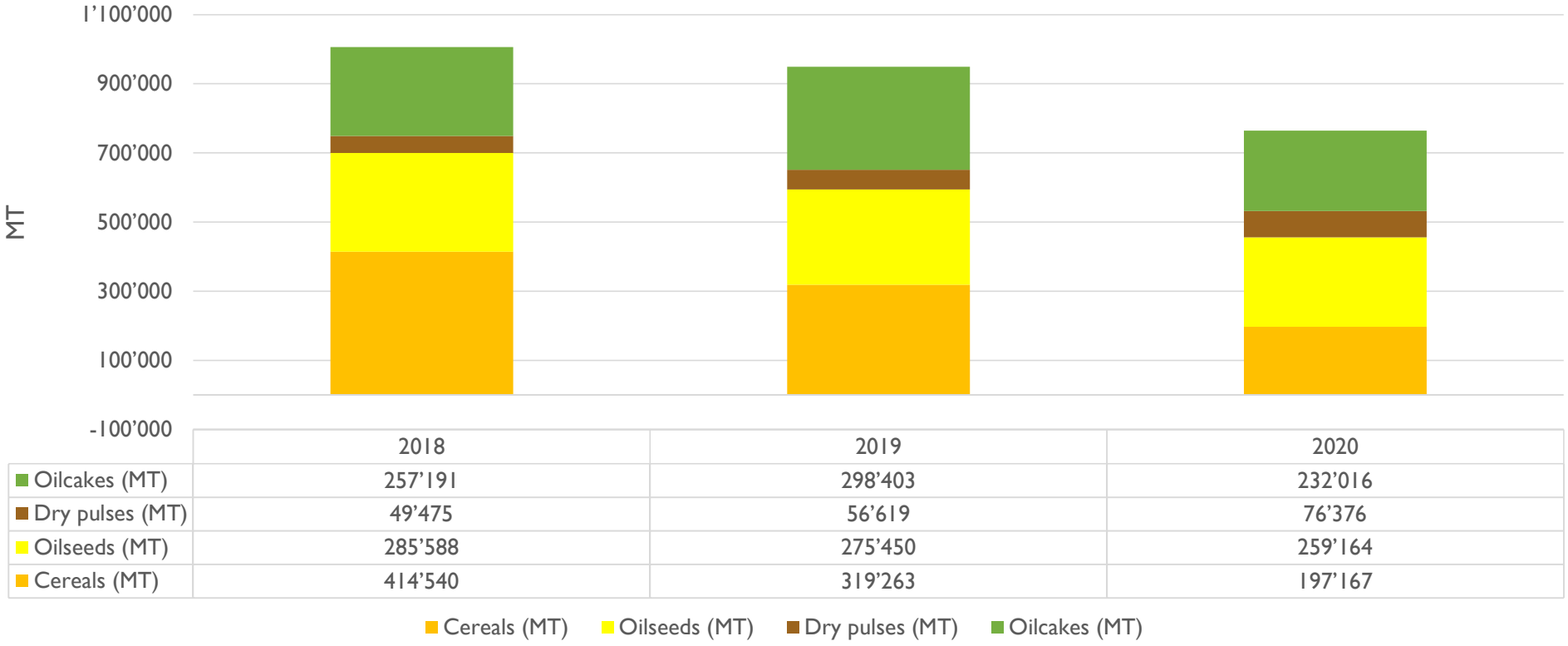
European Union: Growth in organic agricultural land by land use type 2004 - 2020

Source: FiBL-AMI survey 2022



Development of EU organic imports of cereals, dry pulses, oilseeds and oilcakes 2018-2020



	2018	2019	2020
Oilcakes (MT)	257'191	298'403	232'016
Dry pulses (MT)	49'475	56'619	76'376
Oilseeds (MT)	285'588	275'450	259'164
Cereals (MT)	414'540	319'263	197'167

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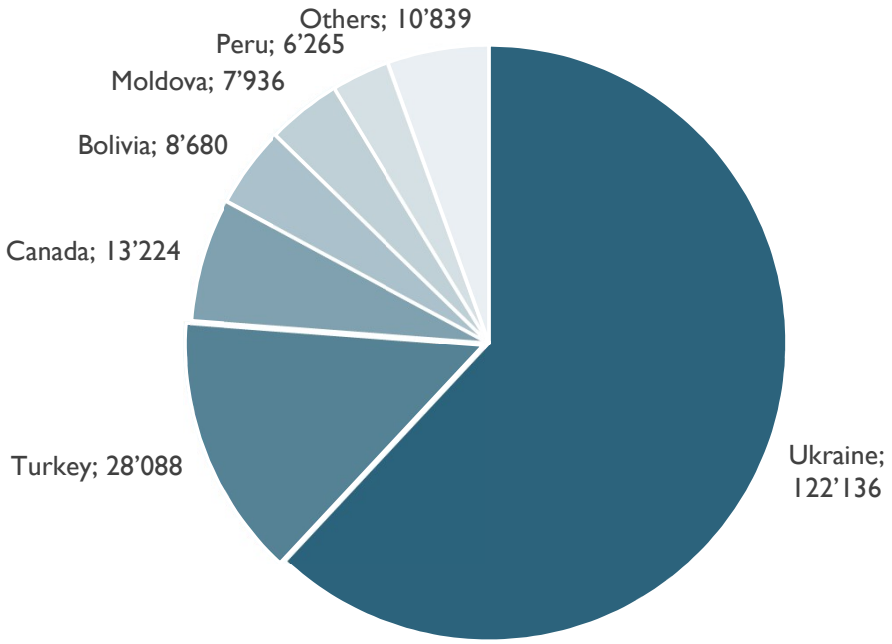
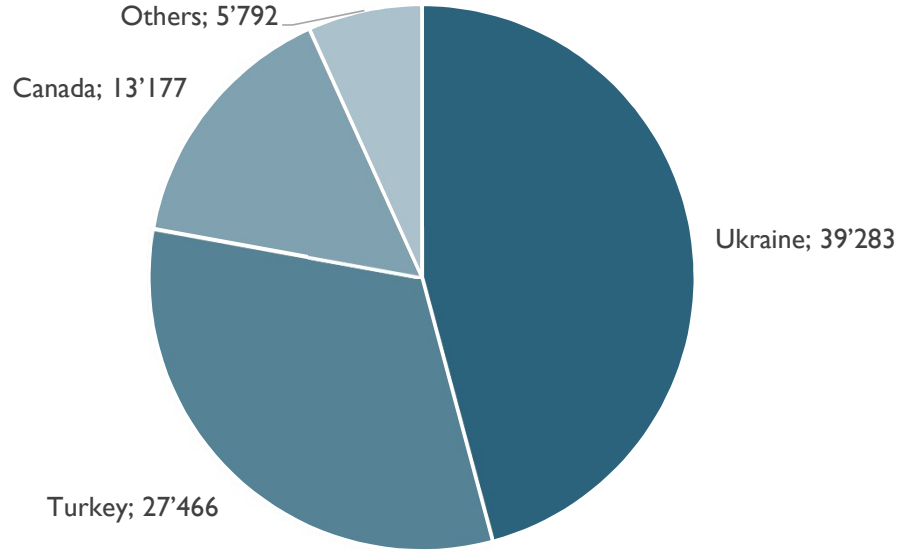
Source: TRACES/European Commission 2021

EU Organic Imports (MT) 2020
CEREALS

Cereals (feed and other)
Total: 197,167 MT



Wheat (feed and other) in MT
Total: 85,717 MT



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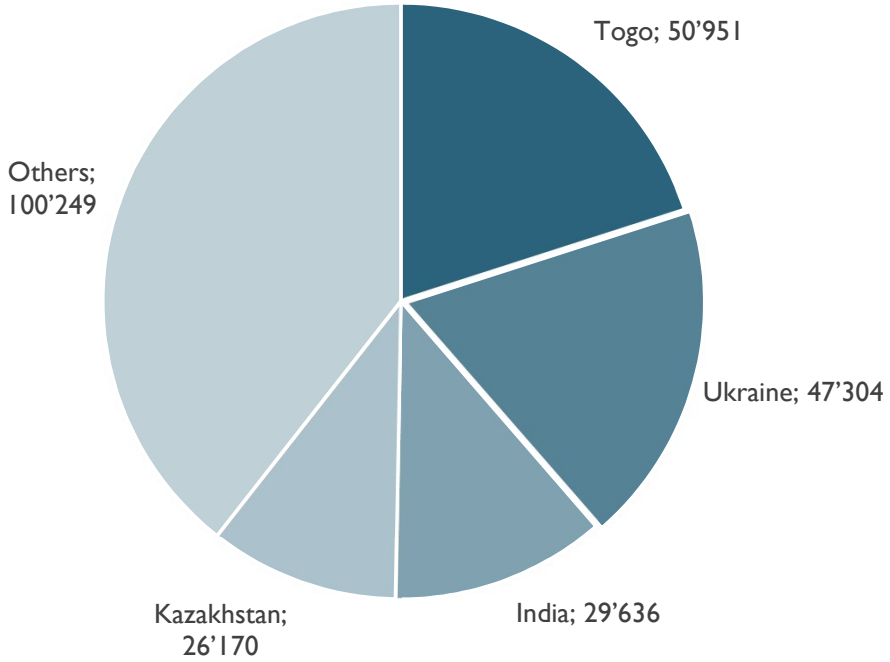
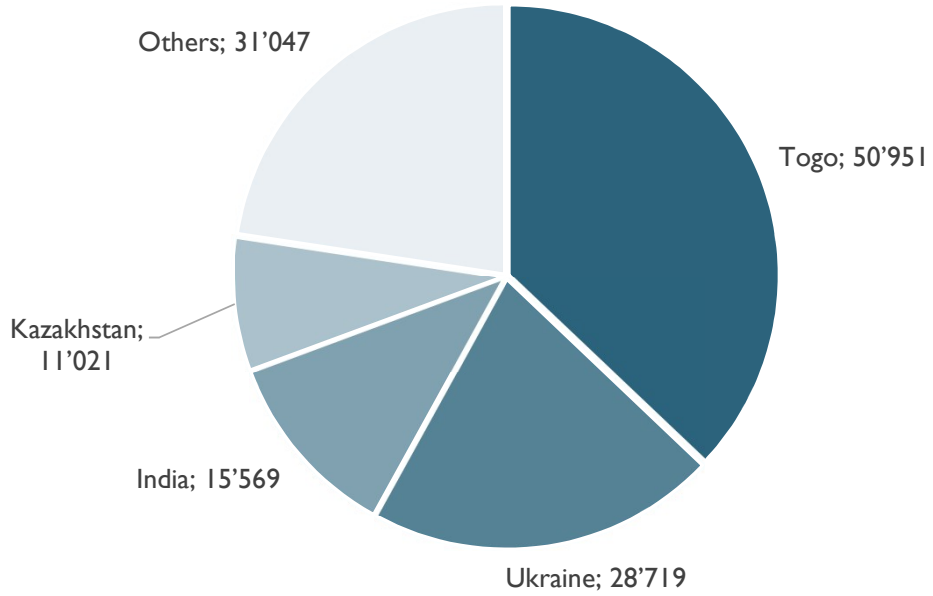
Source: TRACES/European Commission 2021

EU Organic imports (MT)
OILSEEDS

Oilseeds
Total: 254,311 MT



Soybeans in MT
Total: 137,308 MT



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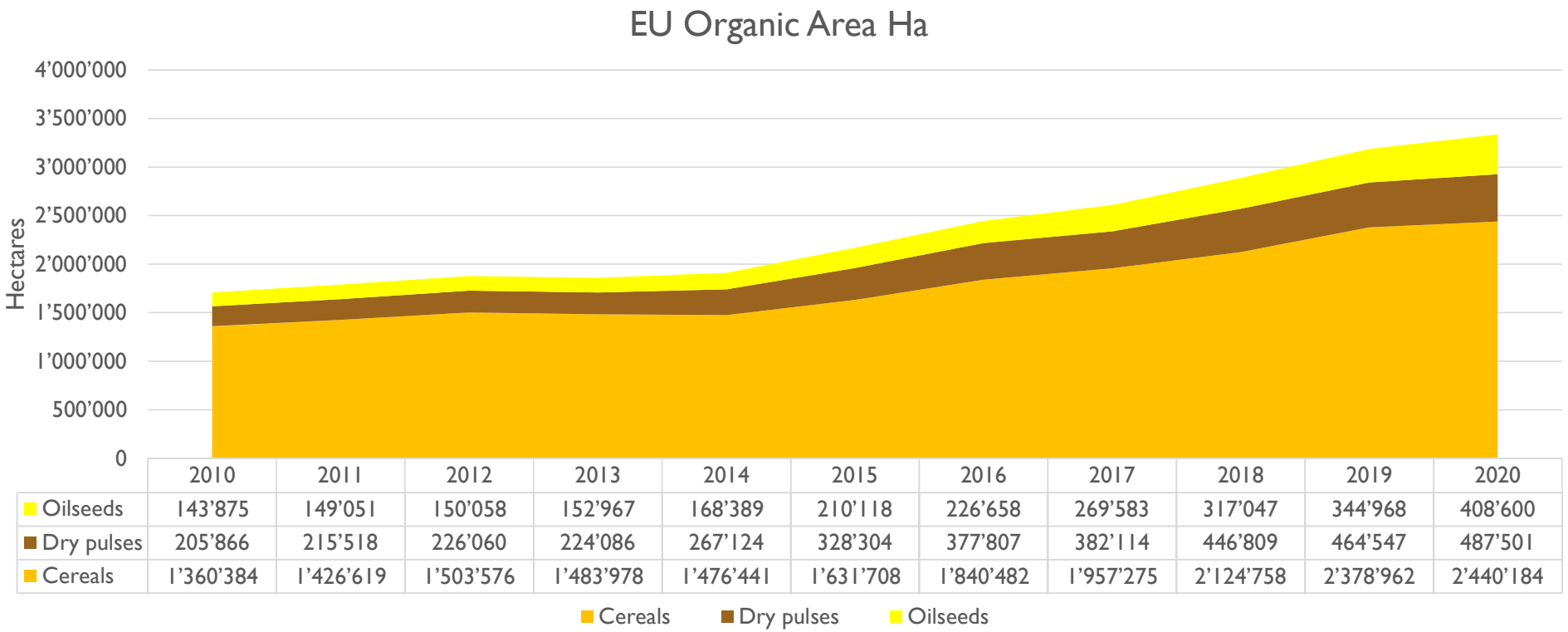
Source: TRACES/European Commission 2021

Development of EU organic area for cereals, dry pulses and oilseeds 2011-2020



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Oilseeds	143'875	149'051	150'058	152'967	168'389	210'118	226'658	269'583	317'047	344'968	408'600
Dry pulses	205'866	215'518	226'060	224'086	267'124	328'304	377'807	382'114	446'809	464'547	487'501
Cereals	1'360'384	1'426'619	1'503'576	1'483'978	1'476'441	1'631'708	1'840'482	1'957'275	2'124'758	2'378'962	2'440'184

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Source: Eurostat, national data sources, compiled by FiBL

Assumptions for the calculation of EU organic feedstuff production (MT)

PLEASE NOTE THAT DUE TO MANY FACTORS THE ACTUAL FEEDSTUFF PRODUCTION MAY DIFFER FROM THE DATA PRESENTED HERE. MORE INFORMATION IS NEEDED ON ORGANIC FEED PRODUCTION IN THE EU.

- Barley: Assumption that 2/3 of the barley production in the EU is for feed
- Rye: Assumption that 30% of the rye production in the EU is for feed
- Soy: Assumption that 80% of the soy production in the EU is for feed
- Sunflowers: Assumption that 90% of the sunflower seed production in the EU is for feed
- As no data on organic oilcakes was available for EU MS, all oilseed production data were «converted» into oilcake, assuming that 1 MT of oilseeds corresponded to 0.67 MT of oilcake.
- Wheat: Assumption that 40% of the wheat production in the EU is for feed
- Grain maize, triticale, most oilseeds and all dry pulses: Assumption that 100 % is for feed
- Assumption that all cereals from conversion areas are for feed

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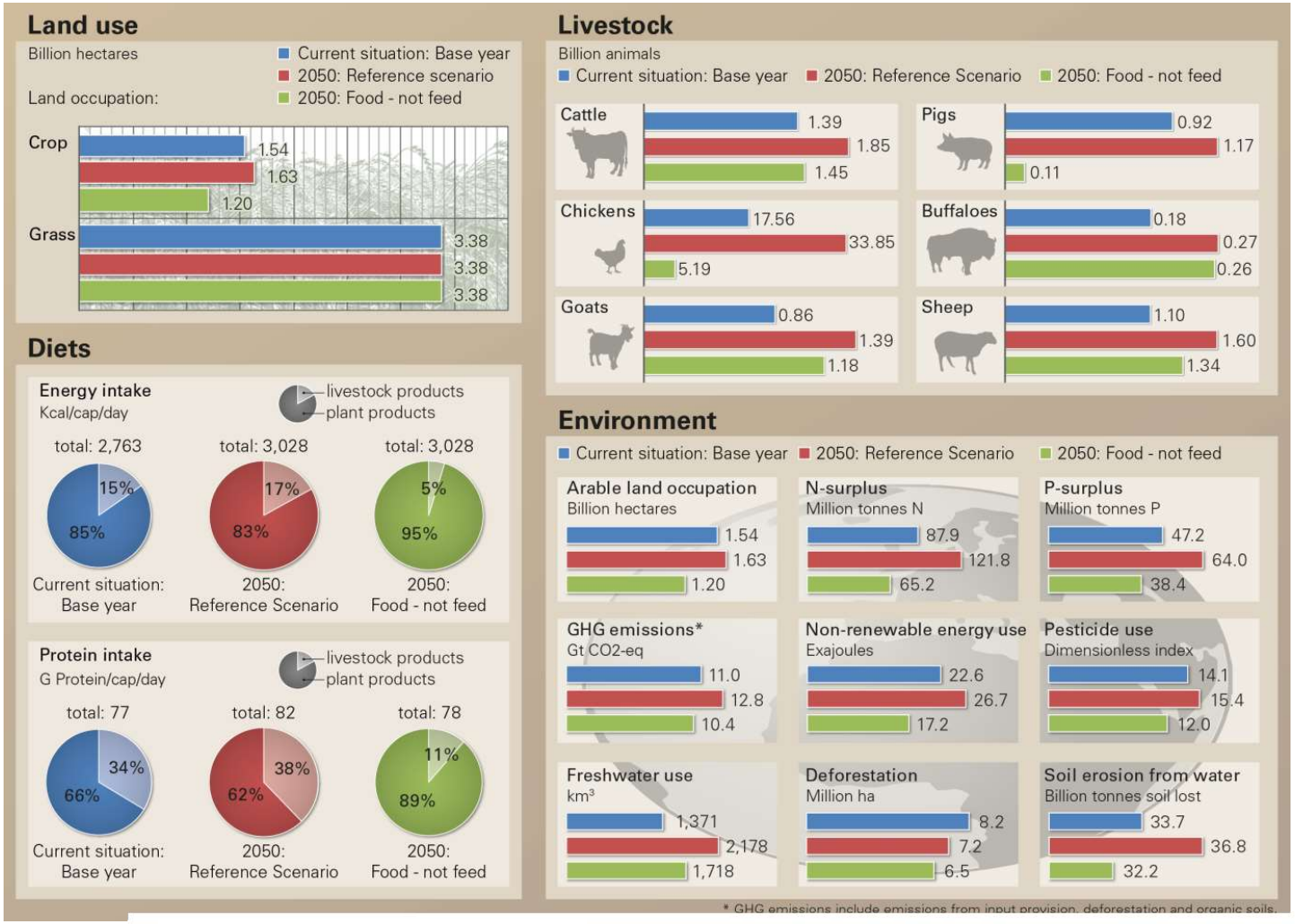

SCHADER ET AL., 2015,
J Royal Soc Interface

Impacts of feeding less food-competing feedstuffs to livestock on global food system sustainability

ARTICLE OPEN
DOI: 10.1038/s41467-017-01410-w

Strategies for feeding the world more sustainably with organic agriculture

Adrian Muller[1,2], Christian Schader[1], Nadia El-Hage Scialabba[3], Judith Brüggemann[1], Anne Isensee[1], Karl-Heinz Erb[4], Pete Smith[5], Peter Klocke[1,6], Florian Leiber[1], Matthias Stolze[1] & Urs Niggli[1]

% Wastage reduction	% Reduction in food-competing feed	Climate change impact on yields: Zero — % Organic 0	20	40	60	80	100	Medium — % Organic 0	20	40	60	80	100	High — % Organic 0	20	40	60	80	100
0	0	0	5	10	17	25	33	21	26	33	40	47	57	46	50	54	58	64	71
	50	−16	−12	−8	−4	2	8	2	7	10	16	22	27	25	26	29	32	35	40
	100	−26	−24	−20	−16	−12	−8	−9	−6	−3	1	5	9	12	13	14	15	17	20
25	0	−6	−1	5	10	18	26	14	20	25	32	40	48	39	42	45	50	56	61
	50	−22	−18	−13	−8	−4	−2	−4	0	5	9	14	21	18	20	22	25	27	32
	100	−30	−27	−25	−21	−17	−13	−14	−11	−8	−5	−1	4	6	7	8	8	10	13
50	0	−11	−7	−1	5	11	20	8	13	18	25	32	40	30	34	38	42	47	53
	50	−25	−23	−19	−14	−9	−4	−9	−6	−2	3	8	14	10	12	15	17	21	25
	100	−35	−32	−29	−25	−22	−18	−19	−17	−13	−10	−7	−3	−1	0	1	3	4	7

Fig. 2 Cropland area change. Percentage change in cropland areas with respect to the reference scenario. Scenarios differ in: organic shares (0–100%), impacts of climate change on yields (low, medium, high), food-competing feed reductions (0, 50, 100% reduced from the levels in the reference scenario), and wastage reduction (0, 25, 50% compared to the reference scenario). Colour code for comparison to the reference scenario value (i.e. 0% organic agriculture, no changes in livestock feed and food waste, dotted grey): > +5%: red, < −5% blue, between −5% and +5% yellow; in the reference scenario, cropland areas are 6% higher than in the baseline today

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Journal of Cleaner Production 228 (2019) 86–93

Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro

Slurry-grown duckweed (*Spirodela polyrhiza*) as a means to recycle nitrogen into feed for rainbow trout fry

Timo Stadtlander*, Svenja Förster, Dennis Rosskothen, Florian Leiber

Research Institute of Organic Agriculture, Department of Livestock Sciences, Ackerstr. 113, 5070, Frick, Switzerland

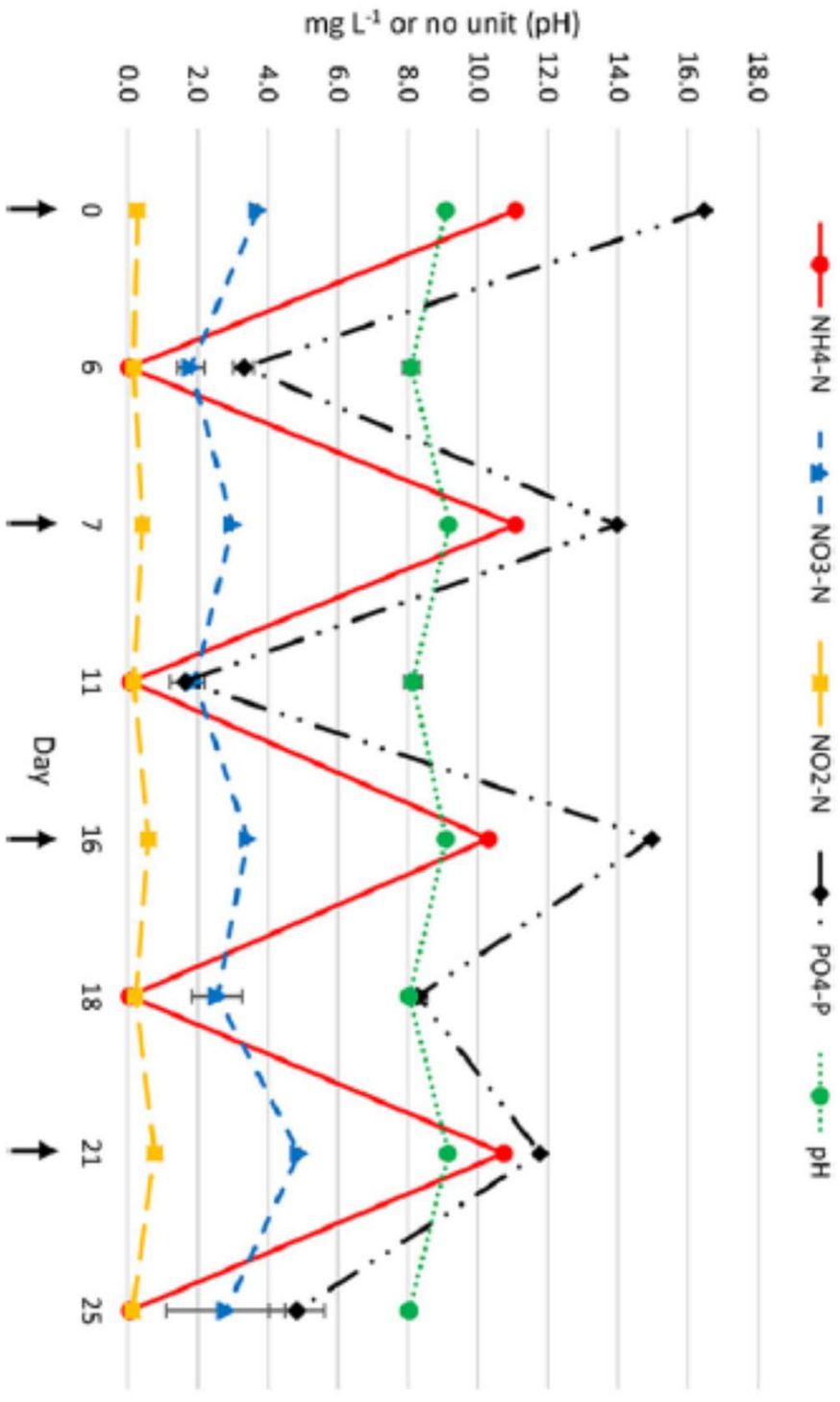

Fig. 1. Development of NH_4-N, NO_3-N, NO_2-N and PO_4-P concentrations and pH for *L. punctata* cultured on DS (diluted slurry) over 25 days. Values are mean of N = 3 ± SD. Arrows indicate measurements immediately after replacement with fresh substrate.

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insects

MDPI

Article

Genotype-by-Diet Interactions for Larval Performance and Body Composition Traits in the Black Soldier Fly, *Hermetia illucens*

Christoph Sandrock [1,*], Simon Leupi [1,2], Jens Wohlfahrt [1], Cengiz Kaya [1,3], Maike Heuel [2], Melissa Terranova [4], Wolf U. Blanckenhorn [3], Wilhelm Windisch [5], Michael Kreuzer [2] and Florian Leiber [1]

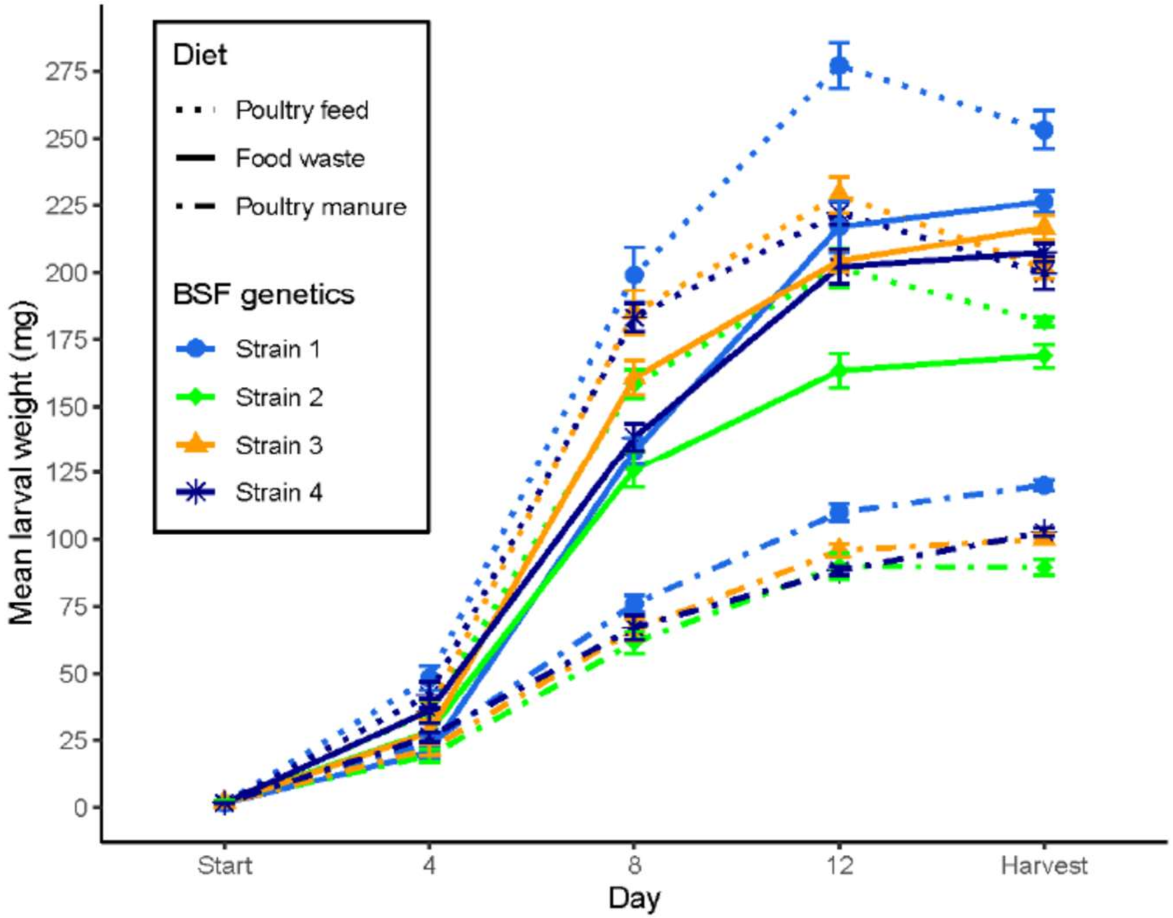


Figure 2. Larval growth dynamics of individual black soldier fly strains on different diets over time. Colours identifying strains match those in Figure 1, and error bars depict standard deviations across replicates. Depending on the occurrence of the first prepupae, harvest dates for individual combinations varied between days 14 and 17 (see main text). For a statistical summary, see Supplementary Tables S4–S6.

Protein-conversion efficiency in a low-input dairy system

Journal of Dairy Research (2015) **82** 272–278. © *Proprietors of Journal of Dairy Research 2015* 272
doi:10.1017/S0022029915000205

Concentrate reduction and sequential roughage offer to dairy cows: effects on milk protein yield, protein efficiency and milk quality

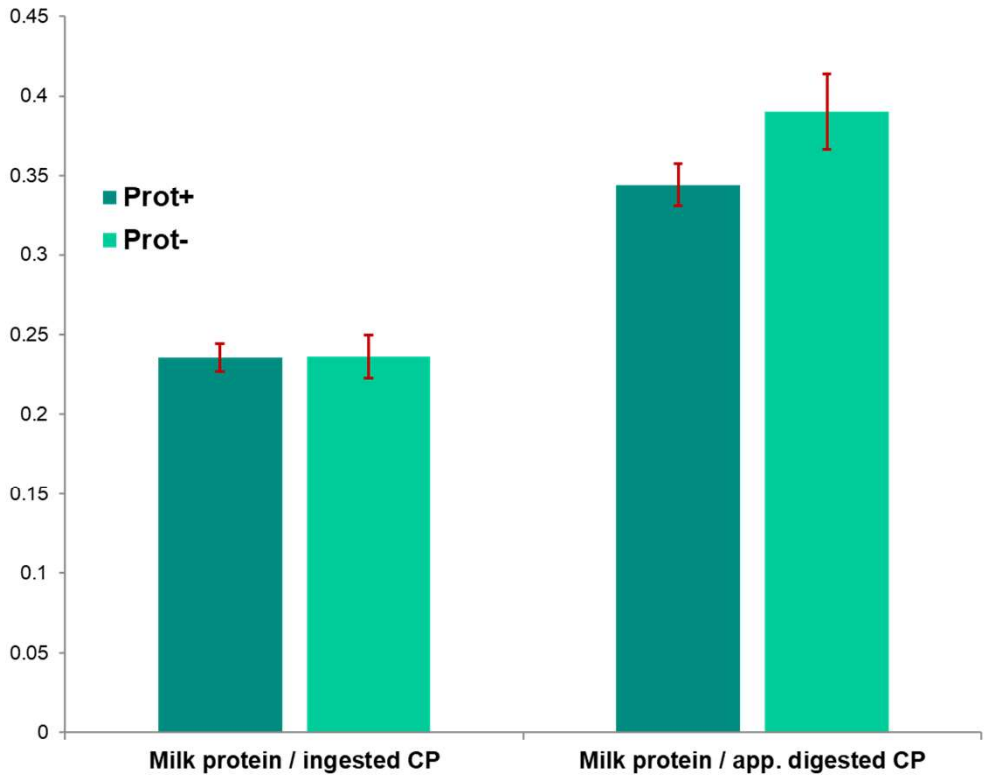
Florian Leiber*, Katharina Dorn, Johanna K. Probst, Anne Isensee, Nick Ackermann, Anton Kuhn and Anet Spengler Neff

Departement of Livestock Science, Research Institute of Organic Agriculture (FiBL), Ackerstrasse 113, CH-5070 Frick, Switzerland

Prot+ 2.4 kg/day of protein concentrate (30%)
Prot- zero concentrate

All cows TMR of grass-silage maize-silage and hay *ad libitum*

Resultat «Schwand-Experiment»: Proteineffizienz



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Organic agriculture in Europe: Key data 2020

- As of the end of 2020, 17.1 million hectares of agricultural land in Europe (European Union: 14.9 million hectares) were managed organically by almost 420'000 producers (European Union: almost 350'000).
- In Europe, 3.4 percent of the agricultural area was organic (European Union: 9.2 percent).
- Organic farmland has increased by over 0.7 million hectares compared to 2019.
- The countries with the largest organic agricultural areas were France (2.5 million hectares), Spain (2.4 million hectares) and Italy (2.1 million hectares).
- In 15 countries, at least 10 percent of the farmland was organic: Liechtenstein had the lead (41.6 percent), followed by Austria (26.5 percent) and Estonia (22.4 percent).
- Retail sales of organic products totalled 52 billion euros in 2020 (European Union: 44.8 billion euros), an increase of 15 percent compared to 2020.
- The largest market for organic products in 2020 was Germany, with retail sales of 15.0 billion euros, followed by France (12.7 billion euros) and Italy (3.9 billion euros)
- In Europe, 46 countries have legislation on organic agriculture.

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Source: FiBL survey 2022, based on national sources and Eurostat. 16