

MUSHROOM FARMING IN UKRAINE

By Paulette Baumgartl

Despite the challenges of war in Ukraine, this world leader in food production is advancing rapidly with increased production capacity, poised to deliver quality mushrooms to export markets.



Commercial mushroom growing in eastern Europe is a relatively new industry, with consumption per capita still low. However, before the escalation of the war in Ukraine, production of mushrooms in many of the former Soviet countries was trending upwards. This growth has mostly been driven by an increase in local consumption.

Attending the recent Australian Mushroom Growers Conference, Ukrainian mushroom expert Maksym Yenchenko from the UMDIS¹, with his colleague Inna Ustylovska, showcased the Ukrainian mushroom industry in a presentation that spanned horticulture and geopolitics.

A growing industry - mushroom production and consumption in Ukraine

Traditionally, Ukraine and other eastern European countries have consumed considerably fewer mushrooms than in Western Europe or Australia (see Table 1). However, increased local interest and export demand mean there could be a bright future ahead for Ukrainian growers.

Ukraine knows how to grow and export food. It is the second biggest country in Europe with a population of 44 million people and is well known for its agricultural exports. It provides half of the world's sunflower oil

¹ <https://www.umdiss.org/umdis-mushroom-informational-agency/>

Each country in Europe has its trends, challenges, and opportunities. Countries like Germany, France and the Netherlands are enjoying growing consumption of mushrooms as plant-based diets are becoming more popular, but despite the high value placed on provenance (preferably locally grown), labour shortages and increased production costs will see this demand met with imports from the east.

Country (population, million)	Estimated production 2021 (tonnes)	Estimated annual consumption (kg/per person)
Ukraine (44)	65,000	1.5
Georgia (3.7)	2,000	0.6
Armenia (2.9)	3,000	<1.0
Azerbaijan (7)	3,500	0.3
Uzbekistan (34)	17,000	0.2
Kazakhstan (19)	2,500	0.3
Moldova (2.6)	2,500	1.0
Poland (38)	370,000	1.5-2
Russia (143)	115,000	-
Geographical Europe (including Poland, Netherlands, Germany, Spain, France, Russia and Ukraine)	1,500,000	2.0
Australia (25.7)	68,000	3.5

Table 1. Production and consumption of mushrooms across Europe.

(5 million tonnes in 2021/22²), 10% of its wheat, 12% of the corn, and 17% of the barely. Even Ukraine's flag is a symbolic representation of agriculture, with blue skies over golden fields.

So where do mushrooms fit it? Clearly compost raw materials are not a problem for Ukraine, and despite consuming half the amount than that of Australians per year, Ukrainian growers produce a comparable number of mushrooms across 300 farms. Mr Yenchenko noted that most of these farms are small, with a simple growing room behind the house. About 50 commercial scale farms are producing most of the mushrooms. Again, comparable to Australia.

The first mushroom farms emerged in 2004, and the industry has grown rapidly, recording 50,000 tonnes in 2015. Mushroom entrepreneurs, attracted by the quick return on investments, purchased second-hand equipment from the Netherlands. However, production has now stalled as the nation waits for the war to end and hopes for entry into the European Union with its huge (potential) market.

And with a farm gate price currently at just over US \$1/kg, importers are keen.



Culture meets horticulture: interpretive dance and art auction at the Ukraine Mushroom Days.

Despite these low prices, significant barriers to exporting remain, and it is not just borders. War, obviously, and everything it brings, is wreaking havoc. High interest rates for farm investments coupled with no government support mean that farmers cannot expand and invest

² <https://www.reuters.com/markets/europe/ukraine-202223-sunoiil-output-seen-35-49-mln-t-analyst-2022-09-24/>

in the infrastructure required for export. A single grower needs to produce 15 tonnes to fill a truck, plus have access to cold storage and the specialised packaging required for transport.

Mr Yenchenko is optimistic that many of these barriers can be overcome if and when Ukraine joins the European Union.

Behind the smile and the jokes, Mr Yenchenko's images of destroyed farms, friends in exile, friends in bunkers, farmers protecting their farms, and families separated, reveal the stark and sobering reality of war.

Mr Yenchenko and his team at the UMDIS are determined to keep progressing the mushroom industry. They are using this time to support growers and work on translations of important mushroom growing literature to ensure that once the war ends, mushroom growers are ready and well-prepared for the opportunities that are waiting.

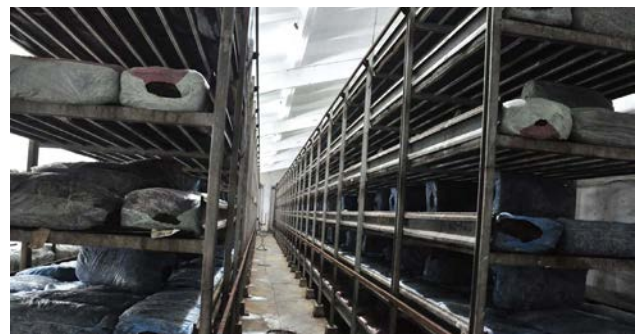
In a further nod to a brighter future, plans are already afoot for the 2023 Mushroom Days. This key industry event (the third largest mushroom expo in the world, attended by 400 people from 20 countries) has endured a forced hiatus in 2022, but Mr Yenchenko welcomes everyone to the 2023 expo, which, he defiantly hopes, will be held in Crimea.

The diversity of farms is high, from a simple growing room in the back yard, to large farms with 36 rooms, and Dutch style farms, increasingly covered in solar panels. All mushrooms are hand harvested for the fresh market. Phase III compost is now used in 80% of the farms, a figure that has doubled in the last few years, as growers adopt more advanced methods.

Ukraine has six main compost yards (now down to five as one has been destroyed), with the Belgian company *Agaris* responsible for more than 70% of production.



Oldest compost yard in Ukraine. Composts are typically made from straw and chicken manure, both present in abundance



Most growers follow the Polish method of growing, where the mushrooms are produced from Phase III blocks



Ukraine's oldest farm with 36 rooms produces 100t/week and is the biggest mushroom farm in Ukraine



Farms are starting to install solar panels to keep energy prices down



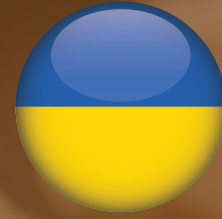
When war hits and only local food is available

The reality of war: A destroyed mushroom farm.

Australia



Ukraine



3.5kg
person/year

CONSUMPTION

1.5kg
person/year

68,000
tonnes

PRODUCTION
MUSHROOMS

65,000
tonnes

Approx.

80%

USE OF PHASE III
COMPOST

Approx.

80%

0.01%

EXPORT

0.02%

40

NUMBER OF
COMMERCIAL
SCALE FARMS

50

1,700
tonnes

MUSHROOMS SENT
FOR PROCESSING

2,000
tonnes

AU **\$6.30**
/kg

FARM GATE PRICES

\$1.70 AU
/kg

AU **\$1100**
/week

PICKERS WAGES

\$170 AU
/week