

REFRIGERATION
AND SYSTEM
TECHNOLOGY
SINCE

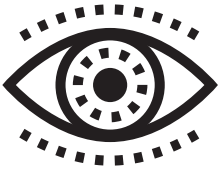
2006



MUSHROOM GROWING CONTAINER

GROWY 40





Our Vision

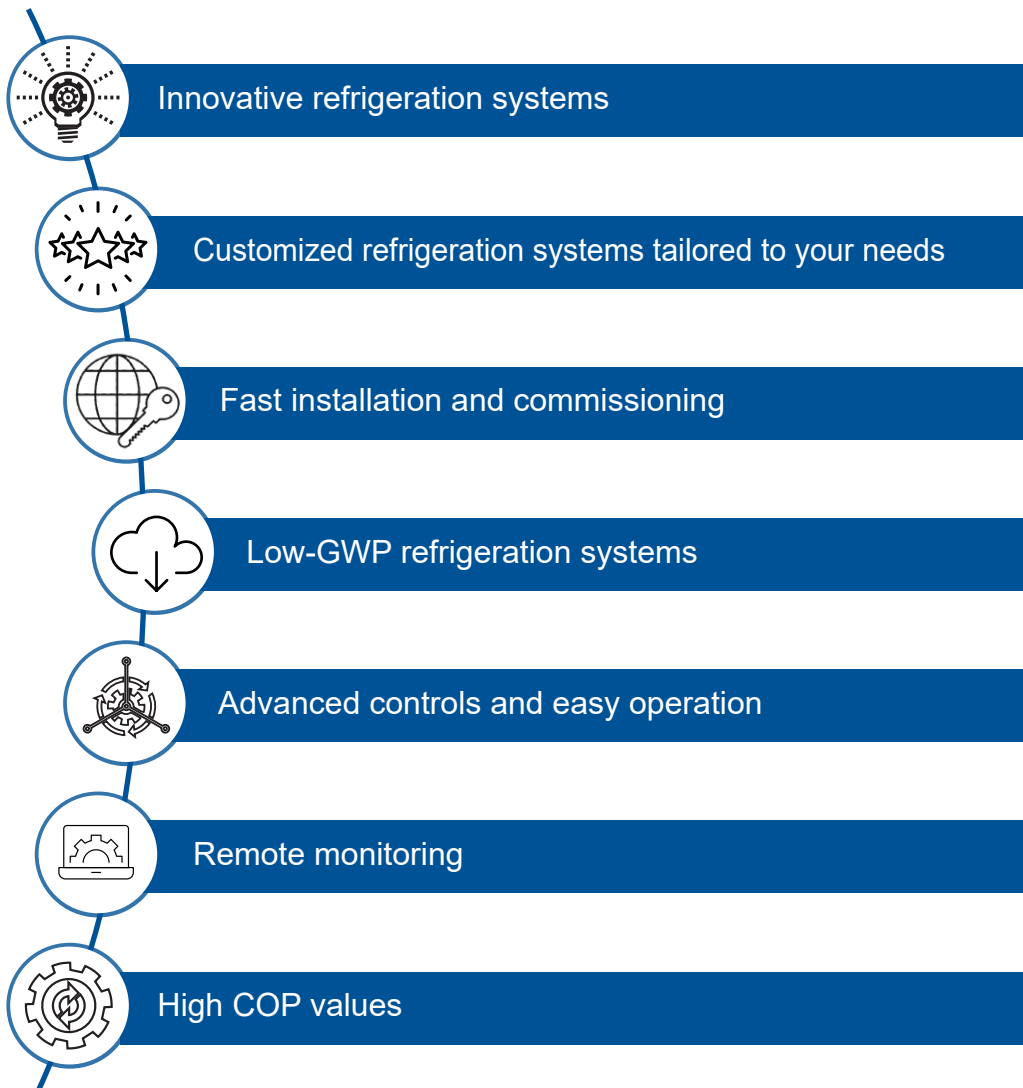
We develop innovative refrigeration systems optimized to meet our customers' needs. In doing so, we promote the use of natural refrigerants, global mobility powered by hydrogen, and mushroom cultivation using modern climate-controlled containers.



Our Mission

We develop innovative refrigeration and system technology optimized to meet our customers' needs.

Benefits at a Glance:



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The Mushroom Cultivation Revolution

Mushroom cultivation has undergone a transformative revolution, with mushroom-growing enthusiasts and commercial growers increasingly turning to mushroom cultivation containers to unlock the full potential of their cultivation operations.



Mushroom cultivation containers take the cultivation process to a new level of efficiency, yield, and versatility. The main factors responsible for this include:

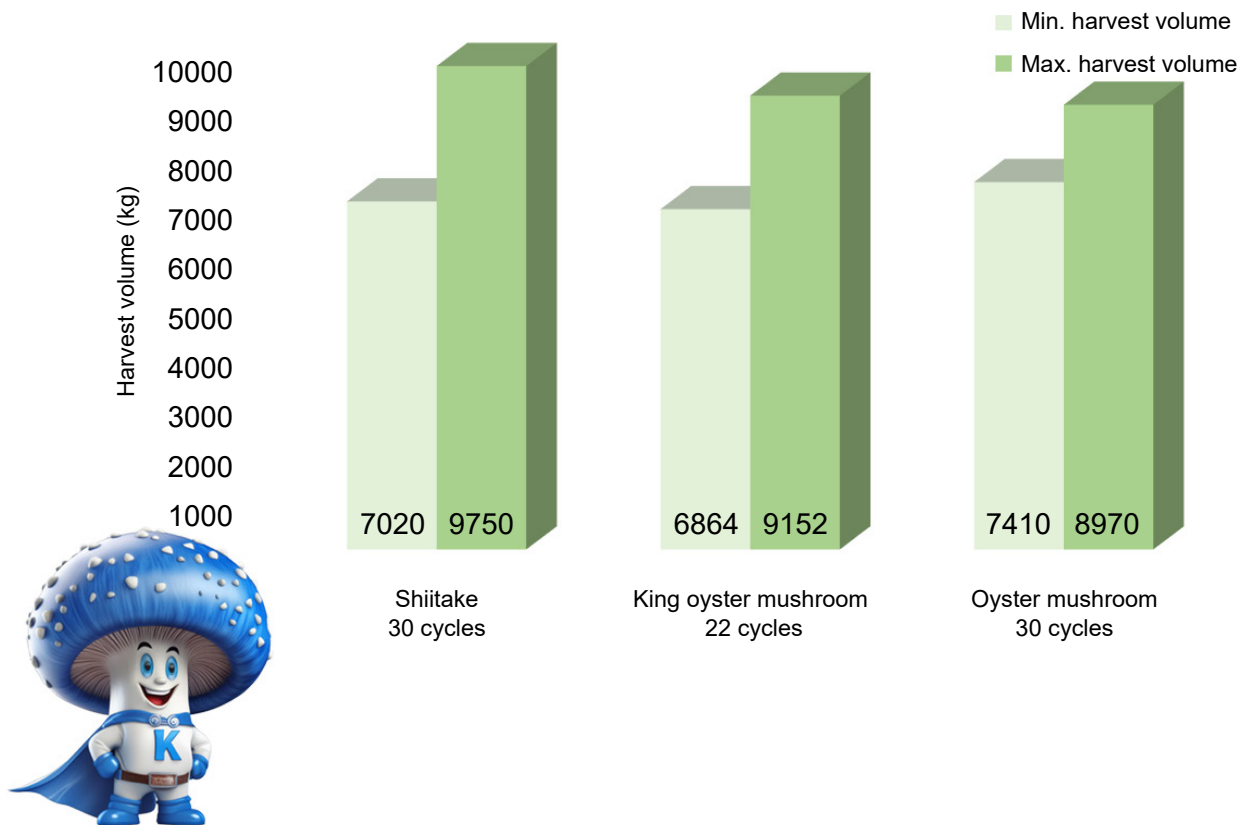
- Optimal environmental control
- Year-round cultivation
- Efficient use of space
- Predictable harvests
- Reduced labor requirements
- Easy interior cleaning
- Easy scalability

KUSTEC climate-controlled containers offer three additional benefits:

- **Environmental friendliness:** *KUSTEC* climate-controlled containers use low-GWP refrigerants (R32 - GWP of 675, compared with e.g. R404A - GWP of 3,922). This helps reduce CO₂ emissions.
- **Sustainability:** *KUSTEC* climate-controlled containers are SecondLife refrigerated containers upgraded with new *KUSTEC* climate technology to create the perfect mushroom cultivation container. This upcycling saves valuable resources, reduces acquisition costs, and extends the container's circular life cycle by many valuable years. Compared with a new 40-foot refrigerated container, approximately 4,000 kg of new steel production is avoided.
- **Proven *KUSTEC* technology:** Since 2006, we have implemented sophisticated refrigeration solutions worldwide in more than 2,000 projects, including projects in the automotive, energy, and food-production sectors.

Container-based mushroom cultivation enables more efficient and consistent production of edible mushrooms compared with conventional outdoor cultivation. Precise control of environmental conditions leads to higher yields, regardless of seasonal fluctuations. In short, this means larger harvests with less labor.

Annual harvest volume in kg based on the substrate quantity per cycle (1300kg)



Market Forecast Through 2030

Market Size and Growth Rate

The global edible mushroom market is expected to reach USD 115.8 billion by 2030, with a compound annual growth rate (CAGR) of 9.7% over the forecast period.^{1,2} Europe is expected to grow at a CAGR of 9.52%.³

Demand and Supply

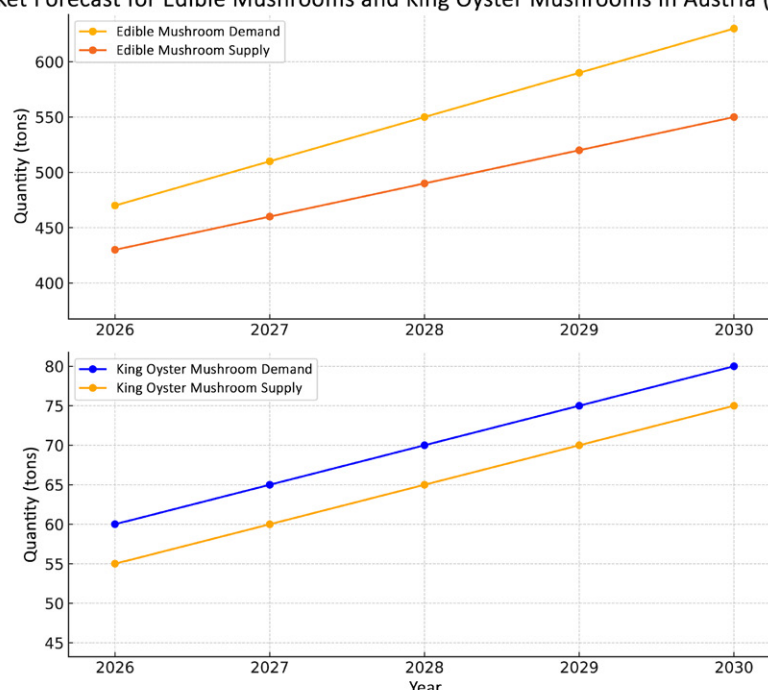
Demand for specialty mushrooms is being driven primarily by the growing trend toward plant-based and health-conscious diets. Mushroom consumption in food products, in particular, is expected to increase because of mushrooms' nutrient-rich and low-calorie properties. Fresh mushrooms are expected to remain the dominant form, with an annual growth rate of 8.8%, as they are preferred by the food-service industry and private households.^{2,4}

Price Trends

Due to rising demand and growing awareness of the health benefits of mushrooms, a moderate increase in mushroom prices is expected. Europe will play a key role in the mushroom market, both as a consumer and as an importer.⁵

Market Forecast for Austria

Market Forecast for Edible Mushrooms and King Oyster Mushrooms in Austria (2026- 2030)



The market forecast through 2030 for specialty mushrooms—and king oyster mushrooms in particular—in Austria indicates continuous growth, driven by “health-conscious trends and sustainable nutrition.”

¹ Source: <https://www.grandviewresearch.com/industry-analysis/mushroom-market>

² Source: <https://www.grandviewresearch.com/press-release/global-mushroom-market>

³ Source: <https://straitresearch.com/report/mushroom-market>

⁴ Source: <https://www.gminsights.com/industry-analysis/mushroom-market>

⁵ Source: <https://www.marketdataforecast.com/market-reports/edible-mushroom-market>

Many edible mushroom varieties are highly suitable for cultivation in a climate-controlled container. Here you will find the ideal growing conditions for some of the most popular varieties cultivated in mycelium bags. Mycelium or substrate bags can be produced in-house or purchased from a substrate supplier of your choice.

Oyster Mushrooms (*Pleurotus ostreatus*)

Also known as the veal mushroom, it stands out with its delicate, mild flavor and velvety texture. It is a true all-rounder in the kitchen and is perfect for frying, creamy sauces, ragouts, and side dishes.

Its quick preparation and delicate flavor make it one of the most popular and versatile edible mushrooms of all.

Fruiting Phase:

Once the mycelium has fully colonized the substrate, the fruiting phase begins. Set the temperature to approximately 59–64°F (15–18°C) and the relative humidity to 85–90%. An adequate light source promotes the formation of fruiting bodies.

Harvest:

Oyster mushrooms can be harvested when the caps reach a diameter of approximately 2–4 in. (5–10 cm). This usually occurs after 2–3 weeks. Carefully cut the mushrooms at the base of the stem to avoid damaging the mycelium.



Yellow Oyster Mushrooms (*Pleurotus citrinopileatus*)

Its name reveals its refreshing lemony flavor, accompanied by a subtle nutty depth. When cooked, the bright acidity develops into a fuller flavor reminiscent of cashews. It adds an exquisite, slightly exotic note to fish, white meat, and pasta, practically melting in the mouth while its vivid color is a feast for the eyes.

Fruiting Phase:

Once the mycelium has fully colonized the substrate, the fruiting phase begins. Set the temperature to approximately 64–72°F (18–22°C) and the relative humidity to approximately 85–90%. An adequate light source promotes the formation of fruiting bodies.

Harvest:

Yellow oyster mushrooms can be harvested when the caps reach a diameter of approximately 1–2 in. (3–5 cm). This usually occurs after 2–3 weeks. Carefully cut the mushrooms at the base of the stem to avoid damaging the mycelium.



Popular Mushroom Varieties



King Oyster Mushrooms (*Pleurotus eryngii*)

With its delicate, nutty flavor and firm, meat-like texture, it is considered the “steak” of mushrooms. Its firm stem does not fall apart during cooking and is excellent for frying and grilling.

As a vegetarian alternative to scallops or fillet steak, it is a culinary highlight. It also impresses with its exceptionally long shelf life and versatility.

Fruiting Phase:

Once the mycelium has fully colonized the substrate, the fruiting phase begins. Set the temperature to approximately 54–64°F (12–18°C) and the relative humidity to 85–90%. This promotes the formation of mushroom caps.

Harvest:

King oyster mushrooms can be harvested when the caps have fully opened. This usually occurs after 3–4 weeks.



Shiitake (*Lentinula edodes*)

A specialty mushroom with a rich, savory umami flavor and a pleasantly firm texture. Its rich aromas enhance Asian dishes, soups, and sauces in particular, making it an excellent meat alternative. As a medicinal mushroom, it is valued for its health-promoting properties and for supporting the immune system—a benefit for both cuisine and well-being.

Fruiting Phase:

Once the mycelium has fully colonized the substrate, the fruiting phase begins. Set the temperature to approximately 54–64°F (12–18°C) and the relative humidity to approximately 85–90%. This promotes the formation of mushroom caps.

Harvest:

Shiitake mushrooms can be harvested when the caps are fully developed. This usually occurs after 1–2 weeks.



Enoki (*Flammulina velutipes*)

Also known as winter mushroom or velvet shank, it is distinguished by its delicate, elegant shape. Its flavor is mild and subtly fruity, but its true strength lies in its crisp texture, which it retains even when cooked briefly. It is an exquisite, firm-textured addition to soups and salads, enhances stir-fried dishes, and serves as an attractive highlight in modern cuisine.



Fruiting Phase:

Once the mycelium has fully colonized the substrate, the fruiting phase begins. Set the temperature to approximately 50–59°F (10–15°C) and the relative humidity to 85–90%. An adequate light source, approximately 12 hours per day, promotes the formation of fruiting bodies.

Harvest:

Enoki mushrooms can be harvested when the stems reach a length of 4–6 in. (10–15 cm) and the caps are still small and compact. This usually occurs after 3–4 weeks.

Lion's Mane (*Hericium erinaceus*)

A visually fascinating mushroom with a delicate flavor reminiscent of lobster or veal. Its tender, fibrous texture makes it a unique gourmet experience.

Ideal for frying as a steak or as an elegant vegetarian alternative to seafood. It is also highly valued as a medicinal mushroom.



Cold Shock:

After incubation, a cold shock of 1–2 days at 39–50°F (4–10°C) can help stimulate fruiting.

Fruiting Phase:

Maintain a temperature of approximately 59–68°F (15–20°C), relative humidity of approximately 85–90%, and good air circulation to prevent CO₂ buildup, which can inhibit mushroom growth.

Harvest:

Lion's mane can be harvested when the fruiting bodies are fully developed but before they begin releasing spores. Harvest generally takes place after 2–4 weeks.

KUSTEC 40' Mushroom Growing Container *Growy 40*



The *Growy 40* is an innovative container developed specifically for efficient, high-volume mushroom cultivation.

With a length of 40 feet (12.19 m), this container provides enough space to cultivate large quantities of mushrooms while achieving maximum yields.

Thoughtful Design for Optimal Conditions

The front of the *Growy 40* is equipped with a robust refrigerated-room door. This door provides easy access to the inside of the container as well as reliable temperature control, which is essential for mushroom cultivation.



The climate-controlled room ensures that the ideal temperature is maintained consistently, optimizing mushroom quality and growth.

The *Growy 40* is also equipped with a water connection and a 230-volt power connection, enabling easy and efficient cleaning inside the container.

This simplifies maintenance and ensures that hygienic conditions in the climate-controlled room remain optimal for healthy mushroom growth.

Combining Efficiency and Quality

With the *Growy 40*, mushroom growers receive a tool that combines efficiency and quality in one product. Its generous interior space and sophisticated technology make it the ideal solution for professional growers who want to produce large quantities of mushrooms with consistently high quality.



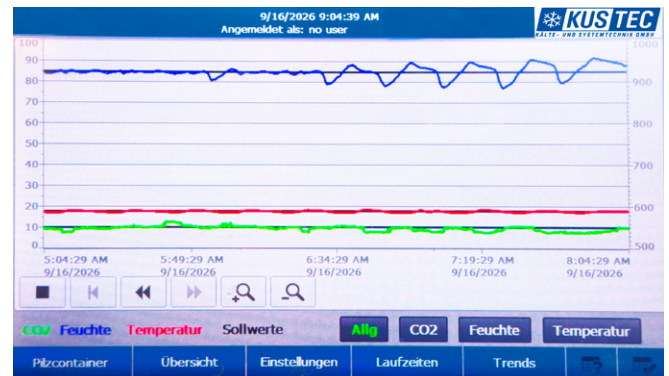
With the *Growy 40*, growers can maximize their yields while ensuring the quality of their mushrooms.

Its robust construction, advanced climate-control technology, and thoughtful design make it the ideal choice for producing large quantities of mushrooms.

Modern Climate-Control Technology for Precise Control

The controls for the **Growy 40**'s state-of-the-art climate-control technology are located next to the refrigerated-room door.

An illuminated touchscreen enables intuitive and precise control of all important parameters, such as temperature, humidity, and ventilation. Wireless remote access is also possible.



Climate Control for the Interior

This advanced technology ensures that the conditions inside the container are always optimally adapted to the needs of the mushrooms, resulting in increased productivity and improved harvest results.

The climate-control system enables:

- An **adjustable interior temperature from 8 to 25°C** (46 to 77°F), with a sensor resolution of 0.1°C
- An **adjustable CO₂ concentration from 300 to 10,000 ppm**, with a sensor resolution of 0.1 ppm
- **Adjustable indoor relative humidity up to 98%**, with a sensor resolution of 0.01%

Technical Data



Rated power: ~5 kW (3 x 400 V, 20 A)



Adjustable internal temperature: +8°C to +25°C (46 to 77°F)



Heating power: 8 kW (SCOP: 4.7)



Cooling capacity: 7.1 kW (SEER: 6.7)



Refrigerant: R32 (GWP 675)



Dimensions (L/W/H): 12.19 / 2.44 / 2.90 m



KUSTEC
Kälte- und Systemtechnik GmbH
Strassfeld 5, A-3441 Freundorf
Phone: +43 2274 44109
E-Mail: office@kustec.at
www.kustec.at

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