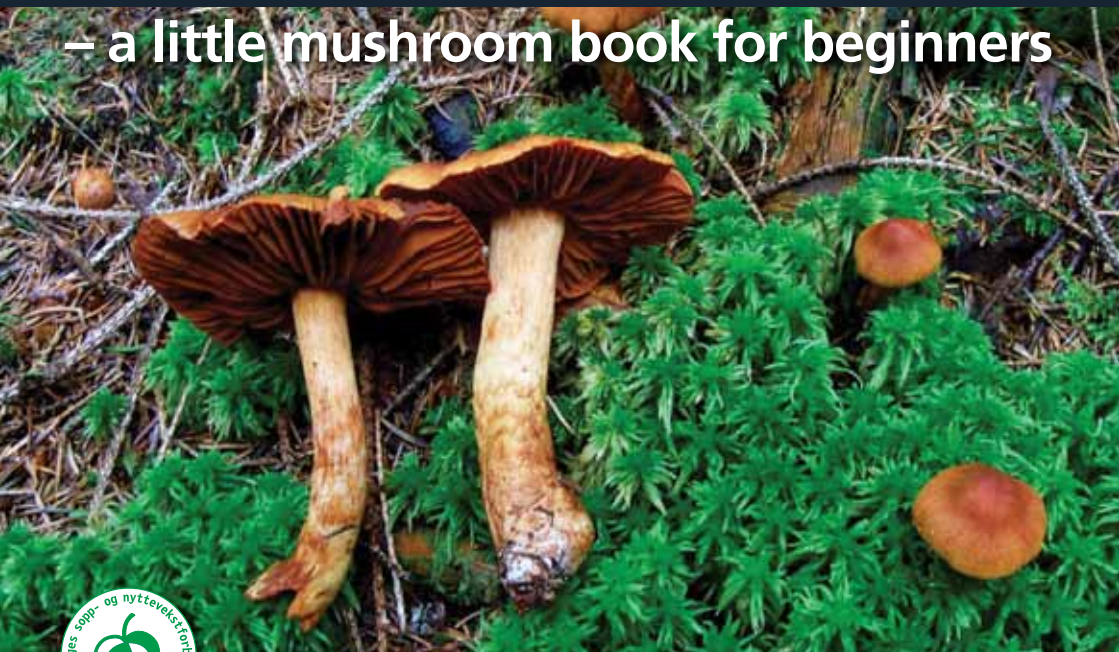




Edible mushrooms and poisonous mushrooms in Norway

– a little mushroom book for beginners



Play it safe with wild mushrooms

The culinary delicacies of the autumn woods are certainly tempting but they can be a little bit scary too. One objective of *The Norwegian Association for Mycology and Foraging* is to help you play it safe when picking mushrooms. By downloading the app *Digital soppkontroll* or visiting one of our mushroom controls, you have the best possible starting point for learning some good edible mushrooms from all the riches the woods have to offer.

You can find all the information you need about the app and our mushroom controls at Soppkontroll.no.



Good advice for playing it safe:

- As a beginner, learn a few common tasty mushrooms and leave the others alone.
- Only eat mushrooms that you are 100% sure of!
- Learn the characteristics of the most important poisonous mushrooms, see pages 12 -15.
- If in doubt, check using the app or visit a mushroom control.

Sound picking advice for a good haul:

- Use a mushroom basket or carrier with plastic boxes inside. That way you can keep the different types separate from one another and avoid them becoming crushed. Save the plastic boxes you buy fruit or salad in; they work a treat!
- Sort your mushrooms as you go along, preferably into different boxes: edible mushrooms you are completely sure of in one, and other mushrooms you want to learn more about in another.
- Clean mushrooms where you find them. Remove earth, grass, pine needles etc. using a knife and brush. Cut away sections that are worm-eaten. This way you can save time when you get home.
- Only use recent mushroom books, preferably by Norwegian authors. Translated books may lack species that are common in Norway. Old books may lack more recent information about edibility and toxicity.

Only eat mushrooms you are 100% sure of!

A few very dangerous poisonous mushrooms grow in Norway, including spiss giftslørsopp, butt giftslørsopp, grønn fluesopp og hvit fluesopp. Eating just a small piece of these mushrooms can make you seriously ill. If you have picked one of these and got them mixed in with your edible mushrooms, the mushroom controller will ask you to throw everything away – for safety's sake. Even very small pieces can cause serious poisoning. That's why sorting is so important!

The most dangerous poisonous mushrooms:

Grønn fluesopp - Death Cap
Amanita phalloides
Hvit fluesopp - Destroying Angel
Amanita virosa
Butt giftslørsopp - Fool's Webcap
Cortinarius orellanus
Spiss giftslørsopp - Deadly Webcap
Cortinarius rubellus
Flatklokkehatt - Deadly Galerina
Galerina marginata

Join in on Mushroom Day!

Mushroom Day – "soppens dag" – is arranged by The Norwegian Association for Mycology and Foraging every year on the first Sunday of September. You can find information about all our events across the country at Soppognyttevekster.no/kalender.

Please note that this leaflet is made for English speaking people in Norway. This is why we use Norwegian names as main mushroom names, in addition to scientific names and English names.

Do's and don'ts for beginners

The diversity of wild mushrooms can seem overwhelming in the beginning. Which should I pick? And which should I leave alone? A good start is to look at the underside of the mushroom.

- **Mushrooms with gills** – the underside has gills that radiate from the centre. There are many mushrooms like this (agarics) and the most poisonous mushrooms are in this group.
- **Mushrooms with tubes** – the underside has a spongy layer of thin, vertical tubes of which you see the openings. None of this group (boletes) in Norway is poisonous but a few taste downright nasty. On the other hand, some of the absolute best edible mushrooms are in this group.
- **Mushrooms with teeth** – the underside is covered with small teeth (hedgehog fungi). The pale species (white, yellow or orange) are edible and good; you can simply ignore the brown ones and the ones with hard flesh.
- **Mushrooms with ridges** – the underside has forked ridges, wrinkles or is almost smooth. Then you may have found a chanterelle or a horn of plenty mushroom!
- **Mushrooms with pores** – the underside is smooth with tiny holes or pores (polypores). A pale polypore growing on the ground is either the edible fåresopp (*Albatrellus ovinus*) or its close - not so good - relative franskrødsopp (*A. confluens*). They cannot be confused with any other species.
- **Puffballs** – can be eaten while they still are white inside. As they get older, the inside becomes gradually browner.

You can see members of the different mushroom groups on the next two pages.

Two easy rules to remember

1. Mushrooms with brown gills are seldom edible – let them be!
2. Mushrooms with white gills may be a deadly *Amanita*.
Check on page 12.



Look underneath!

The first thing to do when you want to identify a mushroom is to look underneath the cap. Then check the way in which the gills are connected to the stem, for instance growing a long way down the stem or not reaching the stem at all (free gills - characteristic of fly agarics). Colours, odour and taste can also give you important information as to what mushroom you have found.

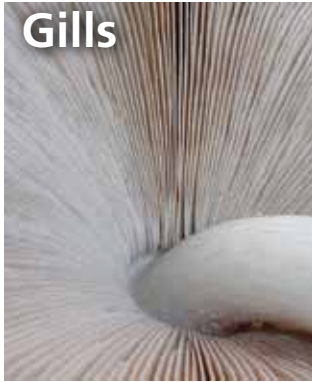


Photo: Rørdum Braathen



Photo: Inger Kristoffersen



Illustration: Inger Anne Lyebråte

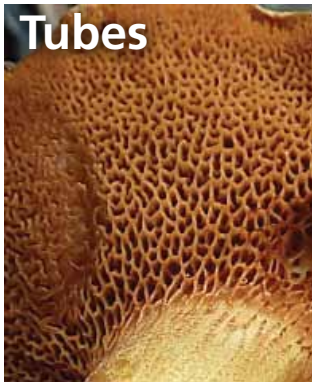


Photo: Inger Kristoffersen



Illustration: Per Mørtsel

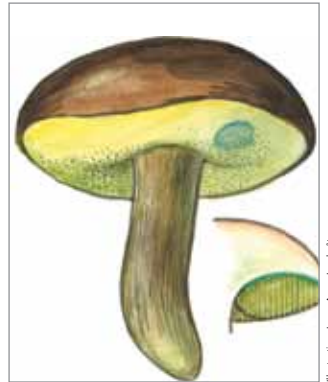


Illustration: Inger Anne Lyebråte

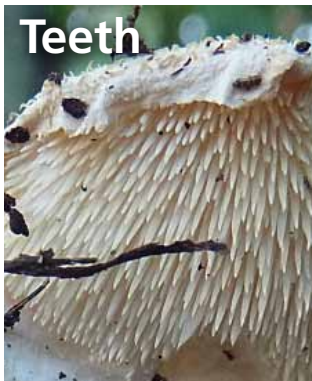


Photo: Rørdum Braathen



Photo: Achanzo CC BY-SA 4.0



Illustration: Inger Anne Lyebråte

Pores

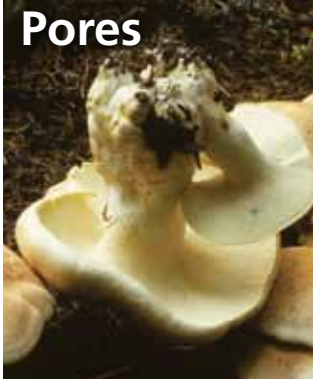


Photo: Rasmus Braathen



Photo: Dan Möller CC BY-SA # 0

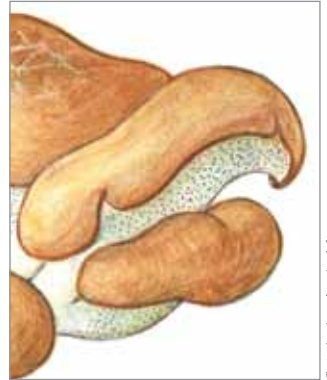


Illustration: Inger Anne Lysebråte

Ridges

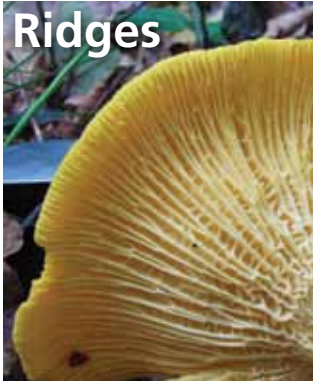


Photo: Inger Kristoffersen



Photo: Inger Kristoffersen



Illustration: Inger Anne Lysebråte

Other types

Cup mushrooms

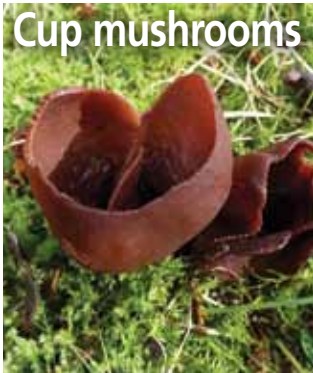


Photo: Inger Kristoffersen



Photo: Per Marstad

Puffballs

Morels



Photo: Beentree CC BY-SA 4.0

Some good, edible mushrooms

Steinsopp (Cep)

Steinsopper are large mushrooms with white tubes that become yellow or greenish-yellow with age. Three species grow in Norway. The most common is simply named Steinsopp (*Boletus edulis*) and has a brown cap with an almost white rim. The stem is barrel-shaped when young and is a pale light brown. All steinsopper have a white network on the stem. Sometimes this is very fine or present only right at the top of the stem.



Photo: Inger Kristoffersen

The picture shows the commonest of the steinsopp, which we find most often growing with spruce or birch trees. The two other species are the **Bleklodden steinsopp** (*B. reticulatus* - Summer Bolete), with a much lighter cap and growing only in broad-leaved woodland, and the **Rødbrun steinsopp** (*B. pinophilus* - Pine Bolete), which has a more reddish-brown colour on the cap and tube openings. It only grows in pinewoods. All ceps are edible.

Gallerørsopp (*Tylopilus felleus* - Bitter Bolete) is a species that can be mistaken for a steinsopp. It is not poisonous but has a bitter taste and is not suitable for food. It has a rough brown network on the stem – not white like the steinsopp – and the tubes become pink with age – not greenish yellow. If you have a young mushroom where the layer of tubes is still white, you can use the tip of your tongue to taste if it is bitter.



Photo: Turid Nakling Kristiansen

Kantarell (Chanterelle)

Kantarell (*Cantharellus cibarius*) is a medium-sized mushroom with forked ridges on the underside. It is funnel-shaped, egg yellow and has a characteristic smell a little like apricots.

Falsk kantarell (*Hygrophoropsis aurantiaca* - False Chanterelle) is a gilled mushroom that can be mistaken for a kantarell. It is not considered edible. The gills of a falsk kantarell can easily be scraped from the cap whereas the ridges of the true Kantarell cannot be scraped away without damaging the actual mushroom.



Photo: Inger Kristoffersen

Traktkantarell (Funnel Chanterelle)

Traktkantarell (*Craterellus tubaeformis*) is a small mushroom with greyish-yellow forked ridges on the underside. It is funnel-shaped with the centre of the funnel leading deep down into the stem. The cap is brown while the stem is often more yellow. Large colonies of traktkantarell can be found in nutrient-poor, mossy woods. **Gul trompetsopp** (*Craterellus lutescens* - Yellowfoot) is a very similar species that can be distinguished by its beautiful orange-yellow underside.



Photo: Inger Kristoffersen

Matpiggosopper (Edible toothed mushrooms)

The two commonest light-coloured hedgehog mushrooms are the **blek piggosopp** (*Hydnum repandum* – Wood Hedgehog) and the **rødgul piggosopp** (*Hydnum rufescens* - Terracotta Hedgehog). They are both edible. The undersides of both are densely covered with soft teeth and the flesh of both is soft too – not hard and corky like some other toothed mushrooms. They vary a good deal in size; some are small while others are large and fleshy. Often growing in groups, they can be found quite late in the season.



Photo: Inger Kristoffersen

Blek piggosopp (*Hydnum repandum* – Wood Hedgehog)

Fåresopp (Sheep Polypore)

Fåresopp (*Albatrellus ovinus*) is a large mushroom with pores. It has an irregular, domed cap in shades from white to grey-brown. The layer of pores is thin and white but becomes greenish-yellow if you scrape it. It has a short stem, often placed to one side. Fåresopp can be found in older spruce woods. It turns lemon yellow when cooked. **Franskrødsopp** (*Albatrellus confluens*) is a similar mushroom, also edible, but bitter. Franskrødsopp does not turn greenish-yellow if you scrape the layer of pores on the underside. Nor does it turn yellow when cooked.



Photo: Inger Kristoffersen

Matblekksopp (Shaggy Ink Cap or Lawyer's Wig)

Matblekksopp (*Coprinus comatus*) is a medium-sized gilled mushroom with a tall, narrow cap. The gills start off white but gradually turn pink and later black. The cap is white except for the pale brown top and has shaggy scales. The mushroom gradually dissolves into a black liquid reminiscent of ink. They can be found in rich soils among grass.

The photograph shows a matblekksopp in perfect condition, with no sign of any black at the edge of the cap. All white parts of the mushroom can be eaten; simply cut away the pink and black parts. Matblekksopp must be kept moist to stop them dissolving to ink, e.g. in moistened paper in the refrigerator where they can be stored for a couple of days.



Photo: Per Marstad

Matrisker (Culinary milk caps)

Matrisker is a collective term for a number of milk caps that have orange, almost carrot-coloured 'milk'. This bleeds from the flesh of a fresh mushroom when you cut into it and is a certain identifying characteristic. **Granmatriske** (*Lactarius deterrimus* - Orange Milk Cap) can appear in large numbers in mossy, damp woods growing under spruce. They usually have lots of green marks and the milk turns wine-red after about 15 minutes. **Furumatriske** (*Lactarius deliciosus* - Saffron Milk Cap) grows particularly well under pines on lime-rich soils. The cap has a series of narrow concentric zones while the stem has shallow orange pits. The milk does not change colour. Matrisker are often worm-eaten so it is a good idea to cut them open in the woods to avoid disappointment when you get home. The photo shows furumatriske.



Photo: Inger Knudsen

Skrubber (Leccinum)

Skrubber (*Leccinum* spp.) is a group of fleshy medium and large sized mushrooms with tubes. They are easy to recognise from their stems covered with small, dark scales that look like a three-day old beard. Cap colours vary from white to black via brown, red or orange tones. The various species are often named after their cap colour or where they grow. Skrubber is an easy group of edible mushrooms to get to know but note that the red ones need to be well done (require heating for at least 10 to 15 minutes) before being eaten as allergic reactions are otherwise not uncommon. The flesh of those with red caps turns blueish-black when exposed to the air or cooked.



Photo: Inger Kjøffersen

How can I use edible mushrooms?

Using mushrooms in the kitchen is easy! Here are a few super-easy recipes. All you need to do is clean the mushrooms properly and cut them into pieces measuring 2 to 4 cm.

Fried mushroom sandwich

The easiest way of preparing edible mushrooms is to fry them up for an open sandwich. Put the mushrooms in a cold pan on a medium heat. After a bit, a liquid starts appearing. Maintain the heat until this has nearly boiled away. Then add butter or oil and turn up the heat. Season with salt and pepper; a pinch of thyme is also good. Add chopped onions or bacon if that's what you fancy. Keep frying for 5-10 minutes, a little longer if there are any skrubber - leccinums in the mix, until the mushrooms have good fried colour. Pile your fried mushrooms on a slice of good bread or fill a baguette or pitta bread.



Photo: Øyvind Holmstad, CC BY-SA 4.0

Mushroom omelette

Fry up the mushrooms as you would for a sandwich, then stir in some whisked eggs after the oil but without turning up the heat. Add your salt and pepper and a few fresh green herbs. Fry on until the mixture stiffens. It's easier to fold the omelette into a half-moon than to try flipping it to fry on both sides. 3-4 eggs for a normal-sized frying pan is usually enough.

Mushroom soup

Fry up the mushrooms as you would for a sandwich, add onion with the oil/butter and fry until the onion is shiny. A clove of garlic and a little thyme are also good additions. Then add your liquid. Boiled water with a couple of stock cubes is easiest but the flavour will be even better if you use proper stock and/or cream or crème fraiche. Bring towards the boil and simmer for 5-10 minutes. Eat it as it is or, if you want a creamier consistency, give it a whizz with a hand blender. 500 g of fresh mushrooms, 1 onion and 1 litre of liquid give you a great soup!



Photo: Public domain

Two rules for eating mushrooms:

Do not eat old or rotten mushrooms. If the mushrooms are in such poor condition that you would not buy them in a shop, just leave them in the woods.

Never eat mushrooms raw. All mushrooms must be heat-treated – fried or boiled – before being eaten. Some mushrooms need cooking for an extra-long time; we recommend 10-15 minutes.

Poisonous mushrooms and mushroom

Poisonous mushrooms contain different toxins that have different effects. Almost all mushroom poisonings begin with nausea, vomiting and stomach pain. With the most dangerous poisonous mushrooms, these symptoms only appear after some hours or days. The most poisonous **fluesopper - amanitas** - produce symptoms only after 4-6 hours. **Giftslørsoppene - the poisonous webcaps** - do not produce clear symptoms for 2-3 days – often after one has forgotten the mushroom meal completely! It is important for the doctor to know which mushroom is responsible to prescribe the correct treatment, so keep any mushroom remains or food left-overs if there are any.

Hvit fluesopp (Destroying Angel) and grønn fluesopp (Death Cap)

Hvit fluesopp (*Amanita virosa*) is a medium-sized gilled mushroom with white, free gills (gills that do not reach the stem). The whole mushroom is white but may yellow slightly with age. Hvit fluesopp has both an inner and outer veil. The inner veil protects the young gills and becomes a ring hanging down from towards the top of the stem (but easily falls off). The outer veil surrounds the entire mushroom



when young and becomes a readily visible bag-like *volva* surrounding the bulbous foot of the stem. Hvit fluesopp is typically found growing in mossy, nutrient-poor soil under either spruce or broad-leaved trees.

The mushroom is completely white. Many champignons (*Agaricus* spp.) are also white but their gills are coloured – first pink and later brown.

Here you can see how the outer veil forms a bag-shaped *volva* at the foot of the stem.

Photo: Inger Kristoffersen



Photo: Inger Kristoffersen



Photo: Inger Kristoffersen

Grønn fluesopp (*Amanita phalloides*) is just as poisonous as hvit fluesopp. It has an olive-coloured cap with very fine radial stripes and slightly greenish, uneven zones around the stem. It can be found growing in broad-leaved woodland.

Spiss giftslørsopp (Deadly Webcap) and butt giftslørsopp (Fool's Webcap)

Spiss giftslørsopp (*Cortinarius rubellus*) and **butt giftslørsopp** (*Cortinarius orellanus*) are the most poisonous mushrooms in Norway. They are particularly scary because the toxins work slowly, and a number of days may pass before you notice their effects. Both are medium-sized gilled mushrooms, yellowish-brown to reddish-brown or almost fox-coloured. The gills become cinnamon-brown with age. Spiss giftslørsopp is the commoner of the two and is most easily recognised by its more or less obvious yellow belts on the stem.



Photo: Inger Kristoffersen

Spiss giftslørsopp is found in nutrient-poor mossy woods under spruce or birch, often with blueberries. This is the same habitat as for traktkantarell. Butt giftslørsopp grows only on the Norwegian south coast where there are trees such as oak, beech or hazel.

Traktkantarell grows in the same type of woodland as spiss giftslørsopp. The two mushrooms do not look similar, but the danger is that small specimens of spiss giftslørsopp may get mixed in with your edible mushrooms if you pick or prepare your mushrooms at home without paying proper attention.



Photo: Rørdun Braathen

Rød fluesopp (Fly Agaric) and brun fluesopp (Royal Fly Agaric)

Rød fluesopp (*Amanita muscaria*) and **brun fluesopp** (*Amanita regalis*) are two closely related fly agarics. They are not among the most poisonous mushrooms and are easy to recognise. Both are large gilled mushrooms with white gills not fully reaching the stem (free gills) and a ring at the top of the stem. Rød fluesopp has a red cap with almost white warts while brun fluesopp has a brown cap with slightly more yellowish-brown warts.



Photo: Inger Kristoffersen



Photo: Inger Kristoffersen

The outer veil surrounds the entire mushroom to start with but breaks up as the mushroom grows, forming 'warts' on the cap and scales at the foot of the stem. Note that the warts may be washed off after heavy rain.

The inner veil protects the gills as the mushroom matures. It is left hanging as a ring around the stem. On older mushrooms the ring may disappear.

Panterfluesopp (Panther Cap)

Like all *amanitas*, **panterfluesopp** (*Amanita pantherina*) has free, white gills. It has a ring on the upper part of the stem of mature specimens, and a fold formed by the outer veil on the bulb at the base of the stem. The cap is light golden-brown to grey-brown with many small white warts. There is a comb-like pattern on the cap edge. Pantherfluesopp can be found in broad-leaved woodlands in southerly parts of the country.



Photo: Inger Kristoffersen

Flatklokkehatt (Deadly *Galerina* or Funeral Bells)

Flatklokkehatt (*Galerina marginata*) is a yellow-brown gilled mushroom that grows on rotting wood, often in clusters. The cap normally measures between 2-4 cm but may grow as large as 5-6 cm in nutrition-rich sites such as bark fills and woodchips in gardens. Flatklokkehatt can easily be mistaken for stubbeskjellsopp (*Kuehneromyces mutabilis* - Sheathed Woodtuft), which is both edible and good, but the stem distinguishes the two species. In flatklokkehatt, the stem is greyish with light longitudinal fibres below a ring; in stubbeskjellsopp, there are small, dark-brown scales below the ring. Small, brown gilled mushrooms are generally difficult to identify.



Photo: Inger Kristoffersen

Pluggsopp (Brown Rollrim)

Pluggsopp (*Paxillus involutus*) is a very common mushroom that can cause extremely serious allergic reactions. It does not just grow in woodland but in parks, gardens and avenues as well, especially if there are birches nearby. The most obvious characteristic is the rolled-in cap edge, which is particularly evident in young specimens. The young gills are pale yellow, grow a long way down the stem and stain brown when pressed.



Photo: Inger Kristoffersen

Three rules about poisonous mushrooms:

- If poisoning is suspected, contact the Norwegian Poison Information Centre (Giftnformasjonen). Keep any remains of the mushroom or meal eaten.
- Note that some mushrooms produce symptoms several hours or days after they have been eaten.
- Edible mushrooms growing in other countries may have poisonous lookalikes in Norway.

Meet us at mushroom controls

Every autumn, our members' associations arrange mushroom controls across the country. Take what you have picked and get a mushroom controller to check every single mushroom you have found. They will separate edible mushrooms from those that cannot be eaten. You can find out where your nearest mushroom control is at *Soppkontroll.no*

You can also use the *Digital soppkontroll* app, which is available during the season. You send pictures of the mushrooms you have found, and the controller will take a close look and tell you if they are edible. The digital control is available every day during the most hectic mushroom-picking weeks in the autumn. You can find the app at *Soppkontroll.no*, in the Appstore and in Google Play.



**If poisoning is suspected, contact the Poison Information Centre:
Tel: 22 59 13 00, 24 hours a day**



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Poison Information Centre
+47 22 59 13 00
24 hours a day for acute poisoning
Giftinfo.no

This booklet was financed using funds from the Norwegian Environment Agency

