



Poisonous and edible mushrooms



An introduction to mushrooms in Norway



Dear participant!

Picking mushroom for food and recreation is bringing pleasure to steadily growing numbers of people. We hope that this course will help you share in these pleasures too. Some of the most poisonous Norwegian mushrooms may resemble good edible mushrooms from other parts of the world so it is important that you are absolutely certain that those that you are picking for food are edible. This course aims to teach you the most important mushrooms in Norway – both those that are edible and those that are poisonous.

Mushrooms are a fantastic part of many dishes but it is recommended that they are mostly used as flavouring. They are in fact quite difficult to digest and large amounts may lead to temporary indigestive pains.

Mushrooms are otherwise suitable for most dishes: Soups, sauces, omelettes, pasta dishes and much more. They may be a course at any meal – even dessert has been tried!

Returning home with more mushrooms than one would either want to, or could possibly, eat at once is far from unusual. Fortunately there are various different methods of long-term storage. The commonest ways are drying (by exposing the mushrooms to warm, moving air) and deepfreezing (preferably in the mushrooms' own juices). Both methods are well described in most mushroom/cookbooks.

You can avoid poisoning from mushrooms by following a few simple rules:

- Don't eat mushrooms that you don't know or that do not have a typical appearance
- Don't eat old or rotten mushrooms
- All mushrooms should be thoroughly heated before eating
- Don't store mushrooms in plastic bags over longer periods without sufficient air
- Use the mushroom checkpoints (free)
- Don't test mushrooms you don't know by tasting – poisonous mushrooms may have a mild flavour
- Use up-to-date Norwegian mushroom literature



Photo: RE

Poisonous Mushrooms

In Norway we consider there to be between five and ten mushroom species capable of causing critical damage. It may be comforting to know that there are far more good edible species but it is very important to be able to identify those that are poisonous. Most mushrooms in Norway are regarded as inedible (unpleasant taste, too hard, too small etc).

A rule-of-thumb is not to eat mushrooms that are completely white or completely brown in all their various parts. It is of course much better to learn the individual species.

Mushroom poisoning may produce various effects, from passing mild indigestion to permanent life-threatening damage, as well as many conditions in between.

We usually group these poisons (toxins) in a number of main groups:

Cellular toxins

Extremely serious. Species include Destroying Angel, Death Cap, poisonous *Cortinarius* species (Webcaps), Deadly Skullcap. Among other things, the liver and kidneys are affected.

Neurotoxins

Serious. Species include Fly Agaric and *Inocybe* species (Fiber Caps). Nerve system affected.

Gastro-intestinal toxins

Unpleasant, sometimes serious. Many different mushrooms. Digestive tract affected.

Those poisonous with alcohol

Other poisons

If poisoning is suspected:

- Contact the Poison Information Service (Giftinformasjonen, open 24 hrs, tel: 22 59 13 00) or a doctor for advice
- Keep any mushroom/meal remains
- Have medicinal charcoal available (from the chemist's)
- Be aware that symptoms from some mushrooms do not occur until a number of hours after ingestion and that this in itself can be a sign of serious poisoning.

Most photos in this leaflet are shot by Inger Kristoffersen (IK) and Reidun Braathen (RB). Others are from Creative Commons resources. Illustrations by Inger Anne Lysebråte (IAL).

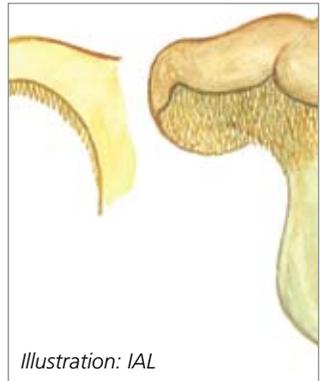
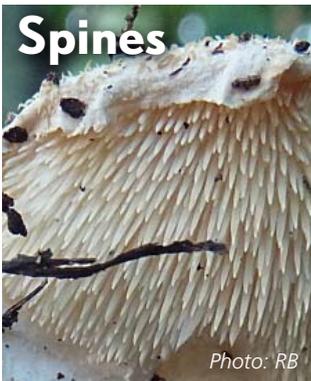
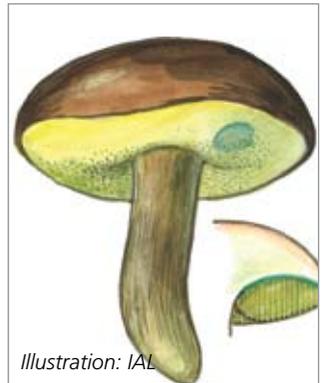
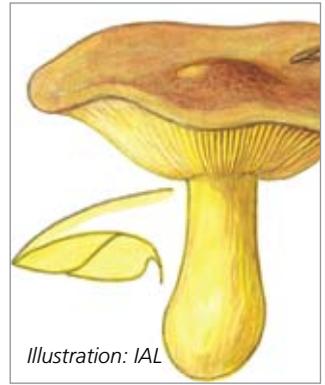
Cover page: Top - Spiss giftslørsopp (Deadly Webcap), photo IK. Down – Kantarell (Chanterelles) in the frying pan, photo IK.

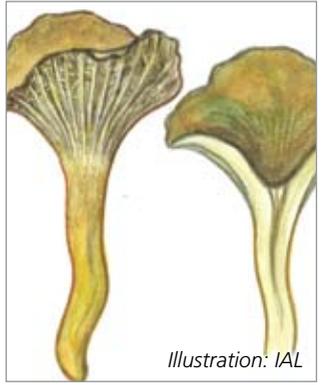
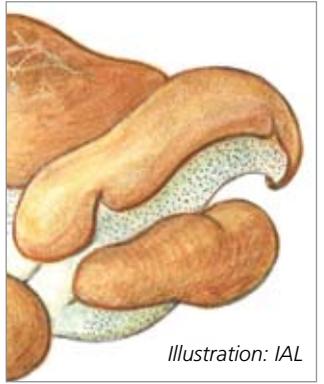
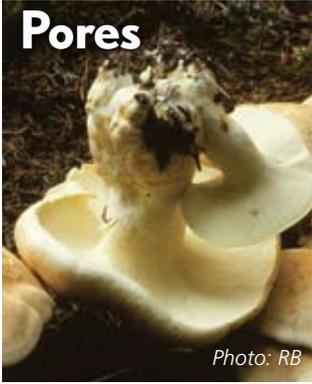


Activated charcoal. Photo: Giftinformasjonen

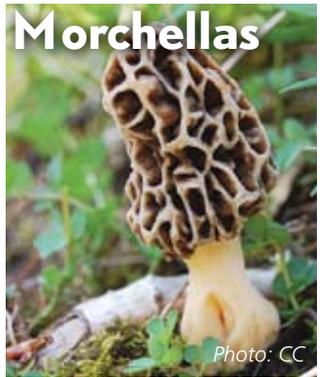
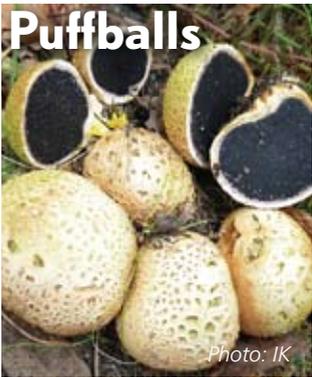
Identifying mushrooms

In order to be able to identify a mushroom correctly, you may have to use a number of your senses. Sight and smell are most important. More about smell under the various species. As far as sight is concerned, mushrooms are divided into groups on the basis of what they look like on the underside of the cap.





Others



A few mushroom species

This booklet only gives the briefest of introductions to Norwegian mushrooms. In order to be completely sure that a species has been identified correctly, it is of the utmost importance that help and advice above and beyond that given here is sought. The rest of the booklet provides an overview of mushrooms that are very useful to learn: The best, most readily identifiable edible mushrooms and the most dangerous poisonous mushrooms that should never end up in your basket.

Poisonous mushrooms



Destroying Angel (Hvit fluesopp)

Deadly Webcap (Spiss giftslørsopp)

Fly Agaric and Brown Fly Agaric (Rød og brun fluesopp)

Panther Cap (Panterfluesopp)

Deadly Skullcap (Flatklokkehatt)

Brown Roll rim (Pluggsopp)

Good edible mushrooms



Chanterelle (Kantarell)

Funnel Chanterelle (Traktkantarell)

Hydnum / Hedgehog species (Lyse piggsopper)

Sheep polypore (Fåresopp)

Shaggy Ink cap (Matblekksopp)

Edible Milk caps (Matriske)

Penny Bun Bolete (Steinsopp)

Leccinum species (Skrubber)



Destroying Angel (Hvit fluesopp)

White throughout (hat, gills, stem), but may have a hint of yellow, particularly in the hat. Rises from a large, flaky 'sock' and has a large ring around the stem (which can fall off!). Mushroom with gills. Common in forests. Deadly poisonous (cellular toxin which can cause liver failure).



Death Cap (Grønn fluesopp) is equally poisonous but much rarer.



Deadly Webcap (*Spiss giftslørsopp*)



Perhaps Norway's most poisonous mushroom. It attacks the kidneys in particular and may have a latent period (the time between ingestion and symptoms of poisoning) of up to several days. Deadly Webcap causes serious kidney failure after 1-2 weeks. Red-brown to orange-brown. Mushroom with gills. Common in coniferous forests. Radish-like smell increases with age. Veil remains form 'belts' on the stem. These are yellow at first, then darken. The cap is more or less clearly pointed.



Photo: IK

Fool's Webcap (*Butt giftslørsopp*) is equally poisonous but much rarer.

No webcaps in Norway are edible.

Funnel Chanterelles (*Traktkantarell*) grow in the same habitat as Deadly Webcap and, although the two are not very similar in appearance, careless picking may lead to small webcaps been taken by mistake. Can you see the potential danger on the photo?



Photo: RB

Fly Agaric and Brown Fly Agaric (Rød og brun fluesopp)

The Fly Agaric and Brown Fly Agaric are varieties of the same species. The caps have striped edges and the white stems have a ring. The caps, red or brown respectively, are covered with white 'warts'. The flesh is yellow immediately under the cap cuticle, otherwise white. Common in both birchwoods and coniferous forest. The mushrooms are poisonous, causing stomach upsets and other symptoms such as confusion, dizziness and hallucinations.



Panther Cap (Panterfluesopp)



Smells like raw potatoes. Has a characteristic ridge above the bulb at the foot of the stem. Panther Cap may resemble Brown or Grey Fly Agaric but these have scaly wreathes at the foot of the stem. Same symptoms as from Red/Brown Fly Agaric.



Deadly Skullcap (Flatklokkehatt)

This mushroom grows on old tree stumps and decaying wood. It can easily be mistaken for Sheathed Woodtuft (Stubbeskjellsopp), which is an edible species but by no means a mushroom to be picked by beginners!

The cap colour of Deadly Skullcap varies in accordance with humidity in the air. Golden-brown to cinnamon-brown with a paler centre may serve as a description. The stem is smooth, often with silvery fibres running up and down. The mushroom contains cellular toxins which can cause liver failure.



Brown Roll rim (Pluggsopp)

Brown Roll-rim has, as the name suggests, an in-rolled rim to the cap. It is greyish-brown with a shiny smooth surface and has light brown gills that go darker when bruised. The stem is often shaped like an old-fashioned tent-peg.

Brown Roll-rim can cause acute stomach upsets if eaten raw. Moreover, repeated ingestion of even properly cooked Brown Roll-rims can result in damage to blood cells and the kidneys.



Penny Bun Bolete or Cep (Steinsopp)

Grows in woods and forests, most commonly in mixed woodland. Different shades of brown. Cap with tubes. The tube mouths are light at first, darkening with age.

Can be confused with *Bitter Bolete* (*Gallerørsopp*) which, as the name suggests, tastes very bitter indeed.



Photo: IK

Other good Boletus species are *Pine Bolete* (*Rødbrun steinsopp*), *Summer Cep* (*Bleklodden steinsopp*) and *Bay Bolete* (*Svartbrun steinsopp*).

In Norway, tasting Boletes is safe. Those that taste bitter are inedible.



Photo: CC

Bitter Bolete

Chanterelle (Kantarell)



Pale yellow to golden yellow. Ribs. Fleshy. Fruity smell (apricot).
Grows in forests and woods, often in large numbers.



Photo: IK

Funnel Chanterelle (Traktkantarell)



Colours vary through browns and greys, sometimes with a hint of green. Ribs. Thin-fleshed. Funnel shaped, developing a hollow stem. Grows in coniferous forests, often in very large numbers.

The Funnel Chanterelle belongs to a family of mushrooms called *Craterellus* (*Trompetsopper*). Other good edible species from this family include *Horn of Plenty* (*Svart trompetsopp*) and *Yellowfoot*. (*Gul trompetsopp*)



Photo: IK

Hydnum / Hedgehog species (Lyse piggsopper)

Two edible species. Both are lightly coloured and have a soft texture. Characterised by the soft spines on the underside of the cap. Both grow on the ground in forests and woods.



Photo: IK

Sheep polypore (Fåresopp)



Light coloured, matt and smooth. Grows in coniferous forest, often many in one area. The underside of the cap is full of small holes or pores. The flesh turns yellow when heated.

Albatrellus confluens (Franskrødsopp) is somewhat similar. This mushroom does not taste good but it is not poisonous either.



Photo: IK

Shaggy Ink caps (Matblekksopp)



White mushroom with shaggy scales on the cap. Has a long season and thrives on well-fertilised ground. The black spores gradually discolour the mushroom until it finally dissolves into 'ink'. Ink caps should be kept damp to combat spore maturation. Only those which are white throughout may be eaten.

Common Ink cap, or Tippler's Bane, (Grå blekksopp) causes acute discomfort if ingested with alcohol. It is poisonous and usually has a smooth cap.



Photo: IK

Common Ink cap



Photo: RB

Shaggy Ink cap

Edible Milk caps (Matriske)



Reddish to orange cap and stem. Carrot-coloured 'milk'. Actually two species (associated respectively with firs and pines) but not necessary to distinguish between them. Both are good to eat.

Milk caps and Brittlegills are large families. Both have crumbly, brittle flesh like apples or chalk. Milk caps contain milky latex, brittlegills do not.



Photo: IK

Saffron Milk cap

Leccinum species (Skrubber)



Boletes (caps with tubes) with rough, 'stubby' stems.

Many different species. Most are good for eating but the requirement for thorough preparation (10 -15 minutes in a hot frying pan) is extra important where *leccinum* are concerned. Insufficient preparation may result in extremely uncomfortable gastro-intestinal symptoms, occasionally requiring hospital treatment.



Photo: IK

This course was co-developed by
Giftinformasjonen and
Norges sopp- og nyttevekstforbund

The booklet should be supplemented with a reliable book about mushrooms. The following books, for example, are suitable for beginners:
Inger Lagset Egeland/Steinar Myhr: **Sikre sopper** (Gyldendal 2012)
Per Marstad: **Soppåndboka** (Tun 2011)
Leif Ryvarden: **Norske matsopper** (Cappelen Damm 2010)

Recommended for further reading:
Inger Lagset Egeland/Steinar Myhr: **Norske sopper** (Gyldendal 2011)



www.soppognyttevekster.no



Giftinformasjonen

Helsedirektoratet

Phone: 22591300

www.giftinfo.no