
Field Notes / Beneath the cap

The grower's eye

Beneath the cap, a different story: the architecture of spores, the shape of maitake and the moment a harvest is ready.



Under the canopy · One mushroom, many fans · Harvest by maturity, not size · A harvest-to-cooler reference to keep

A photographic edition from the Southwest Mushrooms archive.

Open the notebook / Three questions

A beautiful cap is only the beginning.

Yellow overlaps, pink folds, a hand beneath a crowded canopy. The room is beautiful at first glance. The second glance asks what all that shape is doing.

A mushroom is a reproductive structure, the visible part of a fungus whose mycelium grows through its substrate and releases enzymes to obtain nutrition. That distinction changes the picture: the cap is not the whole organism. It is one of the places where the organism's reproductive work becomes visible.

Biology / Cornell: Mycology 101

<https://smallfarms.cornell.edu/resources/mycology-101/>

Where is the cutting point?

An overhead canopy conceals stem attachments. A working view finds the block again, then places the scissors in relation to it. Pages 3–4.

Why so many undersides?

Gill gaps give spores an exit route. Maitake takes a different structural path: many fans, a branching base and pores. Pages 4–6.

When is enough growth enough?

A broad cap is not automatically a better harvest. Species-specific edges and teeth offer more useful cues than size alone. Pages 8–9.

Along the way: four photographic plates, a repeatable way to document a block, and two pages to take from the reading table to the harvest bench.

A note on the archive

These stills come from three edited films. They are selected views, not a continuous harvest or one specimen's growth sequence. Technical explanations are sourced separately; none is a quotation from Michael or a measurement made from these frames.

The working room / Photo essay

Under the canopy



Harvest archive / 05:05. The brown canopy nearly hides the block. Caps overlap the places where stems attach.

An abundant block can hide the very place a harvest has to begin.

Brown discs overlap until the block nearly disappears. You can follow the cap rims, but many stem attachments sit behind them. The attractive view and the working view ask different things of the camera.

Turn to the scissors photograph on the next page. The brown substrate surface now occupies the center; exposed stems interrupt it, while pale cap undersides gather at the perimeter. The tool is beside those stems, not above the canopy. That relationship is the discovery: the harvest task becomes legible when the hidden attachment points enter the frame.

The tray view supplies the other end of the task. Harvest is not only the moment a mushroom leaves its block; there is also somewhere for it to land. A close-up of the scissors cannot show that receiving arrangement. The wider photograph can.

From looking to handling

Cornell's handling guide describes gentle cutting or snipping near the stem base, or pulling and twisting where appropriate. The method depends on the mushroom and situation. The useful first step here is seeing the attachment rather than treating the cap as the cutting point.

Handling / Cornell: Post-Harvest Handling

<https://smallfarms.cornell.edu/resources/harvest-to-market-guide/post-harvesting-handling/>

The working room / Tool, underside, tray

The underside has another job.



04:02 / The cutting view. Open scissors enter beside exposed stems; pale cap undersides surround the brown block surface.



05:34 / The underside view. Tilting the block brings pale undersides and the spaces between stems into view.



06:38 / The receiving view. The foreground tray holds harvested mushrooms, adding the destination to a task seen mostly in close-up.

A sideways launch, then a fall

On a gilled mushroom, spore-producing cells called basidia launch ripe spores sideways into the spaces between gills. Air drag stops that sideways motion within less than a millimeter. Gravity then carries the spores down through the gaps; tiny air currents move them on once they clear the cap. The fine lines beneath a cap are part of an exit architecture, not simply a surface pattern.

Spore dispersal / Heino Lepp, Australian National Botanic Gardens

<https://www.anbg.gov.au/fungi/dispersal.html>

The specimen pages / Surface and structure

A room in four textures

A cap's upper surface and its spore-bearing underside tell different stories. These four views do not reveal them equally.



01 / Yellow shelves. Repeated curved rims make the cluster look layered; dark gaps separate the caps. The upper view gives us shape, not a view of every underside.



02 / Pink, edge-on. Fine gill lines are visible beneath the pale rims. Here the photograph reveals a spore-bearing surface, not just the cap's outline.



03 / Rounded caps. Pale mottling belongs to the upper surfaces in this view. The pattern tells us about texture; the spore-bearing undersides remain concealed.



04 / Broad, dark shelves. Pale rims describe the outward edges. A shelf-shaped silhouette alone does not tell us whether its underside carries gills or pores.

The pink plate lets the eye follow gill lines. The rounded brown plate offers mottling instead: texture on the cap above, rather than a view underneath. That is a useful distinction when photographing a mushroom. A striking surface detail may be beautiful without answering the structural question you brought to it.

Gill function / ANBG: [Spore dispersal](https://www.anbg.gov.au/fungi/dispersal.html); pore-bearing maitake continues on the next page

<https://www.anbg.gov.au/fungi/dispersal.html>

The specimen pages / *Grifola frondosa*

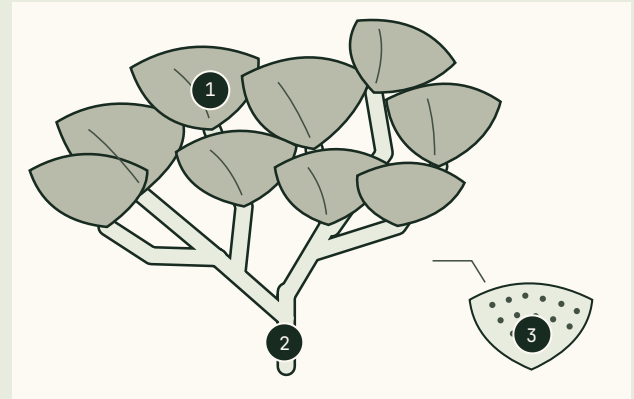
One mushroom, many fans

The familiar cap-on-a-stalk picture is a poor universal model. Mature maitake is a branching arrangement of many caps.



Maitake archive / 08:36. Rounded lobes gather above a pale lower surface. This held form is the photographic question, not the mature form illustrated beside it.

Mature maitake / Structural sketch



Diagram, not archive evidence. A simplified arrangement, not to scale.

1 / Many fan-shaped or triangular caps form a rosette.

2 / Caps connect through a common branching whitish stalk base.

3 / Cap undersides bear pores, rather than gills.

Michael Kuo's description of mature *Grifola frondosa* supplies the model above. Follow the branches toward the base and the many fans become parts of one fruiting body. Turn a fan over and the contrast with our gilled harvest photographs is sharper still: maitake has pores.

The archive's held, lobed formation is not being identified as a normal developmental stage or promised to become the sketch. The comparison expands the mental model; it does not diagnose the photograph.

Mature morphology / Michael Kuo: *Grifola frondosa*, October 2017

https://www.mushroomexpert.com/grifola_frondosa.html

At the bench / A technique to borrow

Give the next view a memory.

A useful photograph carries its context with it. Keep the whole block, then the detail, then the question.



Maitake archive / 04:32. A useful record keeps the bag, substrate block and formations in the same view.

01 / Make a pair

Begin with the whole subject and surroundings. Add a detail view of the feature you want to compare. Keep both original files under one record identifier.

03 / Separate observation from question

Write the visible feature and its location first. Add the context you know. Put your interpretation or next question in its own sentence.

02 / Record the conditions of the picture

Note the capture time, viewpoint and lighting. Repeat the angle for comparison, or state the change. Camera brightness is not a room measurement.

04 / Leave a path back

Keep edits as copies. Label cropping or brightness changes. A future reader should be able to recover the wider scene, not only the selected detail.

Worked example / This archive image

Record: asQtPL8d_to, selected at 04:32 (272.39 seconds). A bagged block stands on a work surface; rounded dark formations sit near its top. Film publication: 17 September 2020; capture date not recorded here. Question for a new photograph: can an underside view show how the visible formations attach?

Keep / Harvest-to-cooler reference / 1 of 2

Harvest by maturity, not size.

Look for a species-specific change of shape, not simply the largest mushroom on the block.

Shiitake

Most of the cap is open, with the edge still rounded or curled and the gills visible.

A flat, pancake-like cap is late in Cornell's guide. Maturity affects keeping quality, so extra size can come at the expense of a useful harvest window.

Oyster

The cap retains a slight curl and the flesh remains flexible.

Cornell describes flatter clusters as more fragile. Read the cap edge and handling texture together rather than waiting for the widest possible spread.

Lion's mane

Teeth point downward and are about 1 cm long.

This is Cornell's approximate harvest cue, not a universal threshold. It is a different kind of signal from an opening cap: here you watch the teeth.

Use the cue, keep the context

These are guide cues for the named cultivated mushrooms, not a species-identification or crop-safety test. Note which cue you used and when you harvested; it gives the next batch a more useful comparison than size alone.

Harvest maturity / Cornell: Post-Harvest Handling

<https://smallfarms.cornell.edu/resources/harvest-to-market-guide/post-harvesting-handling/>

Next: ready the vessel, detach gently, remove debris, then cool and protect the harvest. No archive plate is being presented as a calibrated example of these maturity cues.

Keep / Harvest-to-cooler reference / 2 of 2

The cut is not the finish.

Plan the receiving vessel and the cold destination before the first mushroom leaves the block.

01 / Ready the receiving vessel

Use a food-safe harvest vessel that has been washed and thoroughly dried. Have the receiving space ready so the harvest has a prepared destination.

03 / Remove debris before storage

Brush off debris rather than washing the harvest. Use a damp cloth to dab remaining dirt if needed. These are handling steps for sound mushrooms, not a way to rescue spoiled product.

05 / Protect with air exchange

Choose food-safe protective packaging that allows air exchange. Paper bags suit small quantities. Breathable or unsealed packaging matters more than a blanket rule against one material.

02 / Detach gently

Cut or snip near the stem base, or use pulling and twisting where appropriate. Choose the method for the mushroom and situation; avoid treating one movement as a rule for every crop.

04 / Refrigerate after cleaning

Cornell recommends 36–38°F (approximately 2–3°C). Arrange that cold space as part of the harvest, not as a problem to solve when the receiving vessel is full.

06 / Check the handoff

Confirm that the buyer has cold storage. Your cooler is one part of the route; the receiving end needs to be ready too. These steps do not promise a fixed storage life.

The sequence to remember

Prepared vessel → gentle harvest → debris removal → refrigeration → protected, breathable handoff.
Maturity and handling belong to the same quality decision.

Handling and refrigeration / Cornell: Post-Harvest Handling

<https://smallfarms.cornell.edu/resources/harvest-to-market-guide/post-harvesting-handling/>

The back page / Films and further reading

The edge is a place to begin.

An edge can hide a stem, open a route for spores or signal a harvest window. Looking closely is most useful when it changes what you do next.

Harvesting Shiitake Mushrooms

Published 2021-09-22

<https://www.youtube.com/watch?v=dzNjDmP3Cgw>

Fruiting Maitake Mushroom Blocks | How We Grow Grifola frondosa Indoors

Published 2020-09-17

https://www.youtube.com/watch?v=asQtPL8d_to

Heino Lepp, Australian National Botanic Gardens: Spore dispersal

Accessed 2026-09-22

<https://www.anbg.gov.au/fungi/dispersal.html>

Inside Our Exotic Mushroom Grow Room | Lion's Mane, Chestnut, Pioppino & More

Published 2020-10-06

<https://www.youtube.com/watch?v=9BaXvKDDRGY>

Cornell Small Farms Program: Mycology 101

Accessed 2026-09-22

<https://smallfarms.cornell.edu/resources/mycology-101/>

Michael Kuo, MushroomExpert.Com: Grifola frondosa

Published October 2017

https://www.mushroomexpert.com/grifola_frondosa.html

Cornell Small Farms Program: Post-Harvest Handling

Accessed 2026-09-22

<https://smallfarms.cornell.edu/resources/harvest-to-market-guide/post-harvesting-handling/>

Photographs: full-frame derivatives from the original-resolution masters. Source IDs, frame-selection times and hashes are in the accompanying source notes. Writing: new visual analysis, editorial method and credited paraphrases; no transcript quotations. Diagram: original explanatory drawing based on Kuo, not an archive image.

Field Notes / The grower's eye

Made to read, print and keep. Photographs from the Southwest Mushrooms archive, with credited technical sources and an original explanatory drawing. The links above return to the films and further reading.