

Checklist for euthanasia using carbon dioxide

Euthanasia of entire laying flocks with carbon dioxide Checklist

This checklist is intended as an aid so that no steps are forgotten for euthanasia of laying hens using carbon dioxide. If you want to read more about the regulations, handling of the gas and how the euthanasia is carried out, see jordbruksverket.se or “[Slakt, avlivning och döda fjäderfän - Jordbruksverket.se](#)” (Slaughter, euthanasia and dead poultry).

Gas can be ordered from several companies. Here are some examples:

- **Linde Gas**, <https://www.linde-gas.se>
- **Strandmöllen**, <https://www.strandmollen.se>

It is very important that, as the animal owner, you are well prepared and take responsibility for animal welfare, occupational safety, and compliance with all regulations. If you go through this checklist together with the veterinarian and the gas supplier, the risk of forgetting an important step is reduced.

There are some conditions you must meet:

- A veterinarian must be present before, during and after the euthanasia.
- Notify the County Administrative Board, animal welfare department.
- The layers must be sent for destruction afterwards; contact Svensk Lantbrukstjänst.

Do not use carbon dioxide euthanasia if live animals, that are not to be euthanised, are housed in directly adjacent areas!

During the euthanasia you must have full control of where all people and animals on the farm are located. Think through where there are culverts and other connections – the gas spreads!

There is also a lot in the poultry house that must be prepared, such as emptying or isolating water lines and fittings from cold, sealing the building and installing conduits, see the checklist below.

Checklist – prepare in advance

Order containers for transport of carcasses to a destruction facility, incineration plant or biogas facility. Contact Svensk Lantbrukstjänst, [Svensk Lantbrukstjänst](#), or phone [010-490 99 00](tel:010-4909900).

In consultation with the veterinarian, estimate an approximate gas volume:

room length (m) × width (m) × ceiling height (m) × 1.8 (density) × 0.8 = number of kilos of carbon dioxide

Round up to maintain a good safety margin. More gas is required for poultry houses with free-range layers in multi-tier systems and for cage systems, as the gas is heavy and it is more difficult to achieve sufficient gas concentration all the way up to the ceiling. However, the formula above should be applied to all housing systems.

Order gas.

The company delivering the gas must have seen and approved the wall connection for the gas inlet. The gas inlet should be located high up, far from water lines and other sensitive equipment, and preferably a few metres away from the animals. It should not be located on a veranda or another place where gas can be expected to leak out in dangerous amounts.

Notify the County Administrative Board, animal welfare department, that gassing will take place, no later than 1 week in advance. Other rules may apply for euthanasia due to contagious disease.

Book an appointment with the veterinarian who will attend and supervise the euthanasia.

Consider accessibility: the gas truck has a 6-metre hose between the vehicle and the wall connection.

Checklist – preparations shortly before euthanasia

The building must be sealed; leave small openings in the upper parts of the building so air can be forced out by the heavy gas.

Doors and openings, e.g. egg conveyor belts to adjacent rooms, must be taped shut using duct tape or similar on both sides of the door. Do not forget gaps at e.g. thresholds—remember the gas is heavy and flows at floor level.

A manure culvert or opening for the manure conveyor must also be sealed.

Protect or drain water lines and protect other sensitive fittings from the risk of freezing – the gas is very cold.

Carbon dioxide can leak into adjacent spaces. If the door to the poultry area opens directly into staff areas, a packing room or a connecting corridor, it is important to open external doors to fresh air from spaces that are not to be filled with gas. NOTE: Supervise so that no unauthorised person enters; a mesh door with a lock can be a good replacement for the regular door.

Ventilation must be switched off shortly before the gas is ready to be released.

Animals must not be hit directly by the gas jet entering the building under high pressure. Ensure they are not closer than 10 metres from the inlet and, if necessary, angle the pipe upward as well. Block off the area closest to the inlet so no birds remain there.

Closing nest boxes makes it easier to collect the birds afterwards.

Turn off the lights in the poultry house during gassing so the animals are not frightened when they see the gas.

There should be an inspection window on the outside of the building so that the veterinarian and, if applicable, an animal welfare inspector can supervise the euthanasia.

Gas concentration should be measurable if needed in a safe manner; routine measurement is not required.

During euthanasia

The gas concentration must reach 80% and then be kept above 60% for 60 minutes.

Respect the gas—keep track of all animals and people and monitor the egg shop and packing room so that NO ONE enters! Carbon dioxide can also leak into adjacent premises.

After euthanasia

Start ventilation after 60 minutes; open doors and gates and allow the entire area to air out. Do not be alone—have someone outside who can see that you come out again. Open all doors leading out from the packing room and connecting corridors.

No one may enter until the gas is gone—again, keep all people and pets under supervision.

The veterinarian must verify that the animals are dead.

The veterinarian must write a report that is sent to the Swedish Board of Agriculture.

Loading layers into the container is preferably done the day after euthanasia.

Animal welfare and occupational safety

The animal owner is responsible for the euthanasia. The veterinarian is present to ensure everything is done correctly. The amount of carbon dioxide required must be approved by the veterinarian. Before the facility is entered, it must be thoroughly ventilated to ensure that no carbon dioxide remains.

NOTE! Do not enter the building if you are unsure that it is sufficiently ventilated. Measuring the carbon dioxide level inside is recommended. Remember the gas is heavy—there is a greater risk of inhaling higher concentrations if you bend down.

We have reviewed this checklist together

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Animal owner

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Veterinarian