

## Industry tips:

Preventing and minimizing heat stress in pigs during transport and arrival at the slaughterhouse.



### Loading area

- Ensure the pigs have permanent access to water up until the moment of loading and make sure each pig had enough to drink.



- Park the truck in shaded/breezy areas before and if possible during loading, to keep the vehicle cool.
- Load the pigs calmly into the truck and give them the time to walk into the truck on their own. Do not rush them or make them nervous.
- During heat waves reduce loading density. Loading density should be reduced to an amount where pigs can lay down comfortably without touching any other pig.



*Suitable loading density during hot days.*



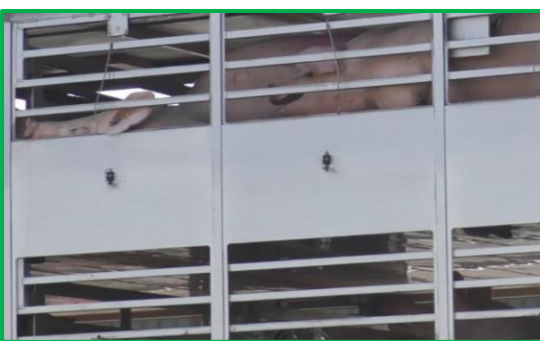
*Much too crowded.*

## Transport

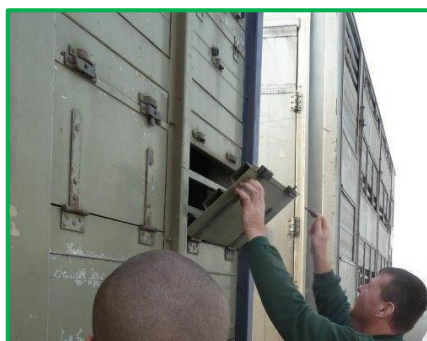
- Only use trucks with automatic fans and a working water system.



- Livestock trucks with a built in sprinkler system to cool down the pigs are recommended. After sprinkling, the truck should however immediately start moving or automatic fans be turned on to create adequate air movement inside the truck. Wetting pigs in a stationary truck can cause problems with high humidity levels or a sauna effect. The costs for a sprinkler system are approximately €500. For more information please contact: [www.pezzaioli.it](http://www.pezzaioli.it)
- Keep the sides of the truck open. This will keep the truck ventilated.



*keep the sides open*



- Avoid using trucks with metal grids as these are less ventilated and won't disperse the heat adequately.



*Trucks with grids instead of full openings between the bars are not to be used on hot days.*

- If possible open up the roof of the truck, allowing the warm air to disperse out of the truck.



- Ensure the loading density is low and pigs are equally divided among the compartments.
- Pay extra attention to the compartment behind the cab. The stock density in this compartment should be significantly lower since the motor will generate additional heat, increasing heat stress in pigs.



*Lower the density in the compartment behind the cab; the motor can produce a lot of heat*



- The roof of the truck should be very well insulated (thick and good quality insulation material placed in between an inner and outer roof) to avoid buildup of heat. Additionally the floor and the walls should also be insulated. It is important the roof be light in colour to reflect the sunlight, dark colours absorb it. Thin walls without insulation can burn the skin of animals in the summer. In the winter it can also cause problems, like body parts getting stuck to the cold metal.



*Roofs and walls in light colour reflect sunlight to avoid buildup of heat*

- During the summer the water in the trucks' automatic water system can become too hot to drink. There is now on the market a water cooling system run by a battery that cools the water from the tank before it gets to the drink nipples. Contact Pezzaioli for more information: [www.pezzaioli.it](http://www.pezzaioli.it). Hot water is a serious on-going issue that we regularly see in the field leading to dehydration and even death. Just because a truck is equipped with an automatic water system does not mean that the animals can drink. There needs to be enough water coming out, it needs to be clean and cool, the drinkers need to be adapted to the species and there has to be enough of them for all pigs to easily access.
- To increase ventilation within the truck, only load pigs on two levels. Giving that extra headspace will increase the volumetric space allowing for better air flow.
- Ensure temperature-controlled trucks have powerful and working ventilators, a working emergency generator in case of failure, proper access doors and are equipped with a hygrometer.
- During the summer straw bedding is too hot and should not be used. Best is using sand or shavings and wetting it first.



*During summer use sand or shavings and wet is first*

- Produce and distribute pamphlets with information about heat stress in pigs and how to recognize the signals. Hand these out to the drivers and the slaughterhouse employees. Trucks with pigs suffering from heat stress should be given priority during unloading and unloaded immediately.

## Slaughterhouses

Necessary points for slaughterhouses to invest in:

- The size of the lairage should be adequate for the supply coming in with an additional “buffer” of at least 10% (in the case that more trucks than expected arrive at the same time). There should be sufficient unloading platforms so that upon arrival trucks can be unloaded immediately and there is no queue.



*A large lairage with several unloading areas and additional empty space for unexpected cases (when more trucks than expected arrive at the same time)*

- When constructing a (larger) lairage build in a floor cooling/heating system. Allowing for cooling during the summer and heating during the winter.

If the above points haven't been put into place yet, the minimum steps that must be done immediately until the above points are in place, are:

- Installation of powerful and large industrial fans. These should be adjustable in height and portable so they can be positioned at every truck and the airflow can reach each level.

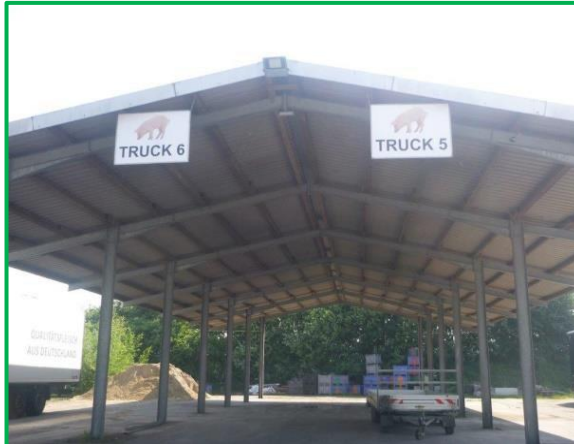


*Large and mobile ventilators.*

*This ventilator is too short, the airflow doesn't reach the top level.*

- Build a sheltered area from the sun where the trucks can be parked until unloaded. Install industrial mobile fans in this area for cooling purposes.





Parking areas with a roof and fans, providing shade and ventilation.

- Create a parking lane next to a row of trees which provide shade.

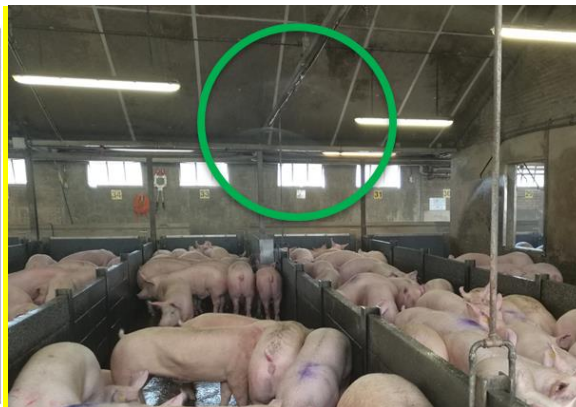
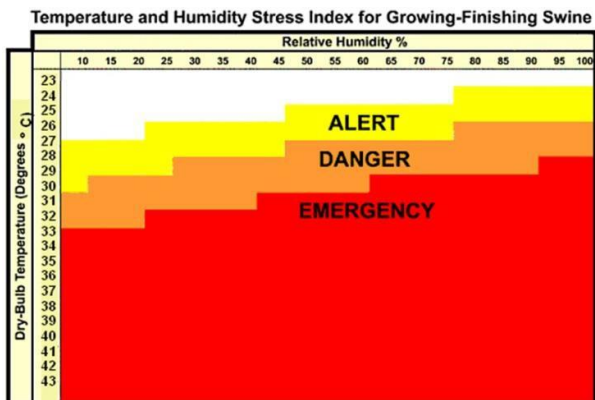


Long waiting line in the sun. The trees do not provide any shade: unacceptable



Trees provide shade at this new parking zone.

- The lairage should be equipped with a proper working misting (see photo below right) and ventilation system. Ensure that the temperature and humidity stays within the safe zone. Please refer to the chart below.



Misting system

- Reduce the stocking density in the lairage during a heat wave, allowing the pigs space to lay down comfortably and cool off.



*Stocking density is too high    Stocking density is acceptable.*

- Ensure that there are spare mobile fans in case of heatwaves or emergencies.



- Adjust the delivery times to the nighttime or early morning, avoiding the heat. Adjust the slaughter schedule according to the delivery times.
- Have a second look at the inbound schedule and make sure that there are not too many trucks arriving at the same time or during hot and humid periods of the day.





- On hot days slaughter fewer pigs.
- When wetting the asphalt or trucks, realize that doing this is only beneficial for the pigs if it's being done with the use of an industrial ventilator. Wetting the asphalt or truck alone, will slow down the rising temperature but will also increase the humidity. An increase in humidity means that the pigs will have trouble cooling down and will suffer more.



Temperature and Humidity Stress Index for Growing-Finishing Swine

