



# Storage and transportation of live red king crab

– a guide prepared by Nofima, funded by FHF

# Live holding of red king crab

*When holding live red king crab, the following factors are important:*

- Make sure to have sufficient supply of good quality water. Preferably the water inlet should be in the bottom of the tank and up-welling. The use of nozzles that spread the water around the tank's bottom area is also recommended.
- The water oxygen level should be measured daily and it should always be above 70% saturation in the outlet water.
- For welfare reasons crabs should not be stored for longer periods at temperatures above 8 °C.
- Movement and handling of the crabs should be reduced to a minimum in order to avoid injuries.
- Long term storage (two months) with individual density of 150 kg/m<sup>3</sup> is possible when the sea-water temperature is lower than 8 °C.



*Live king crab are usually stored in 700 litre plastic tanks (salt fish tanks), but these are not particularly well suited when crabs are fed.*

## Feeding and welfare

When live holding red king crab over extended periods of time one of the key questions is whether the crabs need to be fed to ensure good animal welfare and to preserve the quality of the animals.

The King crab is considered to be a relatively robust animal and it can endure long periods without feed.

***Trials show that both the fed and unfed king crab can manage up to two months of storage under winter conditions (temperature lower than 8 °C).***

- Crabs that were fed with blue mussels had the maximum welfare scores after two months of storage (see table).
- Long-term storage without feeding reduces the meat content (quality) of the legs.
- Feeding the crab during long-term storage will improve the meat contents and quality of the crab.








# Assessment of the physical condition

Assessment of the physical condition of king crabs is possible by using simple visual methods. This enables us to monitor the physical state of the king crab and decide if the animal can be transported alive or not. Three criteria are used for this review:

1. Visual evaluation of movement
2. Test of the crab grip capacity
3. Visual evaluation of the claw lifting.

In the table below are the used color codes to categorize the crab physical condition based on these criteria. Animals in the category red and yellow should not be transported alive.

| Welfare score | 0   | 1   | 2  | 3  |
|---------------|---|---|--|--|
| Movement      | <br>None | <br>Slow | <br>Moderate | <br>Active  |
| Grip capacity | None  | Weak  | Moderate   | <br>Strong |
| Claw lifting  | None  | Weak  | Moderate   | Strong   |



The crabs can tolerate up to 48 hours from the dry air freight transport in boxes with the use of today's package-technique.

## Transportation of live red king crab to the market

During live transport of red king crab to the market the crab will accumulate waste products in the blood. Most of these waste materials will be excreted via the gills when the crab is placed back into the water. Therefore, after dry transport crabs require fresh sea water to be able to get rid of waste substances.

***Low temperature is the most important single factor for the reduction of the amount of waste products.***

- Cooling of the crab before transport lowers crab metabolism and thereby the production of waste products. This is especially important during summer, when water temperatures are higher.
- The crabs should preferably be cooled to below 4 °C.

