

## South African Kelp Farming Project (Phase 2 Feasibility study)

### Standard Operating Procedure (SOP): Receiving the spools in Weaning

**SOP number:** BSASA-10

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**Compiled by:**

The Project Manager (Dr Lizeth Botes)  
on behalf of BSASA

**Version:** 1

**Review date:** to be adapted and revised by industry

### Introduction

The overall goal of the South African Kelp Farming Project (SA KFP) was to gather, analyse and disseminate evidence and research results to a broad stakeholder base, including the existing aquaculture industry and new potential entrants, to lay the foundations toward building a sustainable Kelp Aquaculture Industry in SA and the region.

One of the project objectives was to investigate and tailor the weaning and grow-out methods for our local kelp species (based on the kelp farming manuals from elsewhere that are already publicly available and accessible on the [SA KFP webpage](#)), which can then be adapted and revised by industry to suit their own needs. Although the temporary set-ups that were used in Phase 2 of the SA KFP were aimed at achieving the short-term project objectives, it was the first successful attempt to cultivate *Macrocystis pyrifera*, *Ecklonia maxima* and *Laminaria pallida* in South Africa, and also the first successful attempt to cultivate *E. maxima* and *L. pallida* anywhere.

### Purpose of SOP:

The purpose of this SOP is to provide a breakdown of steps required to receive and hang the spools in Weaning to allow the kelp sporophytes time to acclimatise and grow to ~2-2.5cm in length (which takes ~2-3 weeks) before being transferred onto droppers in Grow-out.

### Weaning preparations:

Depending on the number of spools that will be received, a few “temporary rope hangers” need to be prepared and hung on the main long-line a few days prior to the spools arriving.

1. Assemble the “temporary rope hanger” as per SOP9
2. Upon completion, hang the rope hanger at the beginning of the long-line so that it is in close proximity to where the droppers will be placed.
3. Make sure the crate with all the tools and consumables are packed and ready for the next day. This includes the splicing fid tool, cable ties, knife, side cutters etc.

### Hanging the spools in Weaning:

1. Transporting the spools from the Nursery to Weaning and hanging the spools in Weaning will take place on the same day. Therefore, choose a cool day for transporting and a sea day with little wind when sea surface temperatures are  $\leq 15^{\circ}\text{C}$  (to prevent the sporophytes from getting a temperature shock during out-planting).
2. Liaise with all involved during this process to ensure that all staff and the boat are available for all the activities to run smoothly. The team must arrive 30mins before departure time to help load all the items.
3. When the cooler bags with the spools arrive, load it onto the boat along with the crate that was prepared the previous day.
4. When arriving at the long-line, record the temperature of the water in the canisters and the sea surface temperature.

5. Then lift the rope hanger to access the rung at 3m. Take the splicing fid tool to open the rope strands of the rung, stick the cable tie through and attach the spool to the rung with the cable tie.
6. Continue until all the spools have been attached.
7. Once done, decant all the water in the canisters and return to the jetty.

#### **Off-loading the boat:**

1. Before off-loading, help the skipper by picking up all cable tie off-cuts and rubbish lying on the boat.
2. Off-load all the items and make sure that nothing stays behind and that all the hand tools are in the crate.
3. Record the boat use time for invoicing purposes later.
4. Rinse all hand tools that were used with fresh water and spray with Q20 lubricant.
5. Pack away all items that were used.

#### **Monitor the spools for ~2-3 weeks until spools are ready to be unwound onto droppers in Grow-out:**

1. Over the next 2-3 weeks, the kelps should be monitored on a weekly basis to check that the kelps do not grow bigger than 2.5cm.
2. If the kelps grow bigger than 2.5 cm the holdfasts of the sporophytes will spread over the threads of the hatchery twine and get damaged when being unwound onto the droppers. Also, when the spools are to be removed from the 3m rung and placed back into the canister to transport to the droppers, the space between the spool and the canister is too tight and may damage the juvenile sporophytes.
3. Once the kelps reached 2cm (see below), the team must be notified to prepare for unwinding the spools onto droppers (SOP11)

