



Hatchery Single Seed Oyster Spat Handling Guidelines

Introduction

The following guidelines have been prepared to assist farmers not familiar with the techniques required to handle small single seed oyster spat. While these techniques may seem labour intensive and overly cautious, farmers should bear in mind that each tray may initially hold as many as 50,000 spat and a failure to secure these very small spat properly for on-growing may result in significant losses of spat from the on-growing equipment.

Spat Supply from the Nursery Operator

The minimum size at which selectively bred Sydney rock oyster spat will be supplied by the nursery operator are spat retained on a 3.0 millimetre (mm) square mesh sieve, see Figure 1 below.

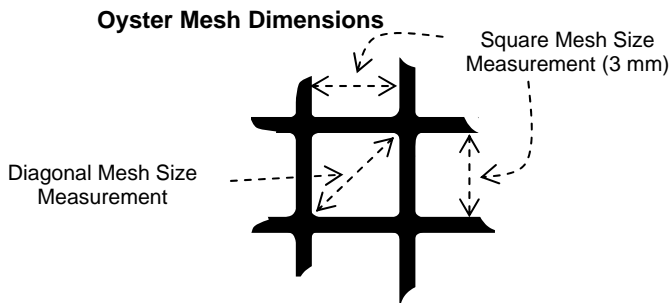


Figure 1. Descriptive dimensions of oyster mesh

For the purposes of this document, spat dimensions are described in Figure 2 below. The smallest oyster spat retained on a 3.0 mm square mesh sieve will be approximately 5.0 mm long x 4.0 mm wide.

Individual arrangements can be made with nursery operators to supply spat at a larger size, however this may require the spat price to be re-negotiated with the nursery operator.

Oyster Spat Dimensions

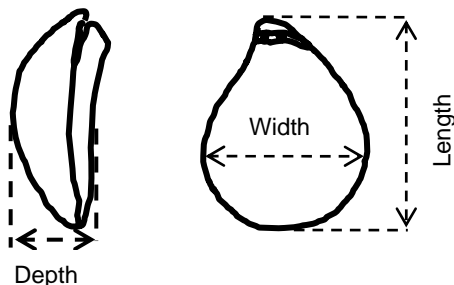


Figure 2. Descriptive dimensions of oyster spat.

Handling Methods

The following handling methods are recommended for handling spat smaller than those retained on a 6.0 mm square mesh sieve.

Sectionalised Trays

Spat retained on a 3.0 mm square mesh sieve should if possible be on-grown initially on a sectionalised tray with a plastic mesh floor of less than 1.6 mm square mesh. To ensure that small spat do not work their way between the mesh floor and the timber frame, the joint between the mesh floor and the timber frame can be sealed with a bead of silicone as shown in Figure 3.



Figure 3. Applying silicone bead to floor joint and tray surface to minimise the risk of spat loss.

Trays should be initially stocked at no more than 1 cup (250 ml) of spat per section of a 12 section sectionalised tray. An identical sectionalised tray with a floor of the same mesh should be used as a lid (mesh down) for the spat holding tray. Prior to joining the two trays together, a silicone bead should be applied to the upper surface of the spat holding tray as shown Figure 3. While the silicone bead is wet the two trays should then be fixed securely together using cable ties, or wire twists, drawn through aligned holes drilled in the timber frames as shown in Figure 4.



Figure 4. Spat bearing tray and lid tray being tied together through aligned holes drilled in the tray frames.

Care should be taken to ensure that the trays do not warp and allow spat to be washed out or moved between sections of the tray.

Bagged Trays

Standard oyster trays may also be used for on-growing spat provided that the tray is lined with snag-proof mesh bags with a stretched diagonal mesh size of less than 2.0 mm. Mesh bags must be secured (stapled) into the tray as shown in Figure 5 with the top and bottom folded over to ensure the spat cannot escape. Stapling over a piece of light cord will enable the staples to be removed with minimal damage to the mesh bag, enabling the bag to be used a number of times.

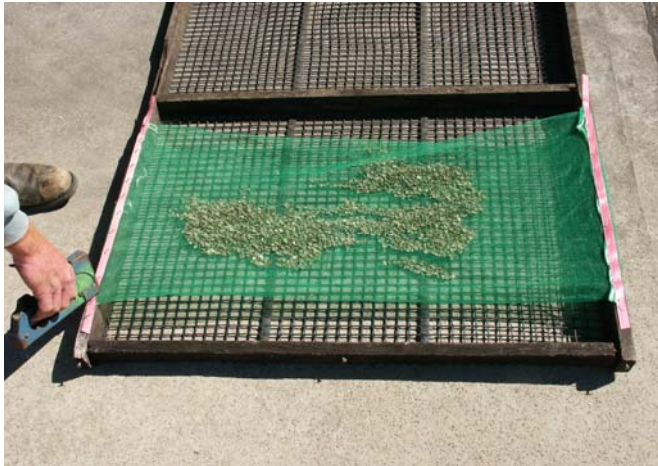


Figure 5. Mesh bags containing approximately 3 cups of spat being stapled into place on a standard 1.8 m oyster tray.

To minimise the risk of damage to the mesh spat bags and loss of spat, the trays should have a suitable plastic oyster mesh cover stapled into place as shown in Figure 6.



Figure 6. Oyster mesh cover being stapled into place to protect oyster spat mesh bags secured in place in tray

Stanway Cylinders

Small spat may also be on-grown in Stanway Cylinders, provided that the cylinder mesh size is less than 2.0 mm (square mesh size). Care should be taken to ensure that the cylinders seal tightly to ensure that spat cannot escape. Cylinders should be initially stocked at approximately 1 litre of spat per cylinder.



Figure 7. Stanway Cylinder with 1.6 mm mesh

Grading of Spat

After initial stocking, trays should be graded approximately every 2 weeks for the first 3 months. During this period spat should be graded by hand held sieve. Spat should be graded using 5.0 mm, 7.0 mm and 10.0 mm square mesh sieves. Spat retained on each sieve should be stocked onto trays with a mesh floor at least 2.0 mm smaller than the sieve mesh size. Spat should be stocked at the same initial stocking rate volumes. In the initial stages, spat can be expected to double in volume approximately every 7 days when grown under ideal conditions.

All care should be taken to ensure that small oyster spat are not exposed to excessive heat or be allowed to dry out during grading. Therefore, spat should always be kept shaded and away from drying winds, and should be returned to the water as soon as possible after grading.

Once spat have reached a size that is retained on a 10.0 mm square mesh sieve, they may be on-grown using normal single seed farming techniques.

Selecting a Nursery Lease Site.

When deciding on an appropriate site to locate your nursery trays you should choose a site that:

- has sufficient breeze to keep spat cool during the warmer summer months;
- does not suffer significant over-catch
- is not exposed to wind generated waves or boat wash;
- is not exposed to high levels of siltation; and
- is not exposed to fresh water inundation.

While on the nursery lease, all spat trays should be covered with shade cloth and be tightly secured to the oyster rack.

Technical Assistance

Should you require any technical assistance or advice regarding the handling or on-growing of your selectively bred single seed oyster spat, please do not hesitate to contact one of the following NSW Fisheries staff:

- Dr Wayne O'Connor (02) 4916 3906
- Dr Mike Dove (02) 4916 3807