The #1 Bestselling Pregnancy Book

WHAT TO EXPECT WHEN YOU'RE EXPECTING

5th EDITION

The all-in-one guide that explains everything you need to know—and can't wait to find out—about your amazing nine months, from conception to birth and beyond. Featuring a week-by-week look at your baby, and information just-for-dads throughout.

Completely New & Revised

Heidi Murkoff
and Sharon Mazel

Foreword by Charles J. Lockwood, MD, Professor and Gynecologist, and Public Health Dean, Moreau Medicine, University of South Florida
10 Years of Production

- 750M seed
- 5.5B eyed larvae
HATCHERIES, HOW THEY WORK

- Broodstock
- Larvae Culture
- Setting
- Post-Set Culture
- Algae Culture
- Fixing Shit
HATCHERY CHALLENGES

- Growing Algae
- Conditioning Broodstock
- Growing Larvae
- Low Margin
- High Overhead
- WATER QUALITY
WATER QUALITY CHALLENGES

Carbonate Chemistry

Temp DO Salinity

Nutrient Chemistry

Plankton Community

Pollution

Bacterial Fauna
HATCHERY CHALLENGES

image from SANOE.org
VIRGINIA EFFORTS

Logos of various organizations and programs related to marine science and oyster farming in Virginia.
## BROODSTOCK OPTIONS

<table>
<thead>
<tr>
<th>Line</th>
<th>Ploidy</th>
<th>Selection Environment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEBY</td>
<td>2N</td>
<td>18-23ppt</td>
<td>Originates from Delaware Bay stock with high resistance to MSX, bred for additional resistance to Dermo, fast growth and survival; selected in moderate salinity environments for growth and survival</td>
</tr>
<tr>
<td>XB</td>
<td>2N</td>
<td>18-23ppt</td>
<td>Originates from Delaware Bay stock with high resistance to MSX, bred for additional resistance to Dermo, fast growth and survival; selected in moderate salinity environments for growth and survival</td>
</tr>
<tr>
<td>HNRY</td>
<td>2N</td>
<td>18-23ppt</td>
<td>Combines genes from wild populations and all ABC genetic stocks, selected in moderate salinity environments for fast growth, survival, high meat yield and shell shape</td>
</tr>
<tr>
<td>LOLA</td>
<td>2N</td>
<td>8-15ppt</td>
<td>Originates from Louisiana stock, low to moderate resistance for MSX, high resistance for Dermo, selected in low salinity environments for growth; anecdotally grown outside of low salinity environments</td>
</tr>
<tr>
<td>LILY</td>
<td>2N</td>
<td>6-15ppt</td>
<td>Combines genes from wild populations and all ABC genetic stocks, selected in low salinity environments for fast growth, survival, high meat yield and shell shape</td>
</tr>
<tr>
<td>GEN</td>
<td>4N</td>
<td>NA</td>
<td>4N line used to make triploids, original ABC “generic” tetraploid line</td>
</tr>
<tr>
<td>GNL</td>
<td>4N</td>
<td>NA</td>
<td>4N line used to make triploids, cross between Louisiana and VA tetraploid</td>
</tr>
<tr>
<td>4NFYR</td>
<td>4N</td>
<td>NA</td>
<td>coming 2019: first 4n family bred line</td>
</tr>
</tbody>
</table>
I’M EXPECTING LARVAE...

- Make sure your system is ready: pumps, blower, cultch, etc.
- Larvae culture can be dynamic, stay in touch with the hatchery.
- Know the culture salinity of the animals you will receive and get your system close (no more than 10ppt difference).
- Ask how long the larvae have been out of culture when shipped.
- Acclimate animals appropriately when you are ready to set.
  - Warm slowly to setting water temp
  - Introduce to setting water
- Don’t keep in tanks longer than 10-14 days (SOS).
- Keep records!
- If there is a problem, notify the hatchery early.
I’M EXPECTING SEED…

• Pick a stock.
• Consider what your nursery can realistically handle.
• Get on the list early and get your deposit in.
• As your delivery window approaches
  • make sure your nursery system is ready to go
  • touch base and see if the hatchery is still on schedule
  • expect delays, have contingencies, stay flexible
• Once received, get seed in water asap.
• Don’t overstock, keep them clean, sort often.
• If there is a problem (count, performance, etc.), notify the hatchery early.
DOES GRADE MATTER?

- For performance to be totally described by genetics, each individual would have to experience identical conditions.