Our Farm is Underwater!

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- Wye Research and Education Center
- University of Maryland Center for Environmental Science
- University of Maryland Eastern Shore
- UMD College Park
- Network of collaborators and partners
Maryland Oyster Production

Public Harvest Bars

Private Bottom Leases

Private Water Column

On-Bottom

Off-Bottom
Maryland Oyster Production

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Private Bottom Leases

Private Water Column

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Demonstration Oyster Farm

- Where should I get a lease?
- What gear should I use?
- What’s best for growing small seed?
- How can I get oysters to market in one year (or less!)?
- How can I ensure that all of my oysters have a deep cup?
- How can I prevent theft?
- How can I make sure my gear doesn’t get damaged?
Agricultural Experiment Stations

- Scientific research center that investigates difficulties and potential improvements to food production and agribusiness
- Experiment station scientists work with farmers, ranchers, suppliers, processors and others involved in food production and agriculture.
Resource Provisions
Jellyfish Acres
2016-2017 Gear Types

- Flippable, floating cage system
- Floating pontoons keep afloat a set of shelves which hold bags of oysters
- Two models: 4 or 6 bag capacity
- 800 or 1200 oysters/cage
- Can be worked by wading or from boat

OysterGro
2016-2017 Gear Types

- 2’ x 2’ trays stack neatly on top of one another
- ~80 2.5” oysters per tray
- Up to 15 trays/stack
- Up to 1200 oysters/stack
- Utilize entirety of water column
- Requires boat or platform for flotation and lift
2016-2017 Gear Types

- 15, 34 or 45 liter capacity cages
- 3, 6, 12, 20mm mesh size offered
- Option to set up as adjustable longline system, allowing for periodic air drying
- Can be stacked
- Can be worked by wading or by low boat
2016-2017 Gear Types

• 15 liter capacity baskets hold ~80 2.5” oysters

• 6, 12mm mesh

• May be set up as in line or crosshatch (rungs on a ladder) orientation

• May be set up as adjustable longline system, allowing for periodic aerial exposure

• Can be worked by wading or from a boat
2016-2017 Gear Types

- Simple construction; good for intertidal zone
- ADPI Vexar Bags strapped onto rebar racks, held ~6-10” off bottom
- ADPI bags hold ~200 2.5” oysters each
- Must be worked by wading
Demonstration Oyster Farm

Two-pronged, intersectional approach to enhancing water column production

**Research**
- Growth
- Mortality
- Condition
- Fouling
- Costs

**Extension**
- Workshops
- One-on-one engagements
- Presentations
- Educational events
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2016-2017 Methods

- Gear researched, purchased, built and installed according to manufacturers’ specifications
- Diploid wild seed deployed at 3-15 mm; specific to gear type requirements
- Two year grow-out period
- 2 gear treatments processed per week; each treatment measured every three weeks
- Shell height, seed volume, mortality measured for each gear treatment
- Weekly 24 hour desiccation: BST Crosshatch and OysterGro
Cost Comparison

- **Initial purchase cost**
  - Gear and anchoring systems
- **Installation costs**
  - Specialized skills or equipment required?
- **Operation costs**
  - Labor time spent processing and maintaining each gear type
  - Cost of maintenance materials and equipment
- **Length of time gear can be in operation**
  - Replaced yearly? Every 5 years?
- **Costs translated to price per oyster**
  - Bottom line: How much does it cost to produce one market sized oyster in each gear type?
2018 Research Additions

• Diploid vs Triploid
  • Growth Rates
  • Mortality
  • Operational Costs

• New Gear Type
  • Stacked bottom cages

• Desiccation Exposure Experimentation
  • Optimizing exposure time for specific species
  • Identifying peak fouling colonization conditions
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2018 Extension Offerings

• Nursery Operations
  • Cultchless Seed Setting
  • Remote Setting (Spat-on-Shell)
  • Upweller Operation

• Growout
  • Gear Operation
  • Pest Management

• Business Management
  • Tax Preparation
  • Online Engagement
  • Seafood Safety Courses

• Data Collection
2019 Research and Extension Additions?

• What areas of your farm could benefit from research and/or engagement with additional stakeholders?

• Are you interested in working with researchers on your operation?

• Innovative ideas for future research?

• Let us know
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