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# Bottom Culture Cost Analysis



**“Economy,  
Employment,  
Environment”**

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Don Webster and Don Meritt  
University of Maryland

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## ***“Building Our Industry Together”***

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# BOTTOM CULTURE COST ANALYSIS

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Being able to accurately determine cost and return in business allows you to plan to maximize potential profit and determine expenses, cash flow and other important aspects of management. In a business with as many risks as aquaculture this is a wise choice to begin your business planning. This spreadsheet will give you the opportunity to do “what if” scenarios when planning your business. As you gain more accurate figures from the operation of your business it will be a valuable tool to track and make better projections for fine tuning it. When using this spreadsheet you should try to be:



- **Accurate** – gather numbers based on real costs and output. Search the price of equipment through published or web-based sources, actual vendors or from discussions with other producers. The more accurate the information, the better the resulting calculations will be.
- **Conservative** – especially in estimating production and sales until you have the experience to justify more aggressive data. Don’t overestimate your production or sales until you know the numbers will be correct.
- **Realistic** – constantly challenge yourself to collect data that can lead to more precise outcomes. As you gain experience you will find the accuracy of this tool increases and becomes more valuable in managing your business and it will allow you to better evaluate your current operations and make decisions to constantly make it better.

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## What the spreadsheet does

The spreadsheet provides estimates of cost and return for bottom culture of spat on shell oysters in Maryland. This has been the principal method of oyster culture for decades and one that has potential for cost-effectively raising shellfish. *Investments*, operating costs and production outcomes often vary between lease sites. Always remember that you are raising live animals and they require proper management for success. The use of selected strains in your farming operation can also affect operating costs and profitability.

## Using the spreadsheet

Care should be taken to verify information input by the user to the worksheet for your particular location. Be sure to **note the colored tabs at the bottom** of the spreadsheet. These allow you to work through each of the sections that are outlined in the instructions.

**How it works:**  
**Yellow cells = data you input**  
**White cells = calculated values**

**Yellow cells** in the spreadsheet indicate where you should **place information** for your system. **White cells** indicate locations where there are **formulas that calculate values** based on the information you input in the yellow cells. The accuracy of the calculations

will be determined by the reliability of the data that you provide to the yellow cells.

In each of the spreadsheet sections, there will be space for you to fill in numbers for your business as you read through the instruction booklet. The information you provide will match the Excel spreadsheet and give you the ability to project the profitability from the business you are developing.

## Assumptions Tab

In the first tab you will find several boxes. These are divided into logically structured areas to begin the process of thinking through the many required details and planning a successful business.

- **Production Assumptions** allow you to plan the size of your operation by entering basic costs associated with your business.
- **Marketing Assumptions** create guidelines for how you plan to sell your products. Think ahead about what percentage of oysters you want to sell to half shell markets and how many by the bushel for processing or other purposes. Selling to raw bars adds additional time and labor from culling single oysters or breaking apart shell clumps.
- **Other Cost Assumptions** allow you to input a variety of costs and capacities to the business, and;
- **Calculated Values** boxes create numbers based on formulas in the cells and use the information that you provided in the yellow boxes.

**Production Assumptions:** This section is used to enter basic production assumptions. We will go through each and provide you with a definition, examples and other information to consider when developing your information. The cell number (e.g. *B4*) refers you to the cell where the your information will be placed.

*B4 - Desired Annual Production:* Enter the total number of oysters you would like to harvest from your entire lease each year. This is the combined total bushels harvested regardless of which type of market

you sell into. Maryland leases are meant to be operated continuously with a rotating harvest. It is recognized that not all the acreage will be able to be used due to variation in bottom type but a good faith effort to plant and harvest is expected. Many growers estimate production based on a three or four year rotation of their grounds. This leads to annual production to generate cash flow from the operation.

*B5 -Market Size Oysters per Bushel:* Enter the average number of market size oysters in a bushel. This figure will vary depending on the oysters harvested. The number may be higher or lower than other producers based on the final market size of your oysters. The default number for this cell uses 275 oysters per bushel and is based on the number agreed upon for use in the U.S. Army Corps of Engineers Environmental Impact Statement for Chesapeake Bay Oysters. However once you begin harvesting, you should determine this number yourself for better financial planning. Depending upon the size of the oysters being harvested this number will be higher or lower. Larger oysters will make the number per bushel smaller and smaller oysters make it larger.

*B6 - Lease Size:* Enter the total size of your bottom lease in acres.

*B7 - Percent of Lease Suitable for Planting:* Enter the percentage of your lease that is suitable for planting. This is affected by composition of the bottom on your lease and will rarely be 100 percent, especially in a new lease that is in process of being developed. Hard shell on bottom provides the best substrate for planting spat on shell oysters since it keeps spat elevated and prevents them from being smothered. Sand and/or soft mud provides unsuitable substrate for planting and leads to high spat mortality and little, if any, profit. If your lease has areas of sand or mud, you may need to improve the bottom with new substrate to make the operation feasible. This increases the initial investment and startup cost and often creates difficulty in finding enough suitable shell for planting. However, you should recognize that shell for bottom stabilization is now expensive. It requires about 2240 bushels of shell to provide one inch of thickness over a single acre. To build a six inch base therefore requires emplacement of over 13,500 bushels of shell per acre. Alternatives to shell can be considered and evaluated based on cost and availability. If you need to perform bottom stabilization, be sure to fill in the appropriate cells in the **Bottom Prep** and **Capital Cost** section.

*B8 - Number of Years until Harvest Size:* Enter the number of years you estimate it will take for your crop to reach market size and quality. It is generally assumed that spat on shell bottom cultured oysters grow at about one inch per year and may therefore take two to four years to reach market size. This varies depending upon water flow and food availability. You may be able harvest a limited number of market oysters before the time period you estimate but early harvest is not accounted for in the worksheet. Additionally your location could be less acceptable and a crop could take longer than you initially estimate. As you develop and work your lease you will become more knowledgeable about production timelines and be able to apply more realistic numbers as you gain experience.

*B9 - Area of Lease Planted per Year:* This value is calculated for you based on lease size, percentage of lease suitable for planting and the number of years you estimate that it will take for your oysters to reach marketable size. It shows the total acres of your lease that should be planted each year to establish a crop with a rotation scheme similar to land-based farmers. Managing your lease similar to traditional agricultural producers will help you estimate annual production and ensure you have product to sell each year. If you were to plant the entire lease at once you could potentially only have product to sell every few years. This value is used for other calculations in the spreadsheet.

**B10 - Area of Lease Harvested per Year:** This value is calculated in the same way as the Area of Lease Planted per Year and is used for other calculations in the spreadsheet.

**B11 - Survival from Planting to Harvest:** Enter the percentage of oysters you expect to survive from spat to reach market size. This number will be influenced by the growing conditions at your site, weather, and natural mortality. Of all factors, bottom preparation is one of the most important. Oysters placed on properly prepared shell bottom will usually exhibit much higher survival than those placed on poorly prepared, soft or muddy areas. For oysters on poor bottom the survival can be as low as 0-5%. For those on well prepared bottom the figure could be 50% or higher. This figure will change – hopefully increasing – as you gain experience with raising oysters on your site and as you learn to monitor and manage factors that affect your oysters, from predation to disease. You should plan in developing a program to collect data on your lease(s) to better determine survival from seed to market. This will allow you to accurately calculate profit and create better management strategies for your business.

**“Bottom preparation is a critical factor in biological and economic survival”**



**Figure 1 Spat being transferred for planting**

**B12 - Harvest Efficiency:** It is unlikely that all oysters reaching market size on a lease will be harvested due to the inefficient nature of harvest equipment and the fact that the grower cannot see the crop in subtidal culture. Enter the percentage of oysters from your lease that you estimate you will harvest per year. Dredges or scrapes are normally used and their efficiency is based upon dredge size, tooth depth and towing speed. Commercial divers have been used to harvest oysters in portions of the Bay and represent an efficient method of removing market product. Other harvest methods may be used; however, you should test their efficiency and adjust this spreadsheet value as needed.

**B13 - Purchase Price of Spat:** Enter the price per spat from your supplier. If you are purchasing seed from a hatchery or nursery you will find the price increases with the size of the animals. This is due to the additional cost incurred by the nursery grower in caring for young seed. If you are operating your own setting system, enter the cost to produce spat from your

system. For assistance in determining cost for your spat, please see *Economics of Remote Setting in Maryland: Spreadsheet for Cost Analysis* by Parker, et al., which is available through the University of Maryland Extension website: <http://extension.umd.edu/aquaculture/oysters>

**B14 – Average yearly fuel cost:** Enter the estimated annual fuel cost. This is influenced by the size of the boat and engine you are using. It will also be influenced by how far you have to travel to your shellfish lease and how many trips you make each year for planting, harvesting and monitoring.

<b>Production Assumptions</b>		
Desired Annual Production		Bushels
Market Size Oysters Per Bushel		#
Lease Size		Acres
Percent Of Lease Suitable For Planting		
Number Of Years Until Harvest Size		
Area Of Lease Harvested Per Year		Acres
Area Of Lease Harvested Per Year		Acres
Survival From Planting To Harvest		
Harvest Efficiency		Of Oysters Harvested Per Harvestable Acre
Purchase Price Of Spat		\$ Per 1000 Spat
Average Yearly Fuel Cost		

**Marketing Assumptions:** Marketing is an important aspect of business management and one that should be given attention prior to beginning production. While market factors are highly variable they can be estimated. These estimates should be based upon the best data you can obtain. Growers raising cultchless oysters in contained systems usually aim production at raw bar markets. The higher prices they seek compensate for the higher inputs of equipment and the labor to keep containers clean.

Bottom cultured oysters are generally lower in cost and may be sold either for half-shell use or to processing plants for shucking. Both are acceptable markets and bottom producers have traditionally sold portions of their crops to multiple markets. Producers are urged to carefully investigate all potential markets to determine when prices may be higher as well as the needs and desires of potential buyers and to weigh these factors when determining a market plan.

For this section enter basic marketing assumptions as we describe each cell.

*B17 - Percentage of Oysters Sold to Half Shell Market:* Enter the percentage of your harvest you expect to sell to the half shell oyster market. In a properly managed lease where oysters have been culled at least a season prior to harvest the grower can expect some percentage of the crop to be “singles” and suitable for the sale to half shell markets. This number may vary depending upon a variety of factors. Selling to half-shell or raw bar markets generally takes more time and effort since the product should be well washed and properly containerized but may lead to a higher price received per oyster.

*B18- Percentage of Bushels Sold to Other Markets:* This number is the remainder of the crop (taken as 100%) and is calculated based on what you entered in the previous cell. “Other Markets” would be those that were sold on a “per bushel” basis. These normally include processors or shucking houses, seafood markets, or retail customers.

*B19 - Price for Half Shell Market:* Enter the price per oyster for those sold to raw bar or half shell markets. This is a standard method of selling oysters. We suggest that product sold to these markets be very clean and attractively packaged (e.g. 100 count boxes with company printed logo).

*B20 - Price for Bushel:* Enter the price per bushel you receive for oysters sold to “other” markets. Shucking houses or processing plants normally buy oysters on a “per bushel” basis. While this makes it more difficult to calculate the return per oyster, growers should attempt to keep track of the number

per bushel since smaller oysters result in higher numbers per bushel and hence a lower return per oyster. Higher prices are generally paid for oysters either with higher meat yields or at certain times of the year such as winter holidays.

**B21 - Retail Containers:** Enter the number of single oysters you will place in your retail container. This may be a bag or box. A 100 count box is common and acceptable for raw bars due to the ease of transport and storage.

**B22 - Cost of Retail Containers:** Enter the cost for each retail container you use. This may be obtained from box manufacturers and will vary based upon size, printing, quantity purchased and other factors. Growers aiming at raw bar markets should understand that the higher cost of printing logos and product information on containers can be a cost-effective means of advertising.

**B23 - Marketing Expenses:** Enter the amount of money you plan to spend each year marketing your products. Expenses could include printing and mailing brochures to potential clients, advertising in trade journals or electronic advertising. It could also include the expenses to conduct sales trips to visit potential clients, shipping of samples and related costs of getting your product into markets.

<b>Marketing Assumptions</b>		
Percentage Of Oysters Sold To Half Shell Market		Crop Sold To Half Shell Market
		Crop Sold By Bushel To Other Markets
Percentage Of Bushels Sold To Other Markets		
Price For Half Shell Market		\$ Per Oyster
Price For Bushel		\$ Per Bushel
Retail Containers		Count Box
Cost Of Retail Containers		Per Container
Marketing Expenses		\$ Per Year

**Other Cost Assumptions:** Other expenses are associated with oyster aquaculture production but are not reflected in the previous sections. This section helps determine the costs associated with bottom culture of spat on shell oysters not directly related to production. Each cell is described.

**G4 - Lease Rent:** This is the annual lease rent charged by the State of Maryland in dollars per acre. Submerged Land Lease rent is currently \$3.50 per acre and payable for the year ahead. Lease rent must be paid for the lease to remain active. Failure to pay will result in termination of the lease agreement.

**G5 - General Labor Rate:** Enter the hourly amount you will pay for general labor. This includes labor to wash and containerize cultch, load and unload setting tanks, renovate bottom substrate and plant oysters or shell. It may include day laborers or seasonal workers and should include all charges incurred for the labor assessed on an hourly basis.

**G6 – General Labor Hours per Week:** Enter the number of hours you will use general labor for each week unskilled labor will be utilized.

**G7 – General Labor Weeks per Year:** Enter the number of weeks per year in which you will employ general labor.

**G8 -Supervisory Labor Rate:** Enter the hourly amount you will pay for skilled labor. Skilled labor is considered someone who is a manager or supervisor and responsible for daily operations. This could



also be a working foreman. If you do not employ a manager, supervisor, or foreman you may enter an hourly salary rate for yourself as the owner, if you choose to take one.

*G9 Supervisory Labor Hours per Week:* Enter the number of hours per week you will utilize skilled labor.

*G10 Supervisory Labor Weeks per Year:* Enter the number of weeks per year in which you will employ skilled labor.

*G11 - Monitoring Cost:* This is a yearly cost to monitor your lease to ensure its health and productivity. This may include vessel operations or specialized equipment (e.g., salinity or dissolved oxygen meters) to monitor the crop or deter theft (e.g., cameras or radar). It may include disease analysis costs to assess the health of your crop against MSX and Dermo, the two most prevalent oyster diseases in Maryland. It could include vessel operations to obtain samples for data on growth and survival, determine meat quality and other factors affecting the crop. This is an example of an estimated cost. These costs become more precise as you gain experience in your business.

***Monitoring oysters for disease, growth and survival provides critical management data***

*G12 - Insurance:* Enter the annual cost of insurance for your aquaculture business which may include commercial or product liability, named perils hull, Protection & Indemnity for crew members, crop insurance and other types. Commercial liability insurance is required in Maryland if a portion of your lease uses water column production methods; however it is not required for traditional bottom culture.



**Figure 2** Oysters can be sold individually for raw bars or in bulk for shucking

*G13 – Yearly Permit Fees:* Enter the cost of any yearly permit fees you need to operate your farm.

*G14 - Overhead:* Enter a percentage for additional overhead to operate your business. This will be calculated based on costs directly related to production on your lease and may include phone and internet services, office supplies, utilities, site maintenance, dockage, etc.

*G15 - Interest on Operating Funds:* If you have an operating loan, enter the annual interest rate.

*G16 - Yearly Loan Payments:* Enter the total of all loan payments you make per year for your operation. These may include loans for equipment, inputs such as shell for bottom stabilization and setting or startup capital. If you have low interest loans a government agency or the Maryland Agricultural and Resource-Based Industry Development Corporation (MARBIDCO), the annual payments should be included in this cell.

<b>Other Cost Assumptions</b>		
Lease Rent		\$ Per Acre
Unskilled Labor Rate		\$ Per Hour
Unskilled Labor Hours Per Week		
Unskilled Labor Weeks Per Year		
Skilled Labor Rate		\$ Per Hour
Skilled Labor Hours Per Week		
Skilled Labor Weeks Per Year		
Monitoring Cost		\$ Per Year
Insurance		\$ Per Year
Yearly Permit Fees		
Overhead		
Interest On Operating Funds		
Yearly Loan Payments		

**Calculated Values:** This section contains items which have been calculated for you based on the figures that you provided in yellow cells. These are important for your production and are used in other locations in the spreadsheet. These numbers will change if values in the yellow cells are modified. These cells give you a better idea of the volume of material required to develop your business and the resulting harvests.

*G16 - Total Acres of Lease Suitable for Planting:* This shows the total usable area of your lease.

*G17 - Total Number of Oysters Harvested per Year:* This shows the projected total number of oysters that will be available for harvest from your lease annually.

*G18 - Total Bushels Harvested per Year:* This cell calculates the projected total bushels of oysters harvested off your lease each year.

*G19 - Total Oysters Harvested per Acre:* This cell calculates the projected total of oysters harvested annually on a per acre basis. It is used to determine production values for different areas of your lease.

*G20 - Total Bushels Harvested per Acre:* This shows the projected total of oysters harvested annually per acre. This is useful for determining production values for different areas of your lease.

*G21 - Annual Planting Rate:* This shows how many spat will need to be planted per acre to reach the harvest goal.

*G22 - Total Spat Needed:* Calculates the number of spat that will be required to be purchased from a supplier or produced through setting in your remote setting system. If you are setting your own you will need to calculate the requirement for containerized cultch and larvae to reach your production goal.

## Bottom Prep and Capital Cost Tab:

This tab helps you determine the total startup cost for your aquaculture operation and additional costs related to bottom stabilization and will help you calculate annual depreciation expenses for your equipment. Yellow cells are again used to indicate where you should input information that will be used in the resulting calculations. The worksheet is divided into two sections. Section One is for items required to produce shellfish while Section Two includes optional items. Optional items are not required for production, but could be used for future expansion. **If you do not need to purchase an item listed in the spreadsheet put a "0" in the Quantity column next to that item.** Additional rows are provided to add other equipment specific to your operation.

*Column A - Item:* Space has been provided at the bottom to enter additional items needed in your operation that are not currently listed.

*Column B - Quantify:* Enter the number of those items needed.

*Column D - Cost per unit:* Enter the cost for each item listed. Prices can be obtained from dealers and distributors of the equipment or catalogs and online information. You may also find information on items such as vessels from trade publications or by discussions with others in the business. Trade shows offer a good opportunity to see and discuss prices with a multitude of suppliers at one time.

*Column E - Total Cost:* This column is calculated based on the cost and number of items you entered. The column calculates the total cost of all items at its end which allows you to see the value of the equipment that you will need for your business.

*Column F - Years of useful life:* Enter the length of time each item is considered to be useful before it is determined that it should be replaced. This will determine annual depreciation. This figure can be determined by experience or by conferring with others who have used it in similar operations.

*Column G – Salvage Value:* This is the item value determined as to what it will be worth after its useful life. In other words, this is how much you believe the item can be sold for after its use. For items such as boats or trucks there may be a sales or trade-in value of the item if you replace it. In the case of equipment that will endure hard use and be discarded, there would be no salvage value.

*Column H - Percentage of Equipment Time Devoted to Aquaculture:* Enter the estimated time your equipment will be used in your aquaculture operation. For example, if you purchase a vehicle and only use it for your aquaculture operation, the number in that cell would be 100%. Conversely if you own a front end loader and use it equally between your aquaculture operation and a seafood business the percentage of time devoted to aquaculture would be 50%. This is used to determine the correct depreciation per year that affects only the business being analyzed.

*Column I - Depreciation per year:* This column is calculated based on the total cost of the items minus their salvage value over their useful life. This spreadsheet uses straight line depreciation; that is, the value of the item is assumed to decrease equally over each year of its useful life. Depreciation is the "non cash" expense of operating equipment and is an important consideration in managing your business. It is an important item in tax accounting. The column totals all annual depreciation for you at the bottom.

*Depreciation is an  
important factor in  
analyzing your business*

Required Items	Quantity	Unit	Cost per unit	Total Cost	Years Useful Life	Salvage Value	Percentage of time devoted to aquaculture	Yearly Depreciation
Vessel				\$ -				
Harvest baskets				\$ -				
Truck				\$ -				
Dredge				\$ -				
				\$ -				
				\$ -				
				\$ -				
<b>Required Item Total</b>				\$ -				\$ -
Optional Items	Quantity	Unit	Cost per unit	Total Cost	Years Useful Life	Salvage Value	Percentage of time devoted to aquaculture	Yearly Depreciation
Barge								
Front End Loader								
Refrigeration Unit								
Shellwasher								
Sorting Tables								
Bottom stabilization shell								
Bottom stabilization services								
<b>Optional Item Total</b>				\$ -				\$ -
<b>Grand Total</b>				\$ -				\$ -

## Yearly Enterprise Budget Tab:

This tab shows the estimated costs and returns for your aquaculture operation based on information you provided in the **Assumptions** tab. Changing data in that tab will cause the calculations in these cells to be modified, which may be useful in determining where the costs will be allocated. The data may be used as an income statement in a business plan or for a loan application.

There are *Fixed* and *Variable* costs involved in conducting a business. Fixed costs are those that will not change even if there is little or no activity connected with the operation. Such items as lease fees, insurance and interest are required to be paid and must be continued unless the business ceases to exist. Variable costs increase with the amount of activity the business undergoes. For example, the more planting and harvesting that takes place, the more fuel and labor will be needed. Likewise, the greater the volume of oysters that are packaged and sold, the greater the number of retail containers would be needed to transport them.

This tab assumes that your operation is in full production. In the time before your first crop of oysters reaches market size, approximately the same expenses are incurred, **however, no income will be generated**. Additional information is shown regarding cost to each oyster and bushel harvested. It also shows the percentage of total annual cost for each input. Additional rows (i.e. "Other") have been provided for you to input costs that may be specific to your business but have not already been included in the spreadsheet. **Annual depreciation is not used** in the cost analysis since it is a **non-cash expense** however it is noted below the annual cost sheet for your information.

Below the yearly budget is a *break even analysis*. This shows the total cost that it will take to produce each oyster and bushel in your business. It also shows the return to the business (before taxes) on those oysters for each shellstock and bushel sold based on prices you entered in the **Assumptions Tab**. This will show you the calculated spread between your cost of producing the oysters and the return that you will get from the sale of your products.

## Yearly Cash Flow Analysis Tab

This tab shows the calculated initial bottom preparation and capital investment cost that has been incurred by the business (**cell F4**). It also shows which year harvest will begin (**cell C5**). There is a basic 10 year *cash flow analysis* showing total income, expenses incurred, and your cash balance before taxes. The spreadsheet also estimates your 10 year *internal rate of return* (ROR) for the operation (**cell D20**). This number is used to compare the profitability of different investments. For example, if you are deciding which of several business opportunities to invest in, you would generate this type of information to compare potential profitability of each in reaching your decision. Of course, this can also be used to simply project the profitability of this single enterprise if you are trying to determine whether it would be worth your effort to engage in oyster aquaculture.

A graph is provided that tracks yearly cash balance in your operation. The calculation is based upon data you provided in the spreadsheet. As you can see in the example, your business will operate with a decreasing cash balance until harvests begin. This is normal for an enterprise where it takes several years for the crop to grow and reach market. This shows approximately how long it will take for you to recoup your initial investment and for the business to become self-sustaining. In this instance, you have a crop takes several years to get to market size and quality therefore more money will be spent than returned through sales. Once returns begin and the animals exceed the break-even costs shown previously, profit begins to accrue. Typically crops like oysters are into the fourth or fifth production year before profit is realized. The ROR is used to compare a variety of investments to determine where it would be most profitable to place your money.

## Sensitivity Analysis Tab

A *sensitivity analysis* provides an easy way to view the effects of changes to your system without having to change the entire worksheet. In this case, the effects of total annual production and a weighted average price per bushel on pre-tax profit are represented. The production costs based on your inputs are located in the **green cell** in the center of the table.

The weighted average price per bushel is calculated at the top of the sheet based on information you entered in the **Assumptions** tab. It is calculated based on the average number of market sized oysters in a bushel entered in **cell B5**, the price of each of your product entered in **cells B24** and **B25**, and the percentage of oysters sold to each market entered in **cells B22** and **B23** of the **Assumptions** tab. The weighted average price per bushel is a way to easily compare different production levels and prices. In most instances you will receive a different price for oysters destined for the half shell market than for other markets such as processing plants. This method weights the price per oyster or price per bushel based on a percentage of your sales. For example, if 25% of your oysters are sold as single oysters destined for the half shell market, the price received for them has only a 25% influence on the average price. If you were to sell 100% of your oysters to those other markets the average weighted price per bushel would be what you entered on the **Assumptions** page in **cell B25**.

This sensitivity analysis assumes that production costs will remain the same for each of the annual production scenarios since all animals are raised in bottom culture. Differences in annual production scenarios can be attributed to survival from spat to market oysters and/or harvest efficiency. By increasing survival or harvest efficiency you could potentially increase annual production without increasing cost.



Figure 3 Remote Setting can provide cost-effective seed for planting your lease

when supply is lower, as in summer months when public oyster season is closed in many states while oysters reproduce. Quality can also affect the price received for oysters with animals with higher meat yields receiving higher prices for shucked, or processed, product. A key factor in developing a profitable oyster aquaculture venture is in becoming familiar with the factors affecting the marketplace and selling product to realize maximum returns.

## Conclusion

This spreadsheet has been developed to aid you in building a profitable oyster aquaculture business. As you gain confidence with the data you develop and place in cells you will be able to use it as an integral part of your operation. It will guide you in seeking out and finding realistic figures on costs involved in building a business as well as showing the effects of costs and returns to overall profitability. Please feel free to contact the developers with any questions or comments that you may have. We hope you are successful in building a profitable oyster aquaculture business that can benefit our **Economy** and **Employment** while aiding the **Environment**.

This would have positive effects on pre-tax profit. Conversely if you had worse survival or didn't harvest efficiently, a negative effect would be seen on pre-tax profit.

This analysis also shows how different weighted average prices will affect your pre-tax profit. Weighted average price per bushel may be influenced by the number of oysters sold to different markets or to finding markets with higher or lower prices. It is common for oysters be priced differently at certain times of the year, for instance during the Thanksgiving to Christmas holiday season or during the Lenten period in spring. They also receive higher prices



Figure 4 Producing quality oysters from your lease

## References

### Other references on oyster production costs:

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## Notes