University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE
HORN POINT LABORATORY

Calculating Spat on Shell Production

You will need the following information:

*__Total number of bushels of shell__ you have in the tank

*__Average number of shells in a bushel__
-To obtain this number, count the total number of shells in 3 separate bushel baskets.
-Divide the total number counted by 3 to get an average number off shells per bushel.
Example: bushel 1 counts =450 shells
bushel 2 counts =478 shells
bushel 3 counts =542 shells
Total shells counted = 1470
*1470 divided by 3 bushels counted = Average of **490 shells per bushel***
*1470 ÷ 3 = **490***

*Calculate **total number of shells in the tank**
-Multiply total number of bushels in tank by average number of shells per bushel.
*Example: 120 bushels in tank x 490 average shells per bushel = **58,800 shells** total*
*120 × 490 = **58,800***

*Calculate **average number of spat per shell**
-To obtain this number, count the total number of spat on 10-30 shells randomly selected from the tank.
-Divide the total number of spat counted by the total number of shells counted to get an average number of spat per shell
Example: counted a total of 366 spat on 30 shells, 366 divided by 30 = 12.2
Average spat per shell is 12.2
*366 ÷ 30 = **12.2***

*Calculate **total number of spat in tank**
-Multiply total number of shells in the tank by the average spat per shell
- *Example: 58,800 shells multiplied by 12.2 spat per shell = 717,360 total spat*
717,360 total spat in tank
*58,800 × 12.2 = **717,360***

*Calculate **setting efficiency of spat in tank**
-Divide total spat in tank by the total number of eyed larvae introduced to the tank
-Multiply number by 100% to obtain setting efficiency
Spat out divided by larvae in multiplied by 100 = setting efficiency
Example: 717,360 total spat divided by 3 million eyed larvae introduced to tank
717,360 divided by 3,000,000 larvae = 0.239
Multiply 0.239 by 100 = 23.9% setting efficiency
717,360 ÷ 3,000,000 = 0.239
0.239 × 100 = 23.9%

2020 Horns Point Road, Cambridge, MD 21613-0775
Phone: 410-228-8200 Fax: 410-221-8490 www.umces.edu

*Calculate **total number of spat in tank without spat counts performed**

-Must know setting efficiency and total number of eyed larvae introduced to tank

-Multiply given setting efficiency by the total number of larvae introduced to the tank

-Divide by 100 to obtain number of spat in tank

Example: 30% setting efficiency and 3 million eyed larvae introduced to tank

 # spat in tank = Multiply 30 by 3, then divide by 100

 # spat in tank = 90 divided by 100 = 0.9 million spat

Multiply 0.9 million by 1,000,000 = 900,000 spat in tank

(30✖ 3) ➗ 100 = 0.9

0.9 ✖ 1,000,000 = 900,000