Early VIMS Work on Hard Clams Pays Off

By Thomas J. Murray

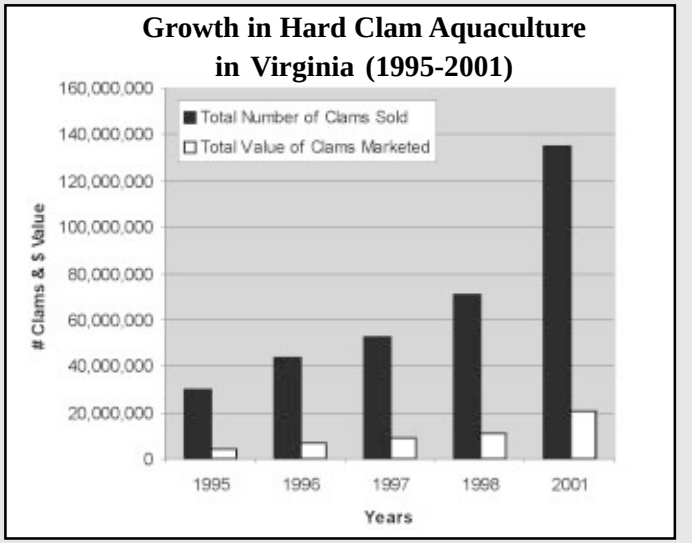
"Hard Clam Culture Method Developed at VIMS." So declared the headline in a 1970 news release from Gloucester Point, Virginia.[1] The story made a little "splash" at the time, but since then its significance has become much clearer. The aquaculture methods developed by VIMS under the leadership of Mike Castagna in the late 1960s have provided the technology necessary for an aquaculture industry that has evolved into a multi-million-dollar economic engine on Virginia's Eastern Shore. The hard clam (*Mercenaria mercenaria*) is currently considered the most valuable commodity among the Eastern Shore's diverse agricultural portfolio—worth over $20 million at the "farm gate" last year.

Early VIMS experiments with spreading shell, gravel, or other materials on submerged bottom led to the first successful technology for protecting hard clam seed from natural enemies. Predators (primarily blue crabs, but also cownose rays and others) destroy nearly all unprotected clams smaller than one inch, the most common market size for hard clams. Spreading aggregates over sand or mud bottom before planting seed gave the clams added protection, which made large-scale planting economically feasible.

In addition to enhancing production from commercial clam beds, associated techniques developed by VIMS during the late 1960s provided the methods that emerging clam hatcheries needed to produce a virtually limitless supply of seeds from selected, fast-growing parent stock. Further milestones in applied research by VIMS faculty also provided the means to hold millions of young clams in trays to avoid predation before setting them out on newly developed aggregates.

The growth of the aquaculture clam industry in Virginia has added immense value to the state's seafood marketplace. Today, watermen continue to harvest hard clams from the state's public resources, while watermen-farmers provide vast quantities of additional quality seafood to consumers.

Looking back to the seafood supply situation at the time of VIMS' groundbreaking developments, Virginia's wild hard clam harvests fluctuated annually between an estimated 1 million and 3 million clams. In 2001, the most recent year for which VMRC has reported on wild clam harvests, watermen harvested fewer than 5 million clams (457,524 lbs.) from the traditional (wild) public fishery.



Contrast the wild harvest with the continued expansion of the clam-farm sector shown to the right. Currently, Virginia producers estimate that 565 million hard clams are covered by the experimental crop insurance program on the Eastern Shore of Virginia, compared to 415.4 million in 2001[2]. For the current (2002) crop year, Virginia clam farmers have purchased 74 policies on 191 leases with a total insurance liability of $29.5 million, compared to 55 policies on 54 leases with a total liability of $13.9 for the 2000 crop year.[2] Knowledgeable sources estimate that, with a 60% overall survival rate representing 2.5 year classes, more than 135 million clams are now produced annually by the Eastern Shore of Virginia industry for a national seafood marketplace.

Industry representatives and scientists further estimate that in order to continue crop planting at the current level, 350 million seed clams will be needed annually by Virginia clam farms. Thanks to hatchery and grow-out techniques first developed by VIMS in the late 1960s, the Virginia aquaculture industry clearly has such a capacity. The prospect for this commodity maintaining its pre-eminent position among agricultural crops in Tidewater Virginia is quite good.

Sea Grant

[1]Marine Resources Advisory Series. No. 4, 1970. Michael A. Castagna, Scientist-In-Charge, VIMS Eastern Shore Laboratory. Virginia Institute of Marine Science, Gloucester Point Virginia

[2]*Virginia Shellfish Growers Association* Newsletter. February 2002. Not all growers are insured but it is felt that the great majority of planters are covered at some level by the pilot crop insurance program.

[3]Federal Crop Insurance Corporation Report. 3/4/02