



## Triploid Trout Fact Sheet

### Are triploid trout genetically modified organisms?

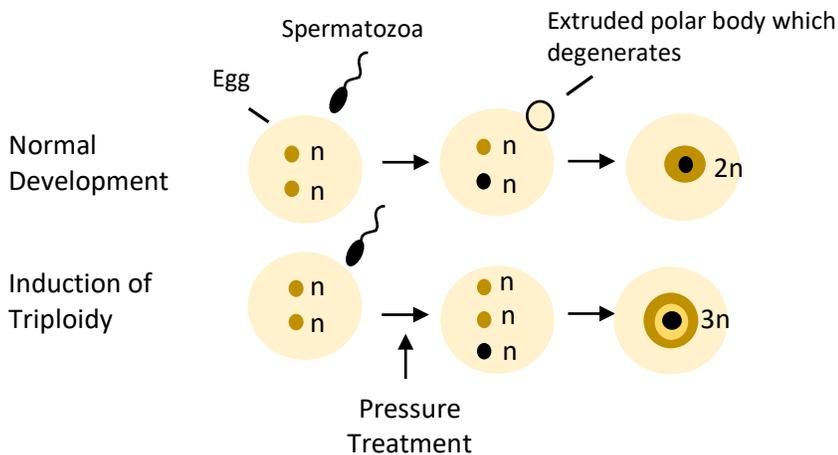
Triploid trout have three sets of chromosomes instead of two. Triploid fish are not genetically modified organisms (GMOs). A GMO contains genetic material that has been altered in some way. Often GMOs contain desired traits from other organisms' DNA. An example of a GMO is maize (corn). Some strains of this crop have been genetically modified to include DNA which increases resistance to pests or herbicides. Unlike GMOs, the DNA of triploid trout has not been edited or modified in any way. The extra set of genetic material simply causes infertility.

### Do triploid trout look or act differently than diploid trout?

Triploid trout eat, grow and taste the same as diploid trout but are incapable of passing on their genetic material through reproduction. Males still produce gonads and exhibit spawning behavior while females do not. The average angler is not able to tell the difference between triploid and diploid trout.

### How are triploid trout produced?

Triploid trout retain an extra chromosome that would normally be expelled. One way to accomplish this is to use pressure treatment. A fertilized egg is given time to produce what is known as a polar body with a third chromosome. Rather than allow this chromosome to be expelled pressure is applied causing the polar body to remain inside the egg. The ploidy of trout is later tested using a blood sample.



Press used to apply pressure to eggs.

### Why produce triploid trout?

Triploid trout are a great tool used by biologists all over the world. Because these trout are sterile they will not reproduce with wild fish populations. The stocking of triploid fish provides opportunities for anglers who want to catch more fish in our rivers and lakes while protecting the genetics of our wild fish populations.

### **Why stock triploid trout?**

In Vermont, our native brook trout have a genome that makes them well adapted to their own local environment. Hatchery-raised brook trout have a different genome than the local, wild population. When stocked trout reproduce with wild trout, they introduce foreign genetic material, which can reduce the fitness and long-term survival of the wild population. To protect our native trout, the Vermont Fish and Wildlife Department has chosen to 1.) stock triploid trout which cannot reproduce with wild populations and 2.) avoid stocking of areas with wild trout to minimize predation and competition for food and habitat.