IDEALG FORUM 2018

Seaweed Farming versus Climatic Disorders and Erratic Predation

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C-Weed Aquaculture is running a 12 Ha offshore seaweed farm in St Malo- Brittany. Current production is averaging 40-45 m.t wt.wg, consisting mainly in kelplike species.
Since we initiated culture in 1983, no major problems have occurred in terms of biology at any step in the cultivation cycle.

However in the last 4 years a new pattern tends to appear with the occurrence of climatic disorders. In 2013-14 season the production collapsed from 45 mt.(wt.wg) down to 13 mt. due to recurrent poor light and persistent rain spreading over the autumn and the springtime.
In the 2017-18 cultivation cycle similar conditions repeated with recurrent poor light and persistent rain starting from mid July 2017 until early April 2018. At this stage 3 successive sets of plantlets had to be deployed at sea, each replacing the former suffering no vegetative growth.

By January 2018 the season was definitely jeopardised in terms of biomass, with a better estimation for 15 mt.wt instead of the 45mt. planned.

Moreover at harvesting time the cultures were suddenly devastated by gastropods that settled on the plants and grazed the thalli.

Grazing was sudden, massive and extremely fast. It interested all species.

A total crop of 6 mt. was recorded for this season. Such an event never had occurred since we initiated cultures on this site in 1983.

The grazer species is not yet identified.
Undaria culture in routine
May 2018: grazing begins with multiple holes (left), resulting in heavy loss in material (right).
Within 6 days the plants were almost destroyed, the thickest parts remaining.
Aspect of a long line before and after grazing
Saccharina latissima : culture in routine
Saccharina latissima after grazing (left)
Laminaria digitata after grazing (right).
CONSEQUENCES
No biomass production
-Orders are not satisfied
-Labour and investment lost
-One year project lost (saccharina latissima production for GENIALG E.U project)

but overall:
-it becomes impossible to plan a production
-the 2018-2019 cultivation cycle is operated under anxious pressure.
Possible actions are very restrained:
- monitoring seawater samples for detection of gastropods larvae: protocol to be assessed. This would allow to detect time and extension of spawning in the surrounding of the culture and possibly to identify the species (this point requiring accurate expertise).

But it remains IMPOSSIBLE to control such a natural event in the open, especially under such a large extension.
Thank you for your attention