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ANTIOXIDANT POTENTIAL OF ARTEPILLIN C AND CURCUMINOIDS MIXTURE THROUGH KRL TEST AND THEIR DIETARY IMPACT ON GROWTH IN GILTHEAD SEA BREAM (*S. AURATA*) UNDER COLD STRESS

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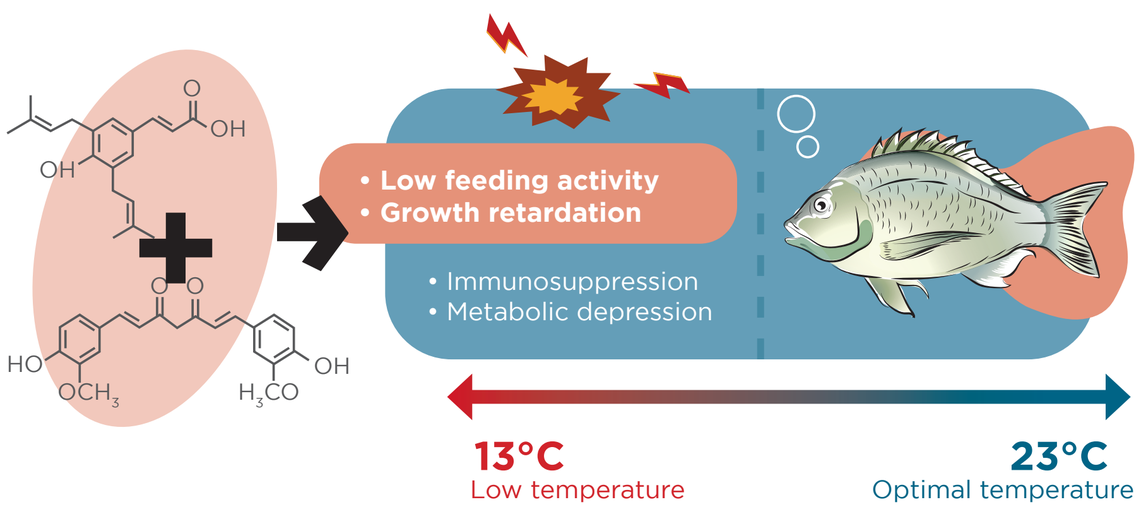
- Phyto AquaNity showed a higher antioxidant power in the range of 35 to 100 mg/L compared to Vitamin C.
- Improved growth performance was observed at the optimal temperature (23°C) and very low temperature of 13°C ($p<0.05$).
- Antioxidant activity of Phyto AquaNity was expressed through improved growth performance under low temperature stress conditions.

LOW TEMPERATURE & « WINTER DISEASE »

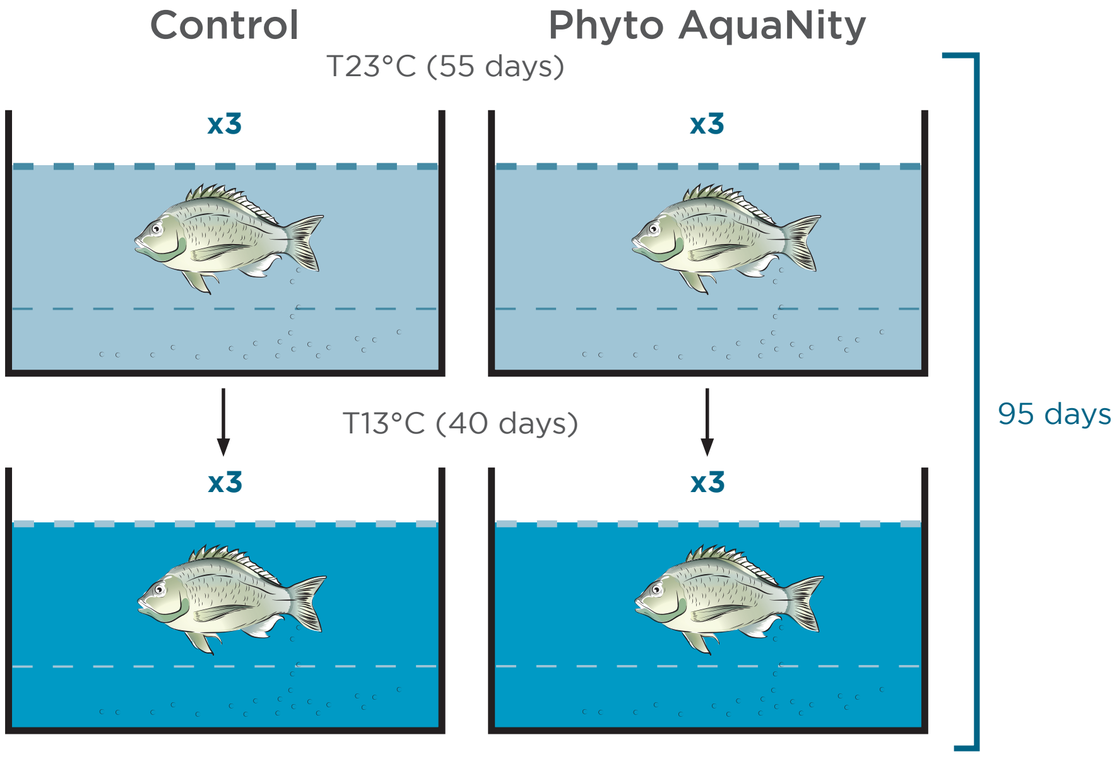


- Sea bream are highly sensitive to low temperature (<15°C).
- This sensitivity affects the well-being of the fish and may contribute to mortalities.
- This stressful condition is a risk factor for a pathology commonly called «Winter disease» characterized by a multifactorial dysfunction including temperature decrease [1].

CAN STANDARDIZED BOTANICAL COMPOUNDS RICH IN ARTEPILLIN C AND CURCUMINOIDS (PHYTO AQUANITY) REDUCE THE EFFECT OF THIS THERMAL STRESS?

MATERIAL & METHODS

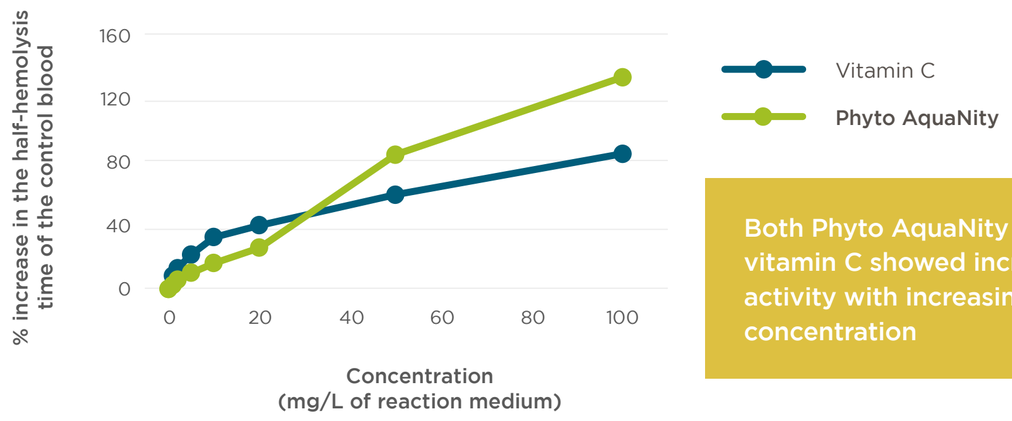
- **2 phases**: 55 days at 23°C followed by 40 days at 13°C
- 26 fish of average weight 71.49 ± 0.69 g per tank (x3 tanks)
- Salinity (38‰), Photoperiod (12/12)
- **Control diet**: (min 46% Protein & Energy 20 KJ/g)
- **Phyto diet**: control + **Phyto AquaNity** (1 g/kg)



RESULTS & DISCUSSION

1. ANTIOXIDANT POTENTIAL OF PHYTO AQUANITY - OXYLAB

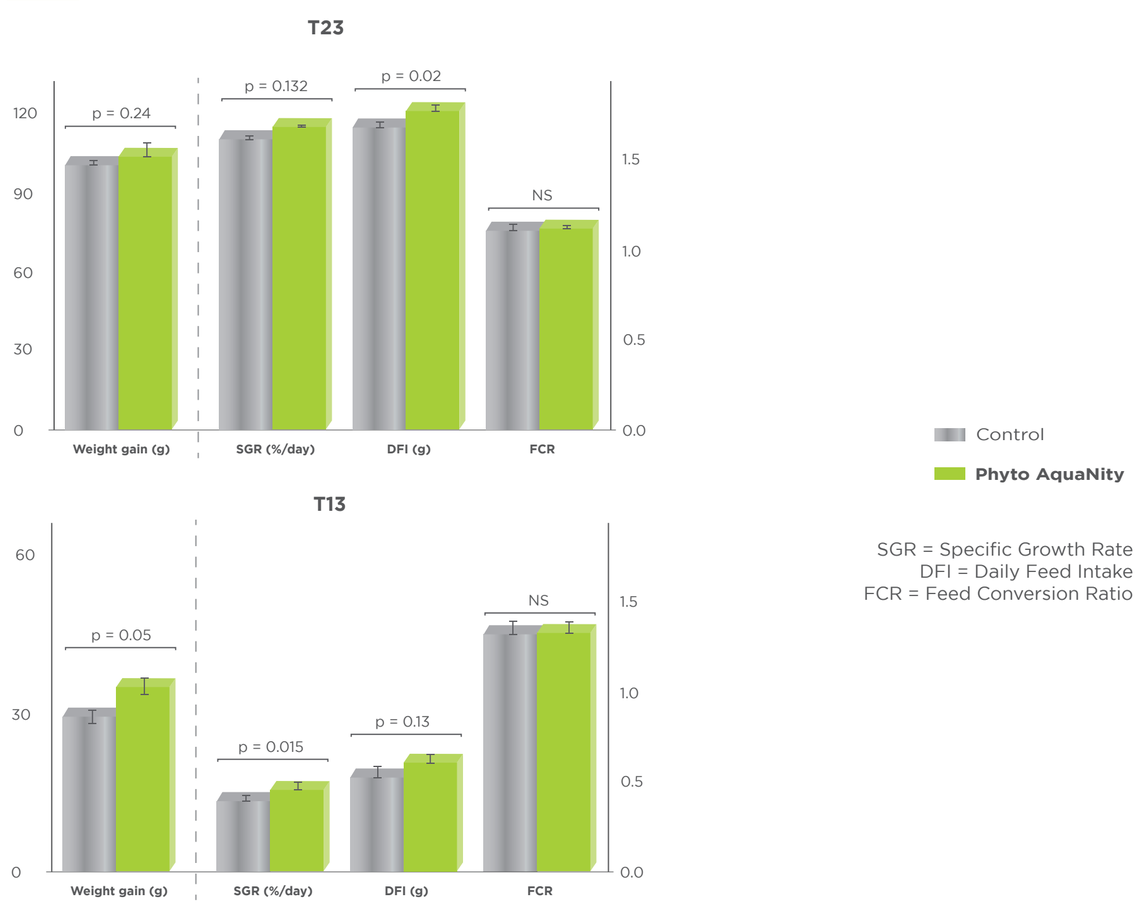
Fig.1 ANTIOXIDANT CAPACITY OF PHYTO AQUANITY VS. VITAMIN C, VIA KRL TEST



Both Phyto AquaNity and vitamin C showed increased activity with increasing concentration

2. PERFORMANCES AT 2 TEMPERATURES

Fig.2 GROWTH PERFORMANCE AND FEED EFFICACY AT TWO DIFFERENT TEMPERATURES (13°C AND 23°C)



SGR = Specific Growth Rate
DFI = Daily Feed Intake
FCR = Feed Conversion Ratio

The daily weight gain (WG) and specific growth rate (SGR) were both higher at the optimal temperature of 23°C ($p>0.05$).
Phyto AquaNity supplementation significantly improved the DWG and SGR at the lower temperature of 13°C ($p<0.05$).
In addition, Phyto AquaNity enhanced the daily feed intake (DFI) at both tested temperatures.
No significant difference was observed for the feed conversion ratio (FCR) at each temperature ($p>0.05$). No mortality was recorded during the trial.

Phyto AquaNity demonstrated strong antioxidant activity, which may explain the improved growth performance observed in sea bream at the lower temperature of 13°C.

These results confirm the mechanisms of action[2] on the interaction of curcuminoids and Artepillin C.
Additionally, its immunomodulatory activity under environmental and infectious stress has been proven in several other species, including tilapia, salmon, and shrimp [3].

REFERENCES

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