



## SUDEVAB

### Sustainable Development of European SMEs Engaged in Abalone Aquaculture

#### The Challenge

SUDEVAB brings together the main producing SMEs and leading RTD Providers from the European abalone aquaculture sector, for a project that will have a significant impact for developing sustainable abalone aquaculture in Europe.

Abalone species have been considered potential candidate for aquaculture for a long time, and in recent years, abalone aquaculture in other parts of the world has surged ahead.

However, in Europe production has been restricted by the lack of reasonably priced juveniles, technological problems, and legislative issues. The opportunity presented by the FP7 call "Research for the Benefit of SMEs" provides the partners in SUDEVAB with exactly the right vehicle to develop this young aquaculture sector, by harnessing some of the best shellfish aquaculture research facilities and researchers to solve the significant technological problems facing producers, increasing production and competitiveness.

#### Project Objective

The core of the research work of SUDEVAB is aimed at solving the main technical problems encountered by abalone growers in Europe in the areas of

- pathology
- genetics
- nutrition
- sustainable culture technology

However, abalone producers also have serious issues which need to be resolved alongside the main research work including; legislation, hygiene and food safety and marketing issues. These are blended in the research programme to maximise the results, and raise awareness of the project as a whole.

#### Key Points

- Harmonisation and rationalisation of legislative issues that restrict and impact on abalone culture in Europe
- Reduction of significant technological barriers to abalone culture by research of key issues identified by the production sector SMEs
- Reduction of the economic costs of abalone production increasing competitiveness of European producer SMEs



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#### EATiP Thematic Area of Relevance

**TA1:** Product Quality, Consumer Safety and Health

**TA2:** Technology and Systems

**TA3:** Managing the Biological Lifecycle

**TA4:** Sustainable Feed Production

**TA5:** Integration with the Environment

**TA6:** Knowledge Management

**TA7:** Aquatic Animal Health and Welfare

**TA8:** Socio-Economics and Management

#### Key Words

Abalone, shellfish legislation, shellfish aquaculture, sustainable abalone aquaculture

#### Project Information

**Contract number:**

222156

**Contract type:**

Research for SME

**Research area:**

SME-1 Research for SMEs

**Duration:**

30 months (02/06/2008 – 01/12/2010)

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- Creation of links between the consumers and producer SMEs to ensure the consumers gain knowledge and confidence of abalone products, increasing marketability and economic returns
- Enhancement of the cooperation within the abalone production sector by the scoping of an abalone producers organisation which can encourage the sharing of knowledge and technology as well as assist in marketing of production
- Creation of dissemination opportunities which allows open discussions with other stakeholders and enhances network opportunities for the participants of SUDEVAB for future business development

## Key New Knowledge Expected

- **Legislation harmonisation:**  
A series of key recommendations will be supplied to the EU and member States controlling authorities.
- **Hygiene and food safety for abalone products:**  
Base-line data will be produced demonstrating the differences between bivalves and gastropods grown in the same environmental conditions. Moreover, guidelines for safe and hygienic production methods will be developed, including the tests required to ensure products meet these criteria.
- **Pathology:**  
The infection transmitters of *Vibrio* and viral diseases will be investigated and methods for detection will be developed jointly with systems for treatment.
- **Genetics:**  
The genetics of the main families of abalone in Europe will be catalogued with the aim to eliminate the potential for in-breeding. At the same time, data will be produced on the families' growth potential and disease resistance.
- **Nutrition:**  
Natural seaweed resources will be evaluated for the nutritional values required for optimum abalone growth. Utilising these resources an eco-artificial feed will be produced.
- **Economically sustainable production systems:**  
Development of less expensive and more energy efficient on-growing systems.
- **Marketing and Product Placement:**  
New marketing strategies will be developed to promote abalone

## Potential Impacts



### Policy

- Recommendations will be submitted to the EC and the relevant States, to ensure harmonisation in legislation that is relevant to abalone production, sites and methods.  
A framework for dialogue will be set in place that will result in a more level operating environment for abalone producers; enhancing competitiveness and encouraging trade.



### SME

- With respect to hygiene and food safety the difference between abalone and bivalves and therefore the difference in contamination risks will be demonstrated. With diversification and risk reduction, the potential for increased economic efficiencies exist for producers, allowing investment and promoting growth.  
Producers will be able to promote abalone as an alternative shellfish product to markets and commercial operators will have the opportunity to diversify their production with abalone. This will enhance their potential commercial returns as abalone is a high value species and at the same time reduce their risks from only culturing bivalves.
- Pathology - *Vibrio* and viral diseases will be thoroughly studied aiming to a 20% reduction in mortality rates, which would have significant economic consequences for all producers.
- Genetics - Amelioration of economical viability through selection of faster growers as potential brood-stock material.

- Nutrition - Comparison of the economics of production and the value of harvested vs. cultured seaweeds to estimate best-fit solutions for producers, in conjunction with availability, local legislation and logistics of supply, to improve efficiency and reduce production costs. Moreover, the production of an eco-artificial feed will have marketing benefits for consumers who are increasingly environmentally sensitive.
- Sustainable production technology – The identification of competitive technology and systems and of best shellfish production strategies (including poly-culture production) will increase availability of juveniles, market potential and market penetration and ultimately improve the economic return of producers.
- Marketing - the European abalone will be marketed as a new seafood product with high hygiene and food safety standards, meeting consumers' requirements. Criteria for eco-certification will be established and direct actions involving chefs and the gourmet catering sector will raise consumers' awareness and appreciation.
- Producer's Organisation (PO) – A formation of a producer's organisation will actively bring producers together and promote the product and the market simultaneously.

## Related Publications/Projects

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2010 *Mol Ecol Res* 10 : 751-754 Isolation and characterization of eight microsatellite loci in the European abalone, *Haliotis tuberculata* Valérie Roussel, Sylvain Huchette and Alain van Wormhoudt

2010 *Mar Biotech* (en révision) Mitochondrial DNA introgression in the European abalone *Haliotis tuberculata tuberculata*: evidence for experimental mtDNA paternal inheritance and a natural hybrid sequence. Alain Van Wormhoudt, Valérie Roussel, Gercende Courtois and Sylvain Huchette

Roussel V, Huchette S, A Van Wormhoudt Heritability of growth parameters in *Haliotis tuberculata* Aquaculture (submitted May 2010)

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V. Roussel, Huchette S. and van Wormhoudt A. Phylogeny And Genetic Resources of European Abalone (*Haliotis Tuberculata*) – 9th World Congress on Genetics applied to livestock production, Leipzig, August 1-6 2010. Full proceedings to be published.

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