

DISCOBIOL JSP.

Joint Study Project on the use of chemical dispersion in coastal areas

CONTEXT

Dispersants are known to be an appropriate response option offshore where dilution conditions are infinite and allow dispersed oil concentrations to decrease rapidly under environmental harmful levels. In coastal areas where dilution can be restricted due to limited depth and the vicinity of the coastline, dispersant use is often limited: as an example of such limitations, along the French coast geographical limits have been defined taking into account minimum depth and distance to the shoreline and to sensitive areas (such as aquaculture, ecological reserve...) for different pollution sizes of 10, 100 and 1000 tonnes of oil to be dispersed.

However these general limits do not take into account special areas especially estuaries and closed bays. In these situations due to the vicinity of the different resources, it is necessary to analyse and weigh up the advantages and the potential risk for the different sensitive resources of dispersing the oil. In other words it is necessary to consider simultaneously the different sensitive resources by completing a Net Environmental Benefit Analysis.

Such an analysis requires knowing the dispersed oil toxicity level for the different habitats.

A lot of work has already been done on this topic, however, results are not often comparable as the methodologies used to get these data are different (e.g. oil type, exposure time...).

The question of using dispersant in very coastal areas particularly estuaries remains an unsolved question for responders and this is especially problematic as estuaries and coastal areas are often locations where the pollution risk is high due to the concentration of human activities (harbours, industries and ship traffic).

OBJECTIVE

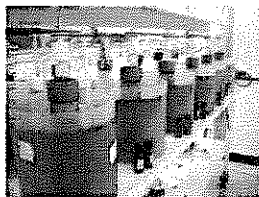
The work program aims to provide responders with a clear and practical information with which they can decide if chemical dispersion is an advisable option in case of an incident in an estuary or in the close vicinity of the coast.

The work program aims to acquire comparable and robust information on the impact of dispersed oils on the different habitats and resources of estuaries and/or close bays. This information will give the possibility for responders to carry out reliable NEBA on dispersant use according to their own scenarios.

PRINCIPLE

The program consists in:

1) Experimental program :



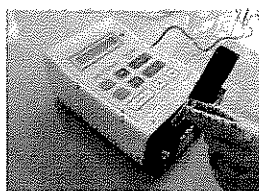
1-1) **Comparable assessments of the toxicity and impact of dispersed oil towards different eco-compartments** of an estuary in a temperate climate (organisms in the water column –pelagic and benthic fish, bivalves and crustaceous- mudflats and salt marsh): these tests will be carried out using the same oil to obtain comparable data for the sensitivity of the different resources.

i. **Organisms in the water column** (Year 1 – in progress):

- a) short term acute toxicity of the oil towards the different species
- b) sub-lethal effect of short term exposure to dispersed oil.

ii. **Mudflat** (Year 2): assessed in mesocosms reproducing mudflat conditions. -

iii. - **Salt marshes** (Year 3): assessed through a field trial.



1-2) **Classifying the relative toxicity of different oils**, and analyse them in order to link, when possible, the toxicity to the chemical composition.

The information from all these toxicity tests carried out on the different compartments of a coastal environment and the ranking of the toxicity of the oils will be used as a basis for implementing recommendations on the use of the chemical dispersion in coastal areas.

2- Exchange of information between professionals concerned by the impact of dispersed oil to:

- Discuss the content, methodology and results of the technical work,
- Bring and share additional information coming from other scientific programs conducted elsewhere. In this respect the original scope of work may be enlarged to other sub-topics (other climates, fine mineral effect on toxicity, tainting...).
- Harmonize the methodologies/protocols used by research teams in order to studies which generate comparable data (e.g. definition of reference crude oils for toxicity assessments or standard testing conditions...).





In addition to the scientific participants discussions will include scientific and operational persons in order to bring in the practical experience and real pieces of information from case stories in order to enrich the whole study.

This discussion group will be a platform to define relevant recommendations on the use of chemical dispersion in very coastal areas.

A possible objective to further this study, would be to write official and widely accepted guidelines on dispersant use in the frame of IMO (revision of the current IMO-PNUE guide line on dispersant).

PARTICIPANTS - PARTNERS

Participants / contributors: *Cedre* (leader), universities of Brest and La Rochelle, AFSSA, Total special fluids, Innospec-Gamlen, and....

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