

# Submarine Hydroponics

Scale

*Operational*

Benefit

6

## Description and Military Application

- *Advances in hydroponic plant culture using LED light sources mean that fast-growing vegetables such as salad, tomatoes, peppers etc. can be grown in small spaces with no natural light.*
- *At present, fresh provisions last 7-10 days into a 3 month submarine patrol.*
- *The ability to provide fresh salad and veg throughout a patrol would have a significant impact on the crew, not only nutritionally, but in terms of MC of OC*
- *In addition, plants use CO2 and produce oxygen, so a significant side-benefit would be better air quality within the submarine*



## Key Enablers and Assumptions

- *R&D required (DSTL?)*
- *Hydroponic compartment could be built into future Trident project*

## Limitations

- *Personnel would need to be trained in hydroponic culture techniques.*
- *Supply chain for spares etc. will need setting up*

## Maturity

- *3-5 years*

## Risks

**Developmental**

*Minimal*

**Affordability**

*Don't know*

**Acceptability**

*Nil issues*

## Supporting Evidence :

*Please see below links to articles and research related to the proposal:*

<http://www.wired.co.uk/article/underground-hydroponic-farm>

<http://growup.org.uk/>

<http://agris.fao.org/agris-search/search.do?recordID=JP2007000742>