



# CRAFT SUBSTRATE PROJECT

CONTENTO TRADE SRL

Technological innovation for the environment

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A new, environmental friendly substrate from compost and  
agricultural waste, for glasshouse horticulture and reforestation



## BRIEF DESCRIPTION:

### Partners:

Contento Trade srl, Campofornido, Italy  
M. de Baat, The Netherlands  
Composteringsbedrijf Zuid, The Netherlands  
Soc. Coop. Flora, Italy  
Research Station, The Netherlands  
IBET Environmental Technology, The Netherlands  
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## OBJECTIVES:

In horticulture, and especially in glass horticulture, a great amount of substrates is being used.

The substrates form the physical "soil" on which the plants/flowers grow and usually water and nutrition is added to the substrates.

These substrates, for instance rock wool slabs, are used one or two times and subsequently they are disposed of. A new substrate material is proposed; it is made of compost (made with agricultural waste) and fibrous agricultural waste, mixed and treated with biological degradable binder. **The objectives of the project are:**

- ✓ a new substrate with a 20% lower sales price than the commonly used substrates;
- ✓ reduction of energy consumption per ton substrates (20-50%);
- ✓ reduction of the nutrition supply (20-100%) as compared to the state-of-art;
- ✓ valorization of part of the current compost production by introducing a severe quality control, especially regarding the nutritive compounds (N and P). This will increase the possibilities and the added value of the compost considerably.
- ✓ recycling of certain agricultural wastes in a valuable products.



The use of these new products could decrease the emissions of CO<sub>2</sub>, SO<sub>2</sub> and NO<sub>x</sub> (caused by the energy reduction for the melting basalt for the production of rock wool).

Three key issues have to be addressed and solved in this project:

- ✓ fluctuating quality if the current compost
- ✓ shaping the product in easy-handling slabs
- ✓ minimize the biological risk factors for the new product

The sustainable process for the new product means also a decrease of emissions. The potential market (more than 100.000 hectare) is about 1,100 Million Euro.

A first production unity can very well have the capacity of about 2.5% of the total EC markets. It's probable the substrate production at industrial level will happen two years after the end of the project; the size plant will depend on the results obtained during the test phases.

## STATE OF THE ART

From the horticulture in Europe, nowadays about 40-50% takes place on substrates different from soil; the most popular is rock wool. Other substances are the expanded clay, foam both of polyphenol and polyurethane, compost and peat-soil.

The main products that grow on substrates are: tomatoes, cucumber, aubergine, paprika and flowers (gerbera, rose).

As the market is quite promising and the artificial substrates above mentioned not very efficient, the working group ideated a new substrate that will be tested and optimized in two years of project.

The use of paper industry working techniques should allow to obtain products of high quality also in presence of scarcely fibrous raw material as the compost, thanks to the adding to the mixtures of appropriate agricultural waste and thanks to the use of appropriate binders.

In the project a new thermal-mechanical shaping technique will be used; this will allow the debacterization of the finished product during its production.