

Cultivit[®]
Better growth better yield



by VDL Cultivit

Strength through co-operation

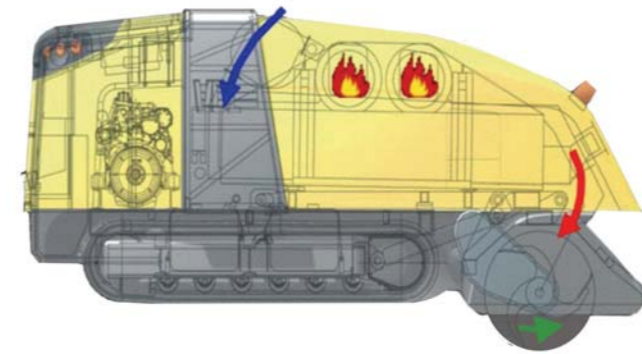




YIELD IMPROVEMENT WITHOUT CHEMICALS:
NO RESTRICTIONS FROM TRADE PARTNERS AND
GOVERNMENT.

REVOLUTIONARY SOIL TREATMENT CONCEPT

Growers of vegetables, fruits and flowers all over the world face severe crop damage caused by soil-borne diseases. Traditional disinfection treatments are expensive (soil steaming), restricted (metam sodium) or being banned (methyl bromide). The need of increased productivity and cost reduction has never been that urgent as it is today. Costs of crop growing rise quickly while revenues don't rise at the same speed. Here is the solution: the Cultivit concept. The Cultivit soil treatment concept has proven to increase crop yield, even despite severe infestations!



Cultivit®

IN CO-OPERATION WITH SPECIALISED PARTNERS, THE DUTCH BASED VDL GROEP DEVELOPED THE CULTIVIT MACHINE:
A ROTARY SPADER EXPOSING SOIL PARTICLES INTENSIVELY TO ULTRA-HEATED AIR. DRIVEN BY SOLID CRAWLER TRACKS, THE
SELF PROPELLED AND REMOTE- OR GPS-CONTROLLED CULTIVIT MACHINE IS YOUR HIGH-TECH PARTNER IN SOIL TREAT-
MENT. THE CULTIVIT CONCEPT WAS EXTENSIVELY TESTED BY WAGENINGEN UNIVERSITY AND RESEARCH CENTRE FROM THE
NETHERLANDS. THE RESULTS ARE PHENOMENAL: EVEN DESPITE HEAVY INFESTATIONS, CROP YIELDS IMPROVED TREMENDOUSLY.
THE NEW WINNER: CULTIVIT.

INTEGRATED TECHNOLOGY

HISTORY

In the late 1990's the idea came up to control soil-borne diseases by exposing soil particles to hot air. This first idea led to a development process which took several years and resulted in a soil treatment machine which has phenomenal results on crop yields on infested soils. In 2005 the Dutch based VDL Groep acquired the rights to the development, production and sales of the Cultivit machine worldwide.

HOW IT WORKS

Air is drawn in through a filter and blown through a heat exchanger. Two blue-flame diesel burners heat up the air up to a temperature of maximum 800 °C. This clean hot air is blown into the spader compartment. The spader rotates with high speed in order to mix the soil particles intensively with the hot air. During the treatment the self-propelled machine moves forward with a speed between 100 and 350 m/min.

Heating, spading, propulsion and controls are integrated functions, incorporated in a well engineered and designed body. Nevertheless VDL considers continuous, effective and efficient operation decisive in engineering, therefore VDL only applies world-class components. Cultivit runs on Berco tracks, is driven by a Volvo-Penta turbo-diesel engine and uses Parker hydraulics and controls.

CROP YIELDS IMPROVE TREMENDOUSLY WITH CULTIVIT



The advantages of the Cultivit[®] concept

TIME Soil is ready for planting immediately after the Cultivit treatment. Cultivit works for you day and night, self-propelled and GPS guided.

ENERGY Cultivit requires just a fraction of the energy needed for soil steaming.

ENVIRONMENT No residues of toxic elements in your valuable soil. No need for transporting and storing toxic chemicals.

HUMAN LABOUR Operating the Cultivit does not require physically hard labour nor specific certification or limited work schedules due to the absence of toxic elements.

CULTIVIT IS A HUGE LEAP AHEAD, ECOLOGICALLY AND SOCIALLY:

- Cultivit is free from toxic chemicals.
- Energy consumption is low.
- Increased yield, improving your financial returns.
- Increased yield, a necessity to feed the growing world population (up by 70 million annually).



Good news, just in time...

CROP GROWING INCREASINGLY COMPLICATED?

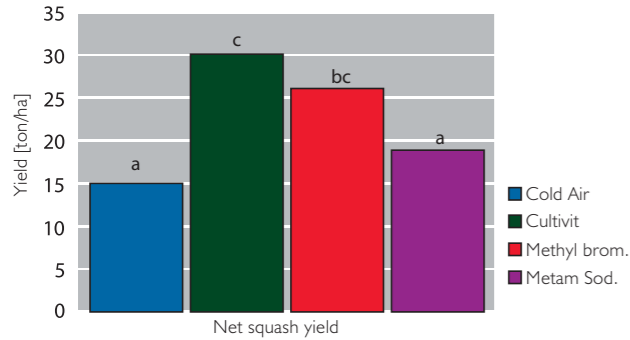
Many crops suffer from infestations with nematodes or fungi. Tomato, lettuce, (sweet) peppers, cabbage, squash, lily, radish and strawberry are just a few out of many crops threatened by soil borne diseases. For instance *Meloidogyne*, *Pratylenchus*, *Fusarium*, *Verticillium* and *Pythium* cause damage and reduce plant growth. At the same time chemical pest control becomes more complicated. *Methyl bromide* is nearly phased out and application of other chemicals becomes more and more restricted. Alternative soil treatments are in the spotlights again but have severe limitations.

- CHEMICALS** Restricted by legislation, limited scope of application and questions about residuals? Time delay before sowing or planting.
- INUNDATION** Complicating crop management, time consuming, water waste and nutrient wash-out.
- SOLARISATION** Climate dependent, time consuming, labour intensive, varying effectiveness.
- SOIL STEAMING** Fuel costs and nutrient wash-out. Time delay before sowing or planting.
- CATCH CROP AND BIO-FUMIGATION** Possibly introducing other pests, varying effectiveness, complicating crop management.

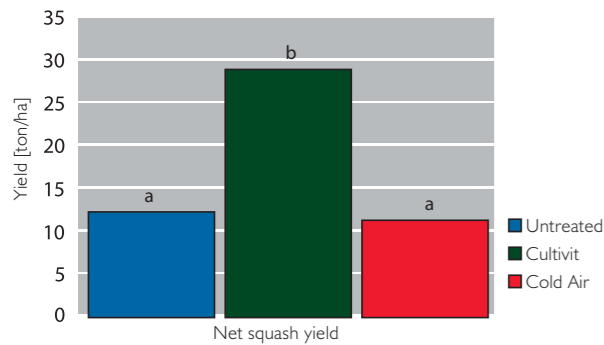


HERE IS THE ANSWER:
CULTIVIT IMPROVES YIELDS, DESPITE INFESTED FIELDS

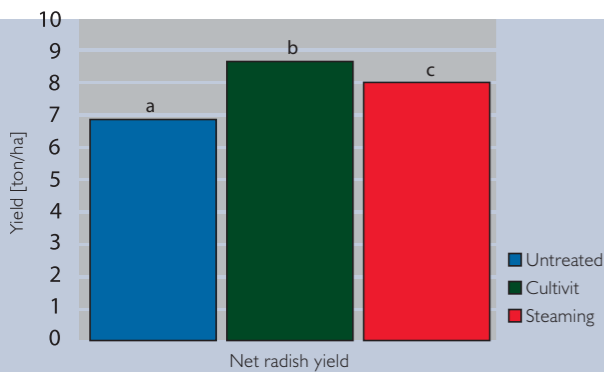
- Without:
- Toxic chemicals
 - Waste of water
 - Waste of energy
 - Waste of labour



1) After a Cultivit treatment the squash yield in Israel (sandy soil) increased by 90% in comparison to untreated control fields.



2) After a Cultivit treatment the squash yield in Cyprus (clay-loam soil) increased by 150% in comparison to untreated control fields.



3) After a Cultivit treatment the radish yield in the Netherlands (sandy soil) increased by 27% in comparison to untreated control fields.

CULTIVIT: BETTER GROWTH, BETTER YIELD

The Cultivit treatment has been tested by Applied Plant Research (PPO-AGV), part of Wageningen University and Research centre from the Netherlands. Tests have been carried out in the Mediterranean area as well as in the Netherlands.

In squash crops, planted on heavily *Meloidogyne* infested Mediterranean soil, Cultivit enabled yield increases up to 150% in comparison with untreated control fields. Traditional soil treatments with metam sodium (MS) were simply outpaced by Cultivit: Cultivit yielded 55% higher. Plots treated with Cultivit yielded statistically equal to Methyl Bromide treated ones.

In potato in the Netherlands the Cultivit treatment increased the yield up to 17% with an increase in the amount of tubers of up to 28%.

On a bioassay in the Netherlands with tomato, growth was increased by 89% despite nematode presence.

In radish in the Netherlands Cultivit was compared to soil steaming and untreated. After Cultivit treatment total yield significantly increased with 27% and after soil steaming with 17% compared to untreated. Cultivit produces a significant higher number of radish tubers > 25 mm size in comparison with steam sterilisation. Radish quality and marketable quantity were better after the Cultivit treatment than after steam sterilisation.



Globally applicable

GROWERS

Cultivit is applicable on open fields and in greenhouses. The Cultivit treatment has a wide variety of advantages above other crop and soil management systems. Therefore, growers of vegetables, fruits and flowers around the globe will find their ally in the Cultivit soil treatment concept.

CONTRACTORS

Cultivit is also attractive for service contractors. Where other specialist's equipment generates income during short periods only, Cultivit is not limited to a single crop or season. Applied in different crops throughout the year, Cultivit is the contractor's best ally. Together with our sales department you can calculate the advantages for your individual situation!

MANUFACTURING

VDL Groep's in-house industrial engineering and manufacturing facilities combined to supplies from other world class technological partners, guarantee highest levels of technical quality and durability.

RESEARCH

In crop and soil research the VDL Groep involved research institutes like the Applied Plant Research Institute, part of the renowned Wageningen Agricultural University and Research centre of the Netherlands.

Superior results

BETTER ROOTS, STRONGER CROPS

Plants develop a larger root system after a Cultivit treatment. This is a huge advantage for plant growth, especially in arid areas.

THE NEW WINNER: CULTIVIT.

CULTIVIT: ADVANCED TECHNOLOGY ENGINEERED AND MANUFACTURED BY THE VDL GROEP

MAIN TECHNICAL SPECIFICATIONS:

- Dimensions: 5.15 x 2.25 x 2.15 m (lxwxh)
- Weight: 9150 kg (0.7 kg/cm²)
- Working speed: 100 – 350 m/hr
- Working depth: 35 cm
- Working width: 200 cm
- Capacity: 200 – 700 m²/hr
- Fuel consumption: 50 litre/hr (diesel)



After a Cultivit treatment the root system of cucumber plants developed much stronger.

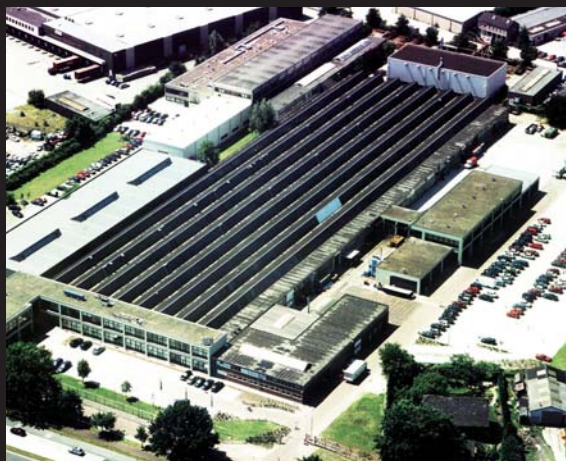


VDL Groep

VDL Cultivit is part of VDL Groep, an international company with approximately 7.500 employees, spread over 75 subsidiaries in 14 countries. The strength of the co-operation within VDL Groep offers added assurance in terms of continuity to customers and suppliers of VDL Cultivit alike.

VDL Cultivit operates in the finished products sector. This sector comprises suspension systems for the automotive industry, production automation systems, heating, cooling and air-technical systems, systems for the oil, gas & petrochemical industry, sunbeds and roof boxes, systems for the agricultural sector, cigar-making and packaging machines, container handling equipment, medical systems and production systems for optical media.

The other sectors comprise supplies and buses & coaches. In the supply sector, VDL specialises in metalworking, mechatronic systems and system supply, plastics processing and surface treatment. The bus & coach division includes coaches, chassis modules, public transport buses, mini & midi buses and second-hand buses.



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