






# GJ MAGMA: agricultural machine "Scarabaeus"



## Agricultural machine "Scarabaeus"

transforms nonproductive and degraded soils into fertile land, dramatically reducing the cost and resources required for soil restoration.

-  95 000 Eur per unit
-  Reduces the cost of soil restoration, amount of irrigation water and mineral fertilizers
-  Arid areas where 2-3 harvests are obtained per year
-  Southern Europe, Middle East, North Africa, Sub-Saharan countries, Australia
-  Pilot



GJ Magma Ltd. is a pioneering company specializing in the exploration of solid minerals and the development of innovative technologies to enhance soil fertility.



# HOW IT WORKS

The Scarabaeus technology revolutionises soil restoration by inserting organic soil improvers directly into plant growth lines, minimizing the amount needed by up to five times compared to traditional methods. This method is particularly advantageous in arid regions, where water and nutrient conservation are critical. The technology's effectiveness has been proven in unfavorable conditions in Lithuanian sand-gravel quarry soil, similar to the Sahara soil in terms of properties, and the desert conditions of Tabernas, Spain, where crop yields were comparable to those from fertile soils.

Using traditional methods, restoring nonproductive soil can cost up to 4,500 euros per hectare when using granular manure. In contrast, the Scarabaeus technology can achieve the same results for just 900 euros per hectare. On 31 January 2025, GJ Magma Ltd. completed project financed by the Recovery and Resilience Plan "New Generation Lithuania", which resulted in the development of an innovative organic soil improver "SaproStraw" made of sapropel and straw. By applying SaproStraw with Scarabaeus technology, the cost of modifying nonproductive soil into fertile soil per one yield can be only about 250 euros per hectare.

The technology is especially valuable in regions like Southern Europe, the Middle East, North Africa, Sub-Saharan Africa, and Australia, where two or three harvests per year are possible, and the need for sustainable soil management is critical. By reducing the amount of irrigation water and mineral fertilizers required, Scarabaeus technology reduces environmental impact including possible groundwater pollution.

# BUSINESS

GJ Magma Ltd.'s core activities revolve around the exploration of solid minerals such as gravel, sand, clay, dolomite, and peat, as well as assessing the environmental impact of mining.

However, most innovative contribution to sustainable land use is the development of the "Scarabaeus" technology, designed to modify nonproductive or degraded soils into fertile land efficiently and cost-effectively.

