

**E-NNOVATE**

**Technology of rock weathering  
into soil, fertility improvement of  
immature soil and remediation of  
degraded soil**

**Name: Haoran Song**

**Tel: 13091895695**

**E-mail: shr3478@126.com**

**Company/Unit: Kunming University of Science  
and Technology**



# 1. Project background

## Soil scarcity and infertility



Hardening

Acidification

Desertification

## Soil degradation



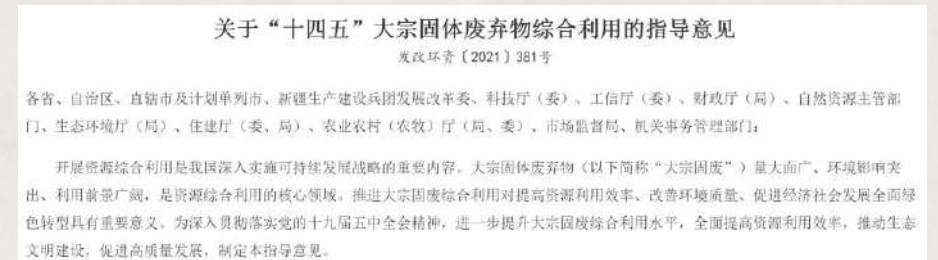
More stones  
and less soil

Soil erosion

Low vegetation  
survival rate



## Release of "Soil Pollution Prevention Plan"



## Guiding Opinions on "Comprehensive Utilization of Bulk Solid Wastes"

**Severe soil problem!**

# 3. Method and Patent

Biomass

Waste soil and rock

Pedogenesis

Desulphurization

Antioxidation

Carbon fixation

Fertilization

Stabilization of heavy metals

Mixed pyrolysis

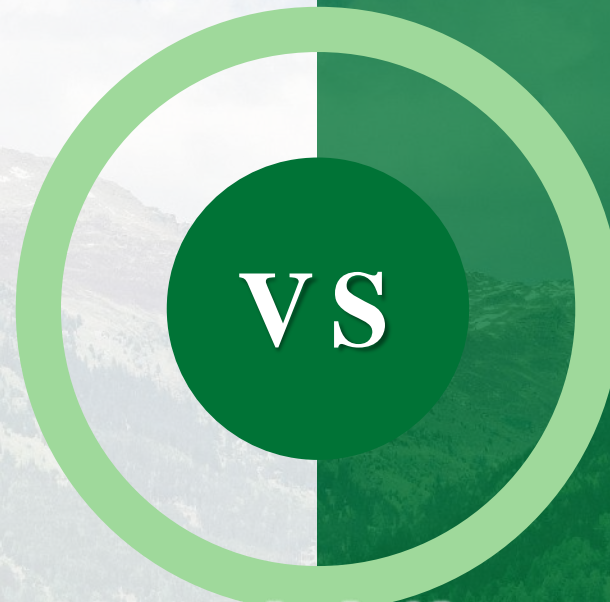
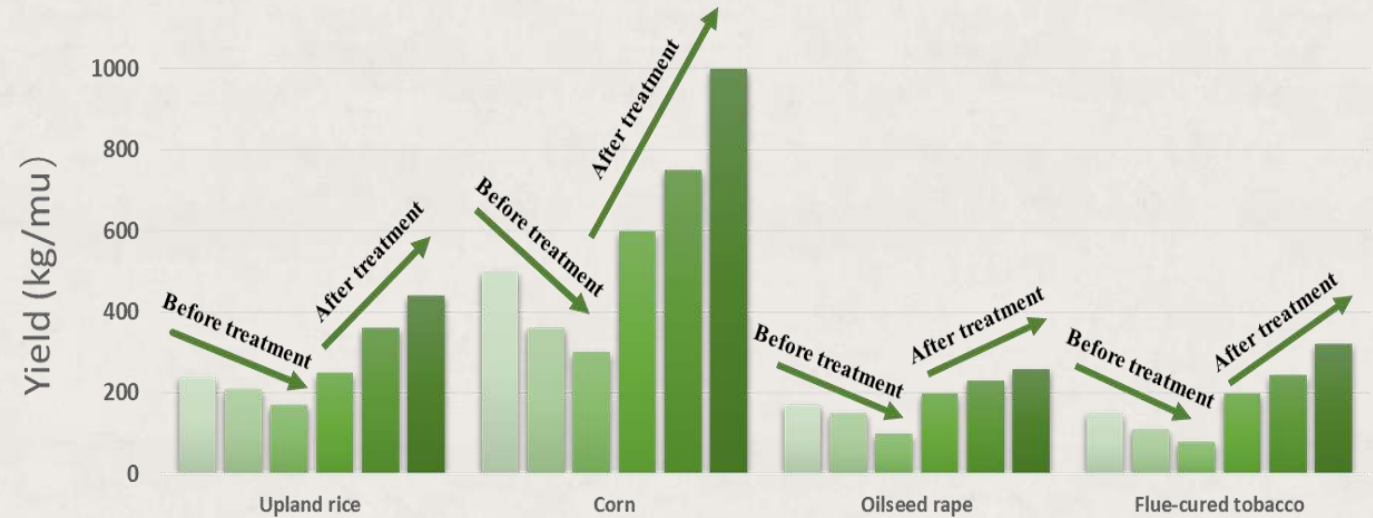
Mixed pyrolysis

Comprehensnsive management of multiple types of soil issues



## 4. Benefits


The technology not only achieves carbon sequestration and emission reduction, but also inhibits soil continuous cropping obstacles and increases crop yields.





The site condition reconstruction of the wasteland with more rocks and less soil was completed, and the ecological restoration of plants without fertilization was realized.

# 5. Applications



pH of surface substrate 

nutritive element content 

metal stabilization 

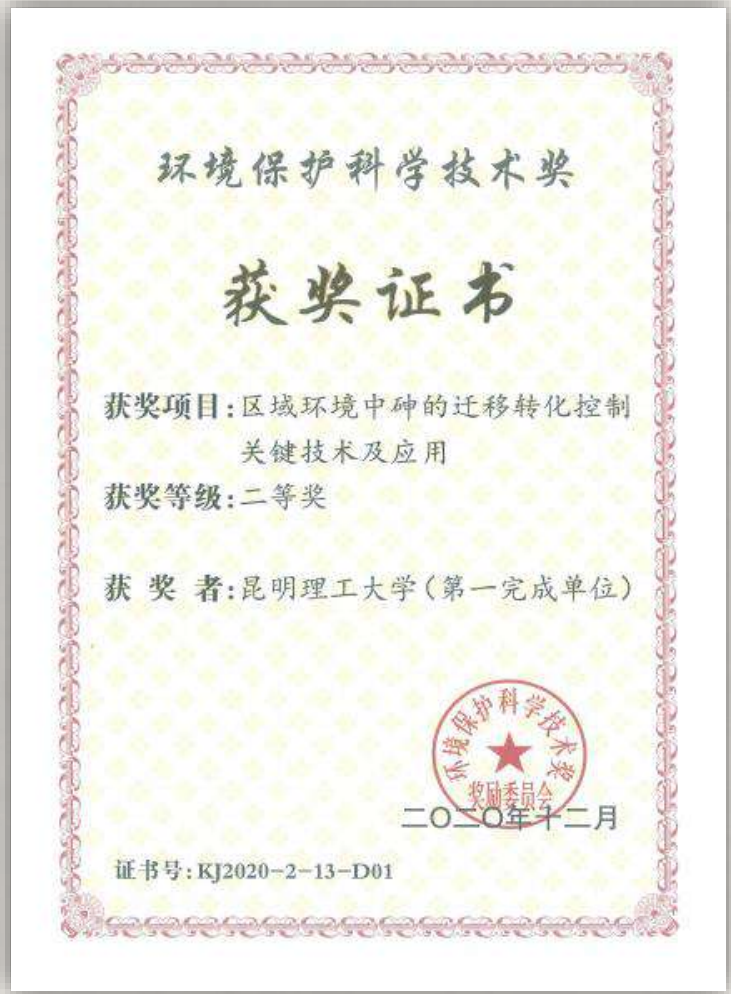
**A technology of accelerating weathering and pedogenesis by biomass pyrolysis**



Shellac production from 2019, fertilizer-free survival ratio >90

**Yield: 150 kg per Chinese acre**

# 6. Awards



**China Industry-University-Research Cooperation Innovation Award in 2020  
Environmental Protection Science and Technology Award: Second Prize  
China Nonferrous Metal Industry Science and Technology Award: Second Prize**



Thank you for your attention!

