

# O DESAFIO DA BIODIVERSIDADE

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Herdade da Abegoaria

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# Herdade da Camoeira













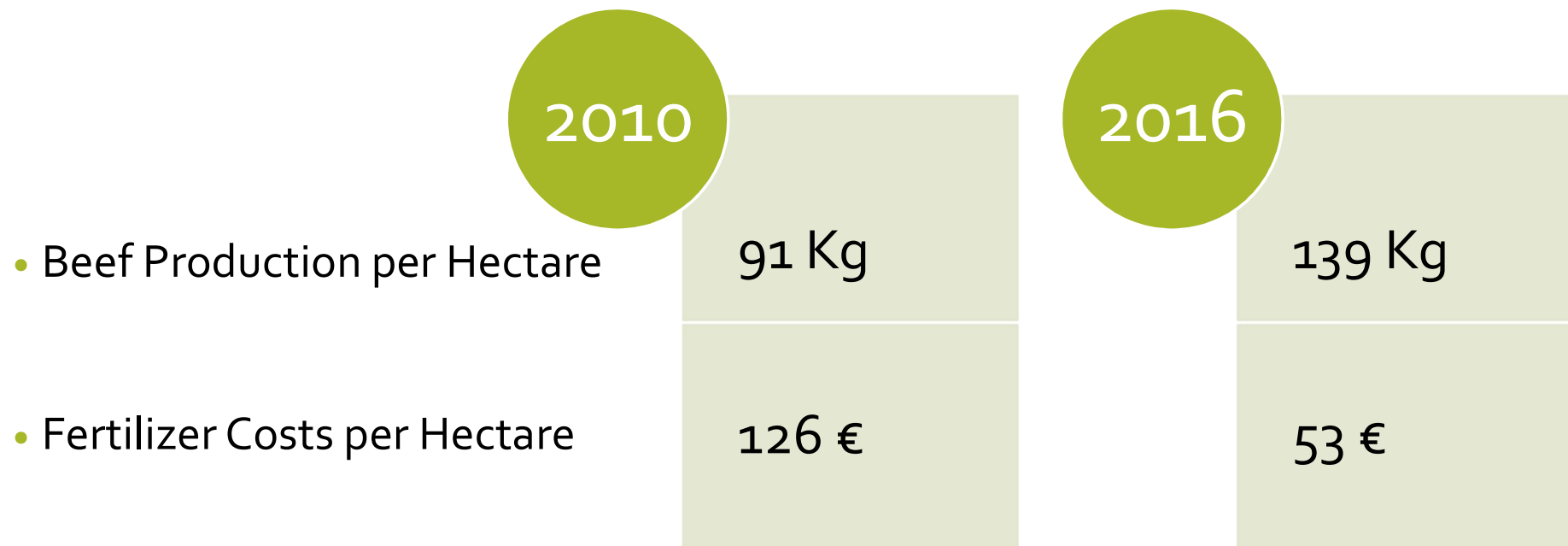
## Toxicidade de Manganês



*Foto: Prof. Mário de Carvalho*

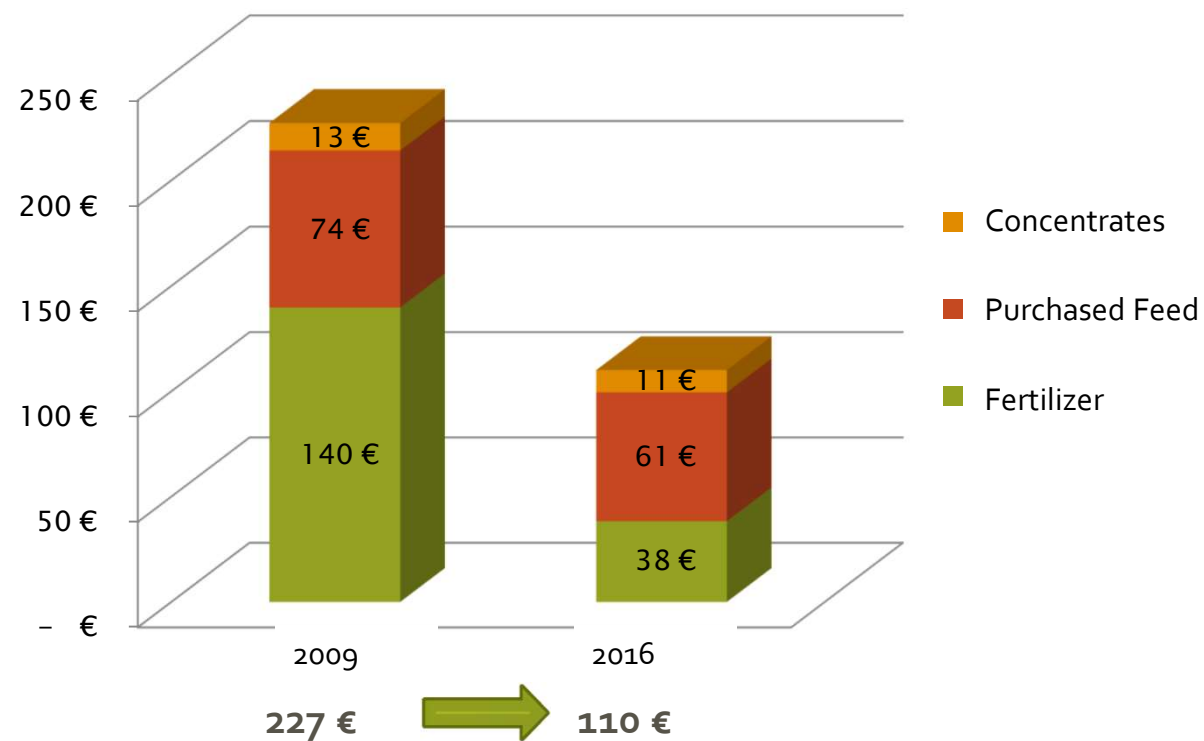


# Evolução Herdade da Camoeira





## Feed Costs Evolution



	2009	2016	D
Total Feed Cost	227 €	110 €	117 €
Soil Productivity Effect	227 €	169 €	58 €
Herd Productivity Effect	169 €	110 €	59 €



Over the last 40 years soil erosion and degradation has caused farmers to abandon about 430 million ha of arable land, an area equivalent to about one third of all present cropland.

*(Pimental et al, 1995)*



Humanity loses another 0,3% of our global food production capacity each year to soil erosion and degradation.

*(Un Global State of the Soil Assessment, 2015)*

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Funções  
do  
Solo

Infiltrar água

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Armazenar água

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Disponibilizar nutrientes para as culturas

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Permitir o trânsito de máquinas e animais

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## SOIL TO DIRT

- Loss of Diversity –hundreds of species to monoculture
- Loss of organic matter (carbon)
- Loss of soil structure (collapsed soils –no pore spaces for air and water)
- Loss of water holding capacity –the sponge (compaction, tillage layer)
- Change in fungi: bacteria ratio (highly bacterial dominated soils)
- Loss of resilience (too wet, too dry, too hot, too cold)
- Symptoms-weeds, disease, insect problems

*Adaptado de Dwayne Beck (SDSU -Dakota Hills Research Farm)*

# Principles of Conservation Agriculture



Minimal or no disturbance

- Direct Seeding

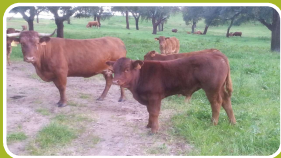


Permanent ground cover

(Cover crops/retain crop residues)



Diverse crop rotations



Integrated livestock – soil  
regeneration tool



# Princípios Convergentes

- Natureza
- Foco na fotossíntese
- Foco na biologia
- Carbono – elemento escasso
- Diversidade implícita

Modelos mais complexos!

DIVERSITY = COMPLEXITY = RESILIENCE = PROFITABILITY

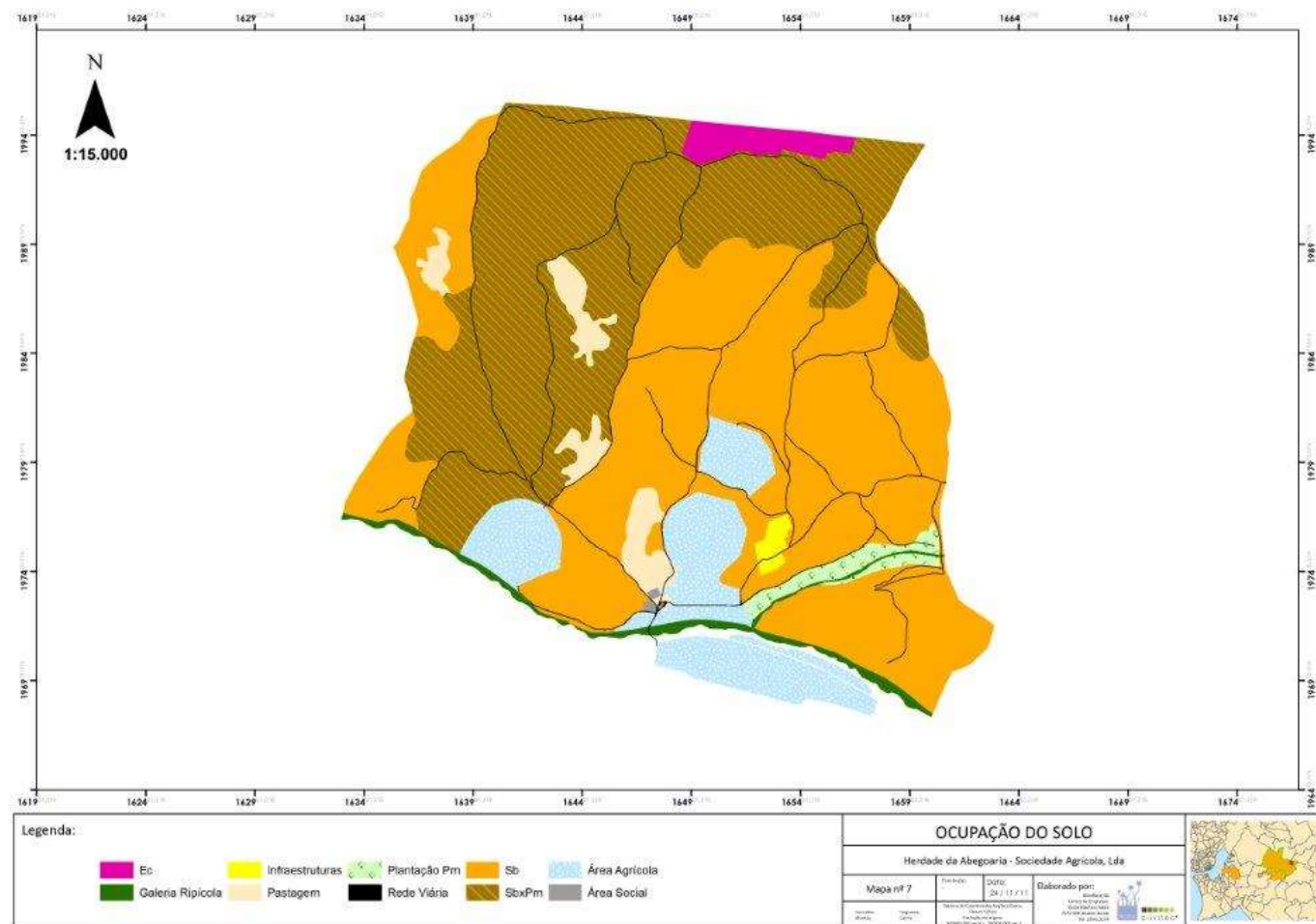
*Dwayne Beck*



# Mapa Herdade da Abegoaria



# Mapa de Ocupação Cultural

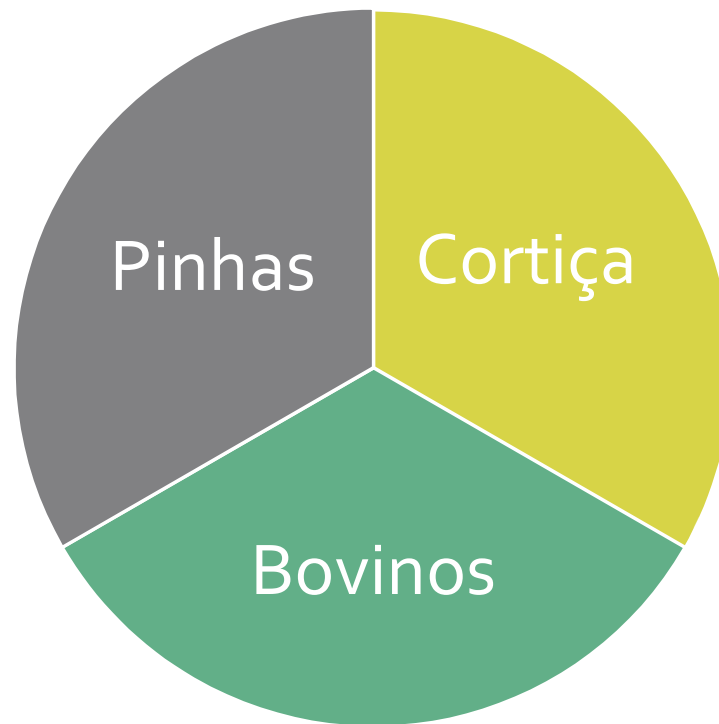




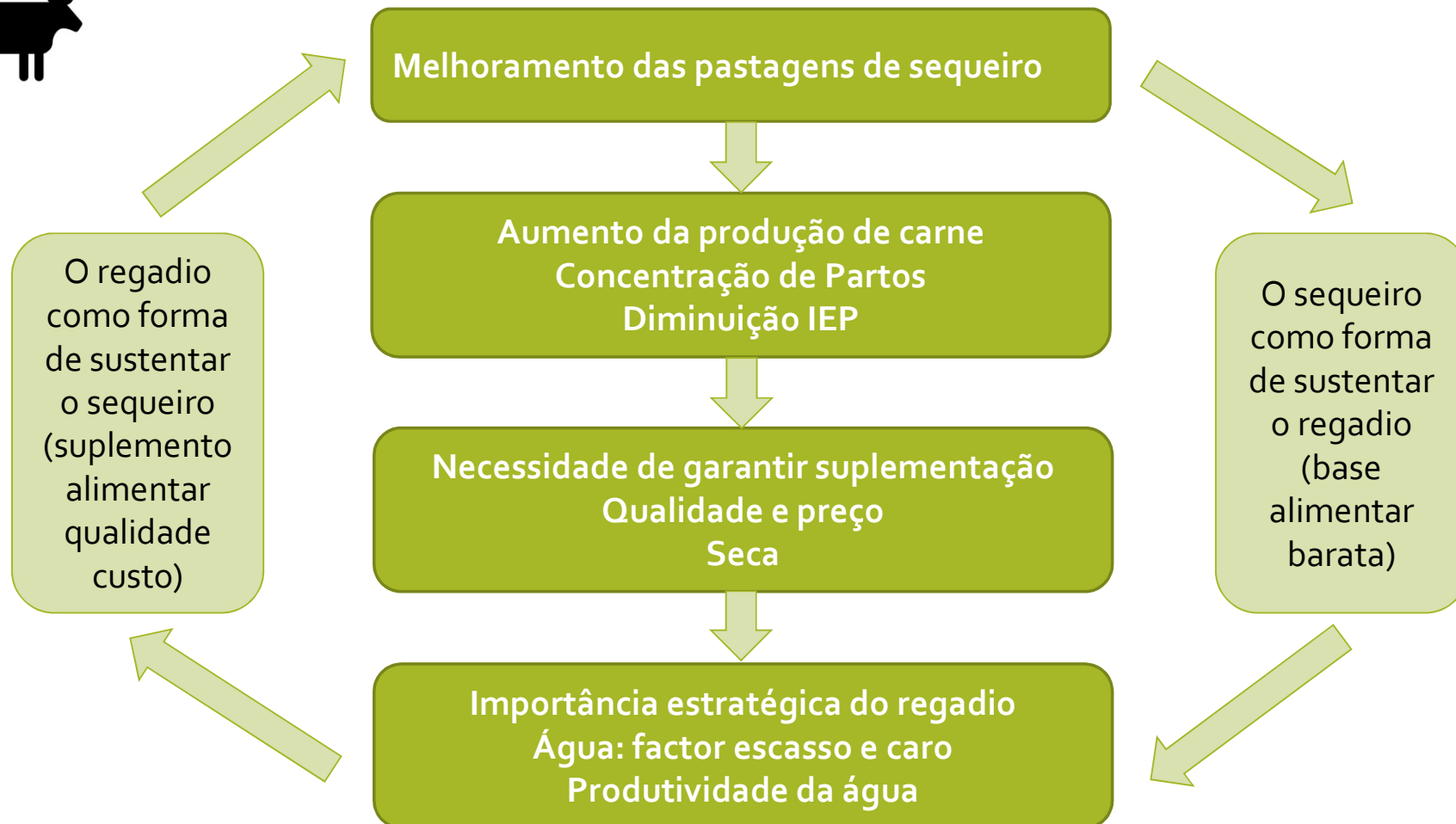




# Três Áreas de Negócio







*Adaptado de Prof. Mário de Carvalho, Alcácer do Sal, 2016*











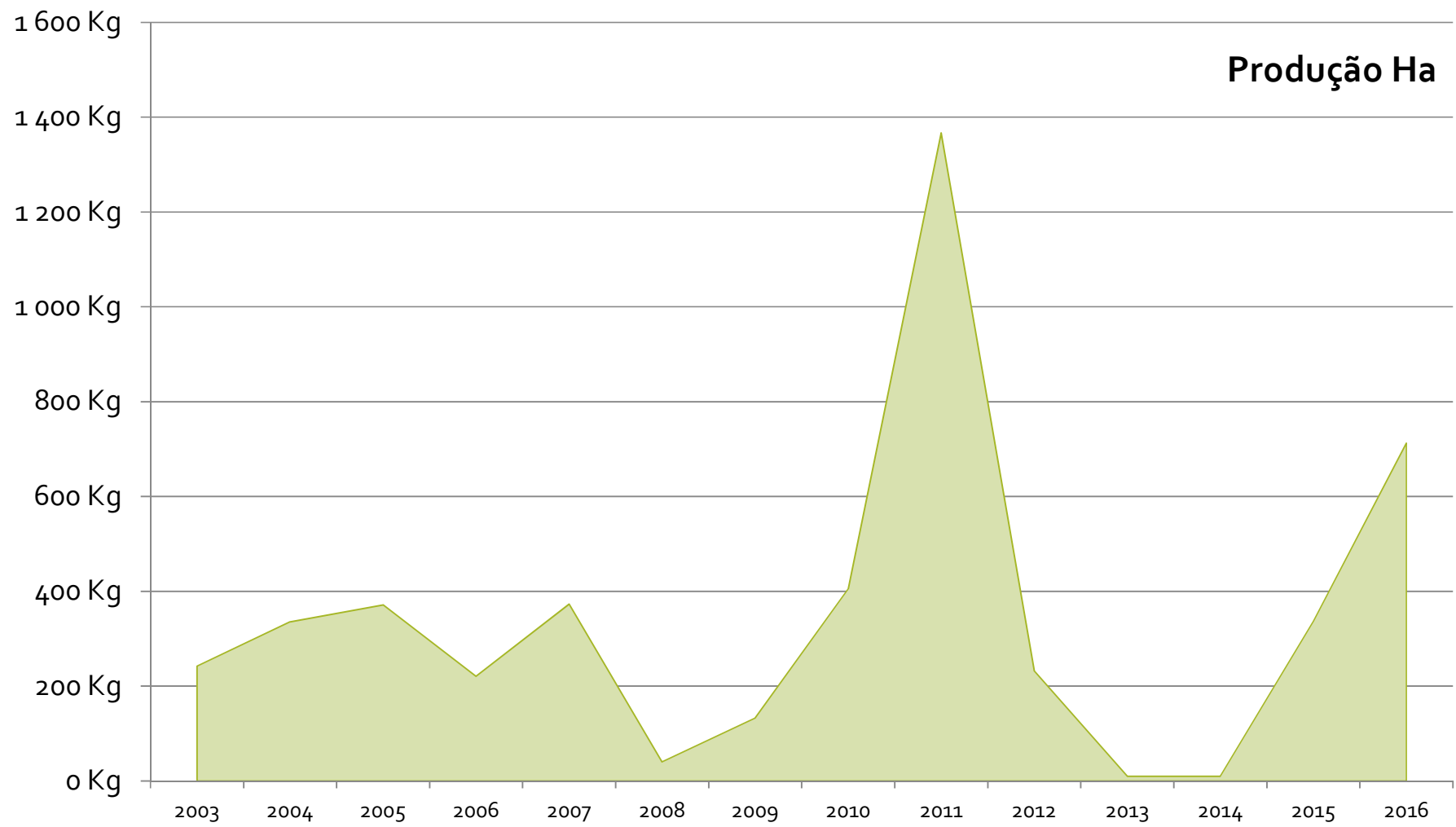








# Pinhas





# Linhas de Acção - Solo

## Promoção aumento MO e da biologia dos solos

- Utilização Produtos Orgânicos
- Utilização sub- produtos podas e desramações

## Monitorização toxicidades

# Desafios Futuros

- Alteração do tipo de pastoreio
- Diversificação espécie animal
- Adensamentos



Obrigado