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Belgian Grasshoppers: A Nutritious Food Source

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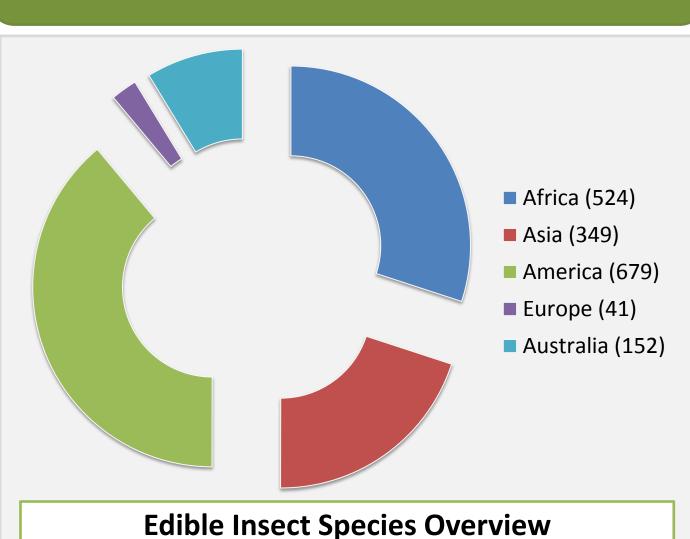
Introduction



Rapid Urbanization

Teaming Millions





Entomophagy

Why me? **Nutritionally superior to Nutrition** conventional meats Beetles Caterpillars Lower risk of zoonotic Health -Traditionally used in Bees, Ants and medications Wasps Grasshoppers, Locusts and - Lesser greenhouse gases emission during **Crickets** production **Environment** Others - Some species feed on dead organic material Percentage share of different insect groups

Material and Methods

Samples

Grasshoppers caught from local fields
Chorthippus parallelus
Conocephalus discolor

Reared in cages to
obtain eggs
After laying these
grasshoppers were used
for analysis
Conocephalus discolor
turns cannibal during

Eggs kept at room temperature followed by breaking diapause at 5°C Hatchings obtained (still juvenile)

caged breeding



Lipids (Dry weight)



Lipid extraction was done by a cold extraction technique using 2:1 chloroform/methanol as solvent

Proteins



Protein estimation from the residual mass left after lipid extraction was done using dumas method

Thermal Profile of Lipids



Thermal profile was analyzed by differential scanning calorimetry Q1000 DSC connected to refrigerated cooling system

Fatty Acid Profile

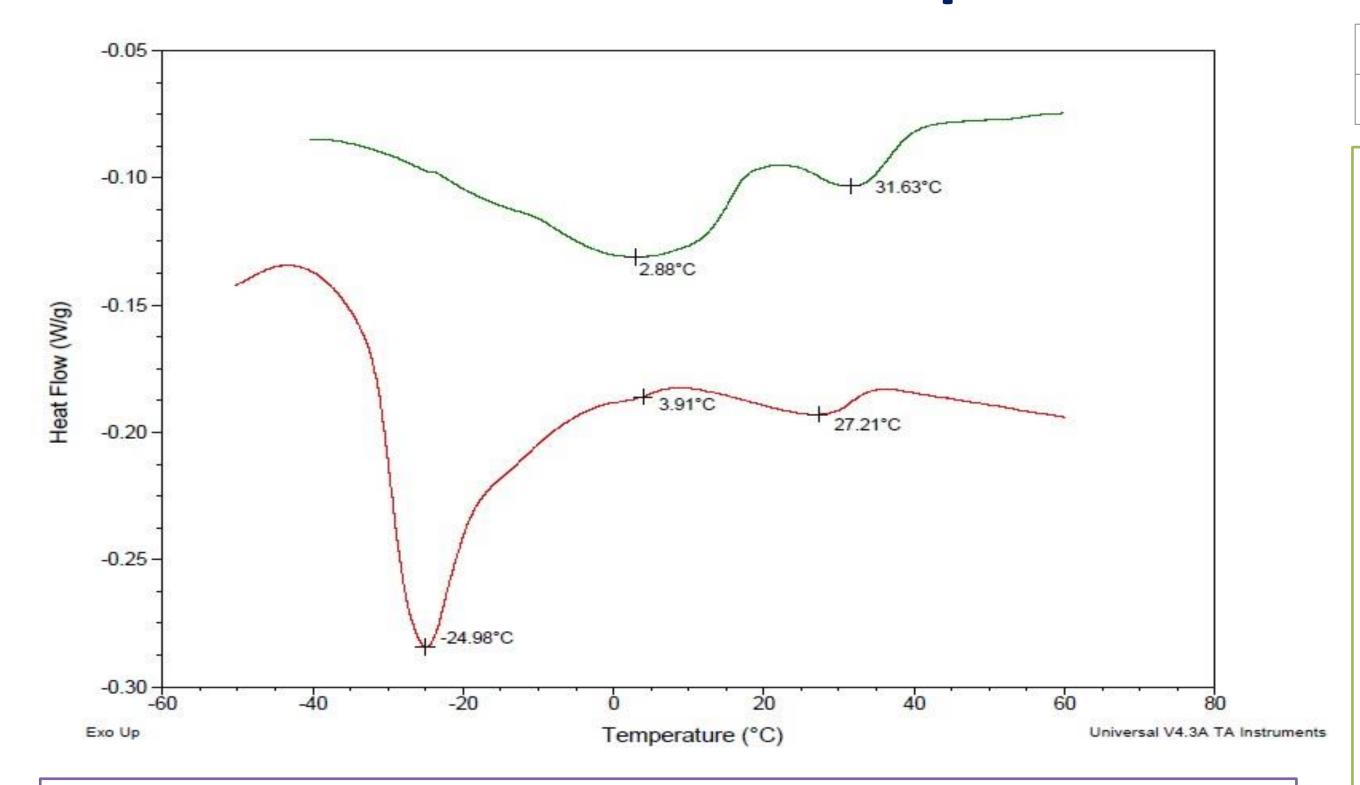


Fatty acid compositions were determined by GC on a HP 6890 Series GC System fitted with a HP 7683 Series injector and flame ionization

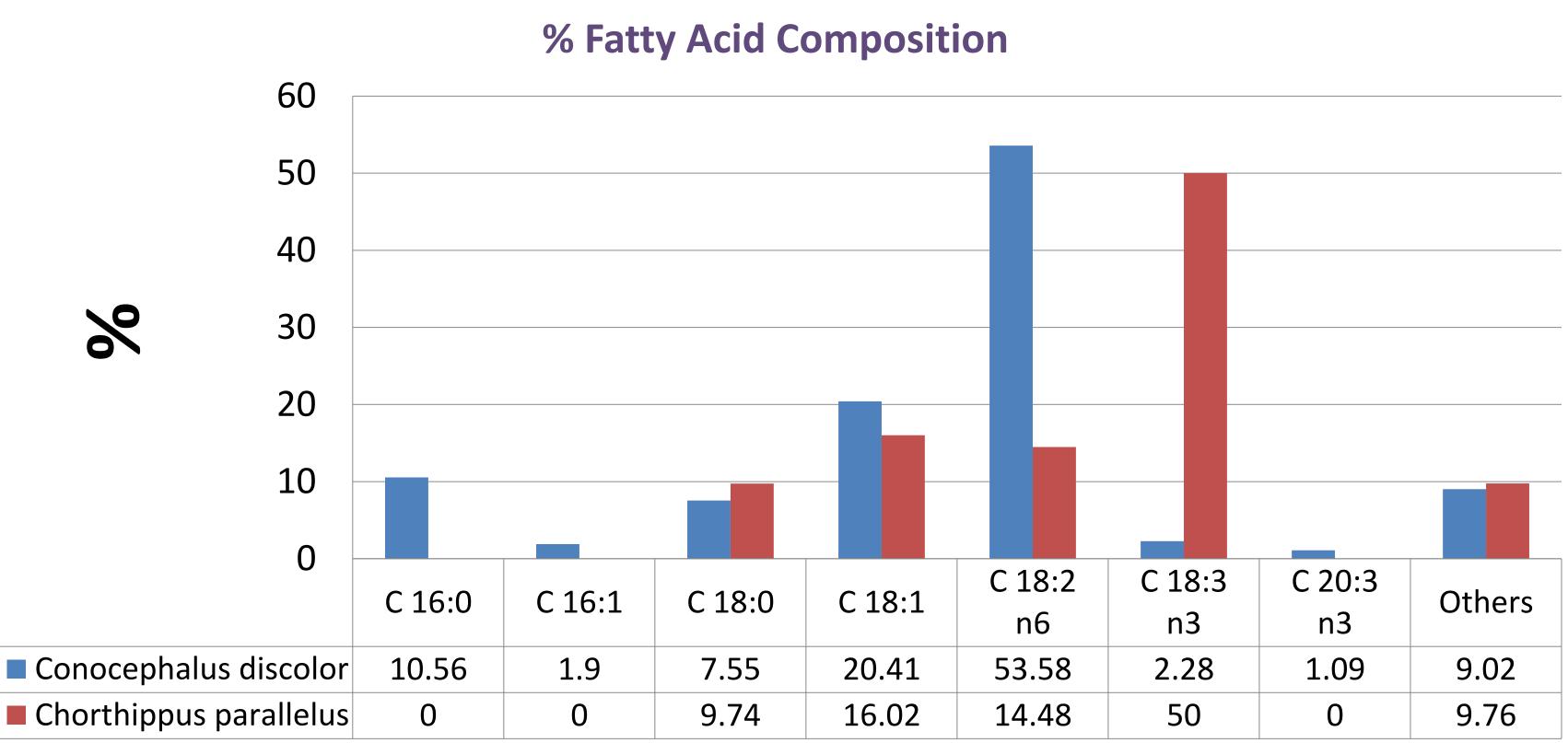
Results and Discussion

%	Chorthippus parallelus	Conocephalus discolor
Lipids	6.90	13.07
Proteins	77.80 ± 0.27	78.42 ± 0.17

Thermal Profile of Lipids



For more information log on to: www.agricultureislife.be
Project 4B- Field border flowering strips as a source of food or non-food compounds



Conclusion

- Grasshoppers are already consumed as foods in many parts of world.
- 2. Besides being nutritionally rich, they are also used as medication is some parts of world and there consumption is also supported by environmentalist.
- 3. With this amount of proteins and a fatty acid profile with dominant polyunsaturated fatty acids, they can be a potential future food to meet the needs of teaming millions.
 - Further research is required in establishing commercial breeding protocols and effect of specialized diet to improve food quality so that a substantial amount of biomass can be generated to encourage them as human foods.