

Some Interesting Sources of Plant Seed Oils

Aman Paul^{1*}, Sabine Danthine¹, Christophe Blecker¹, Stephanie Heuskin², Georges Lognay² & Michel Frederich³

¹ Department of Food Science and Formulations, Gembloux Agro-Bio Tech, Belgium

² Laboratory of Analytical Chemistry, Gembloux Agro-Bio Tech, Belgium

³ Department of Pharmacy, University of Liege, Belgium

* paul.aman@ulg.ac.be

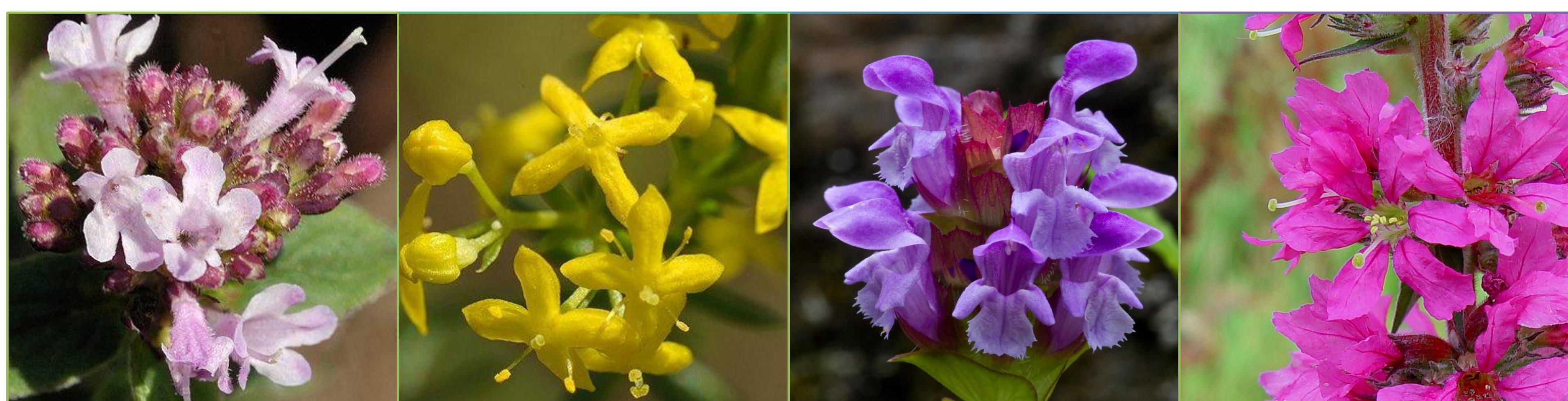
Field Border Flowering Strips

Enhance Biodiversity



Ruminant Nutrition

Valuable Compounds



Oregano

Origanum vulgare

Yellow bedstraw

Galium verum

Common self-heal

Prunella vulgaris

Purple loosestrife

Lythrum salicaria

Seeds are storehouse of lipid in plants

Material & Methods

Samples

The four species of seeds were purchased from a local supplier

Methods

All samples were grinded in a Mill

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

Fatty acid profile was determined by Gas Chromatography on a HP 6890 series GC system apparatus fitted with a HP 7683 series injector and Flame Ionization Detector

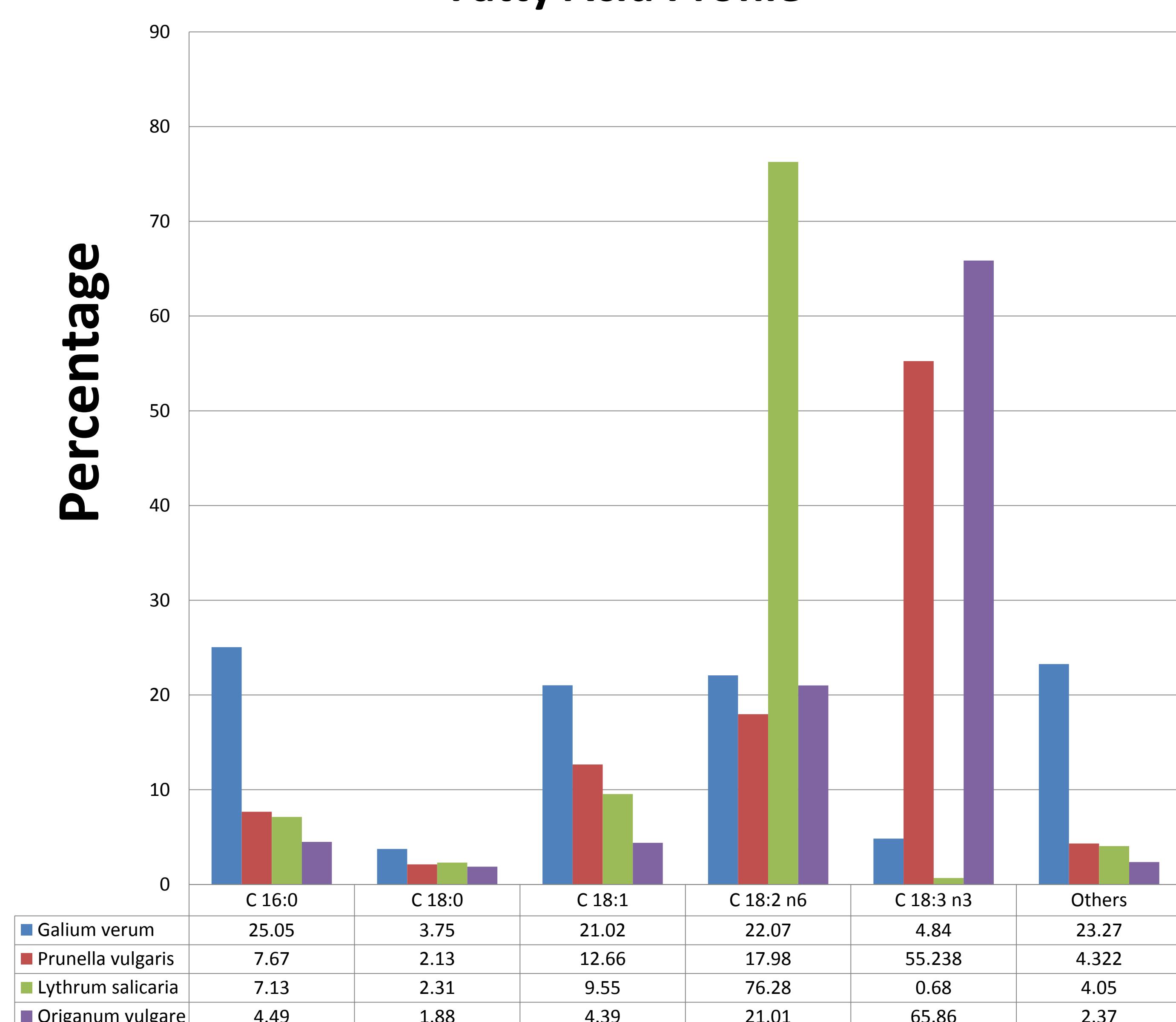
Thermal profile was analyzed by Differential Scanning Calorimetry Q1000 DSC

Results & Discussion

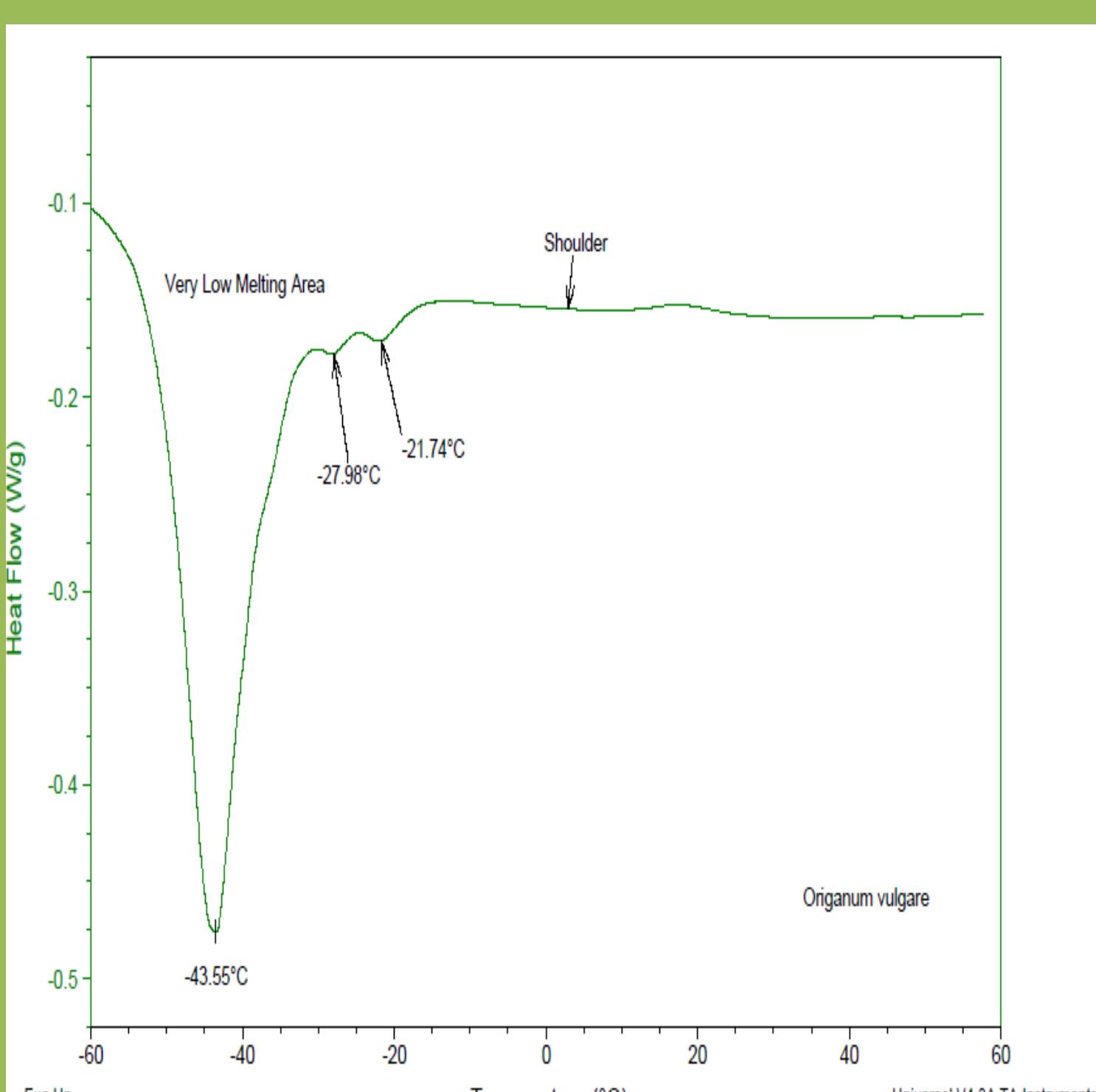
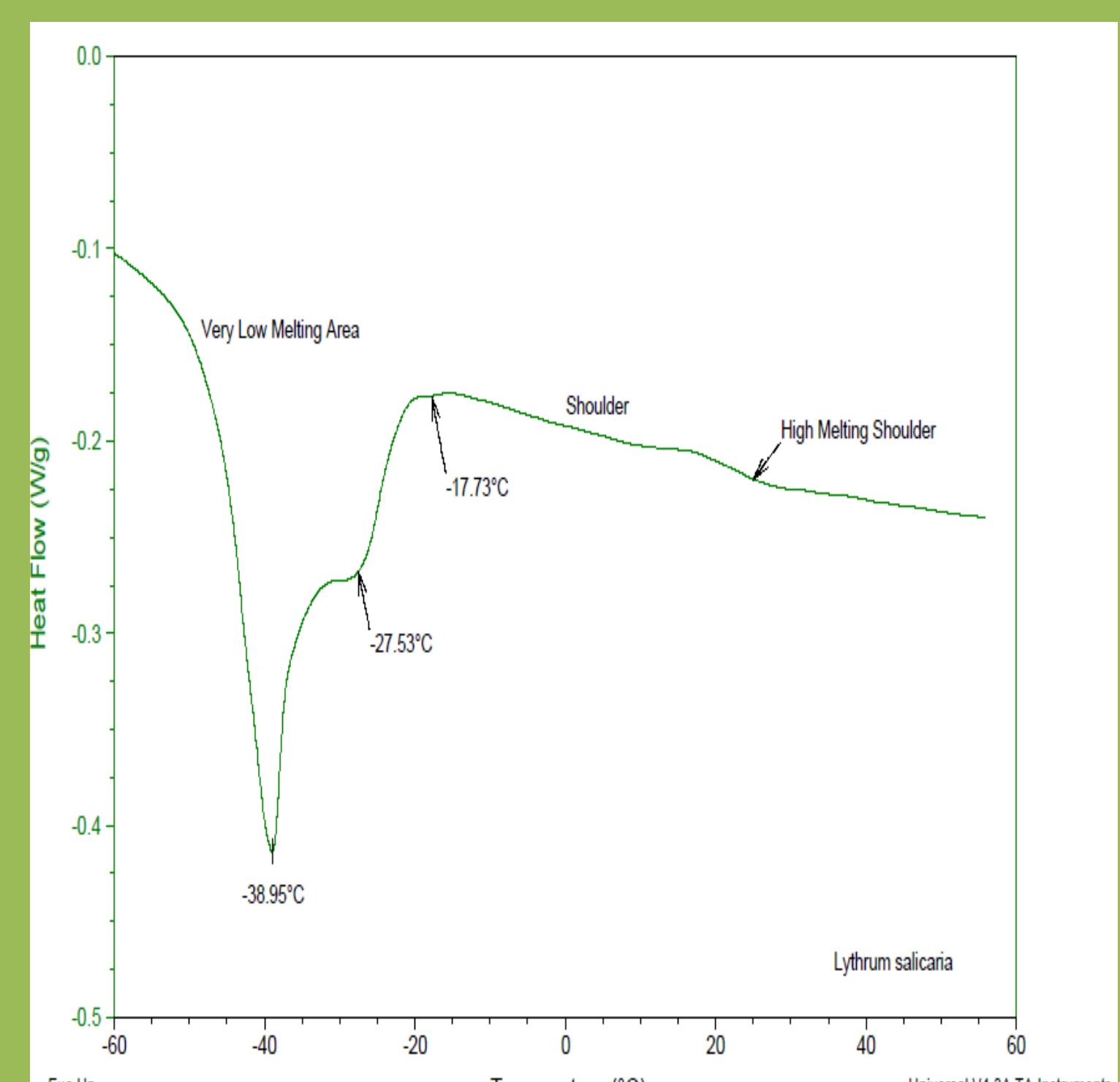
Lipid Content of Seeds

S.NO.	Species	%
1	Origanum vulgare	22.58 ± 0.03 %
2	Galium verum	3.28 ± 0.01 %
3	Prunella vulgaris	14.84 ± 0.12 %
4	Lythrum salicaria	20.32 ± 0.15 %

Fatty Acid Profile



Melting Profile (DSC)



Lythrum salicaria

Origanum vulgare

Conclusion

- Oil extraction from seeds of *Origanum vulgare*, *Galium verum*, *Prunella vulgaris* and *Lythrum salicaria* plant species was done on wet weight, which came out to be 22.58±0.03%, 3.28±0.01%, 14.84±0.12% and 20.32±0.15% respectively.
- Galium verum* is a good source of unsaturated fatty acid C16:0 (Palmitic acid), *Prunella vulgaris* & *Origanum vulgare* are good source of polyunsaturated fatty acid (PUFA) C18:3 n-3 (Alpha-linolenic acid) and *Lythrum salicaria* is a good source of PUFA C 18:2 n-6 (Linolenic acid).
- With this amount of lipids, fatty acid profiles and thermal behaviour, some of these seed oils can be important source of commercial lipids.

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Project 4B- Field border flowering strips as a source of food or non-food compounds