Record level productivity of lactate from a century-old cellulosic deposit on the lake bottom in Tampere, Finland

Elias Hakalehto1*,2
Anneli Heitto 1
Frank Adusei-Mensah 1
Laura Holopainen 1
Reino Laatikainen 3
Jukka Kivelä 2,4

1. Finnoflag Oy, Kuopio, Finland
2. Department of Agricultural Sciences, University of Helsinki, Helsinki, Finland
3. Department of Pharmacy, University of Eastern Finland, Kuopio, Finland
4. Ekosovellus Oy, Raasepori, Finland

(*corresponding author)

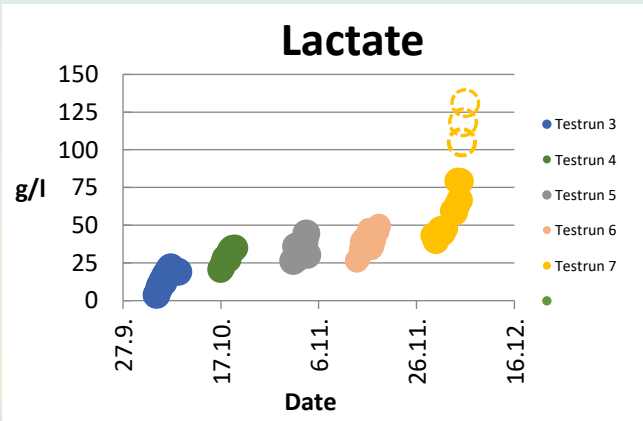
PLANNED NEW CITY DISTRICT, HIEDANRANTA, FOR 25 000 RESIDENTS AND 10 000 NEW WORK PLACES

TAMPERE LIELAHTI (HIEDANRANTA) BIOREFINERY CASE IN FINLAND

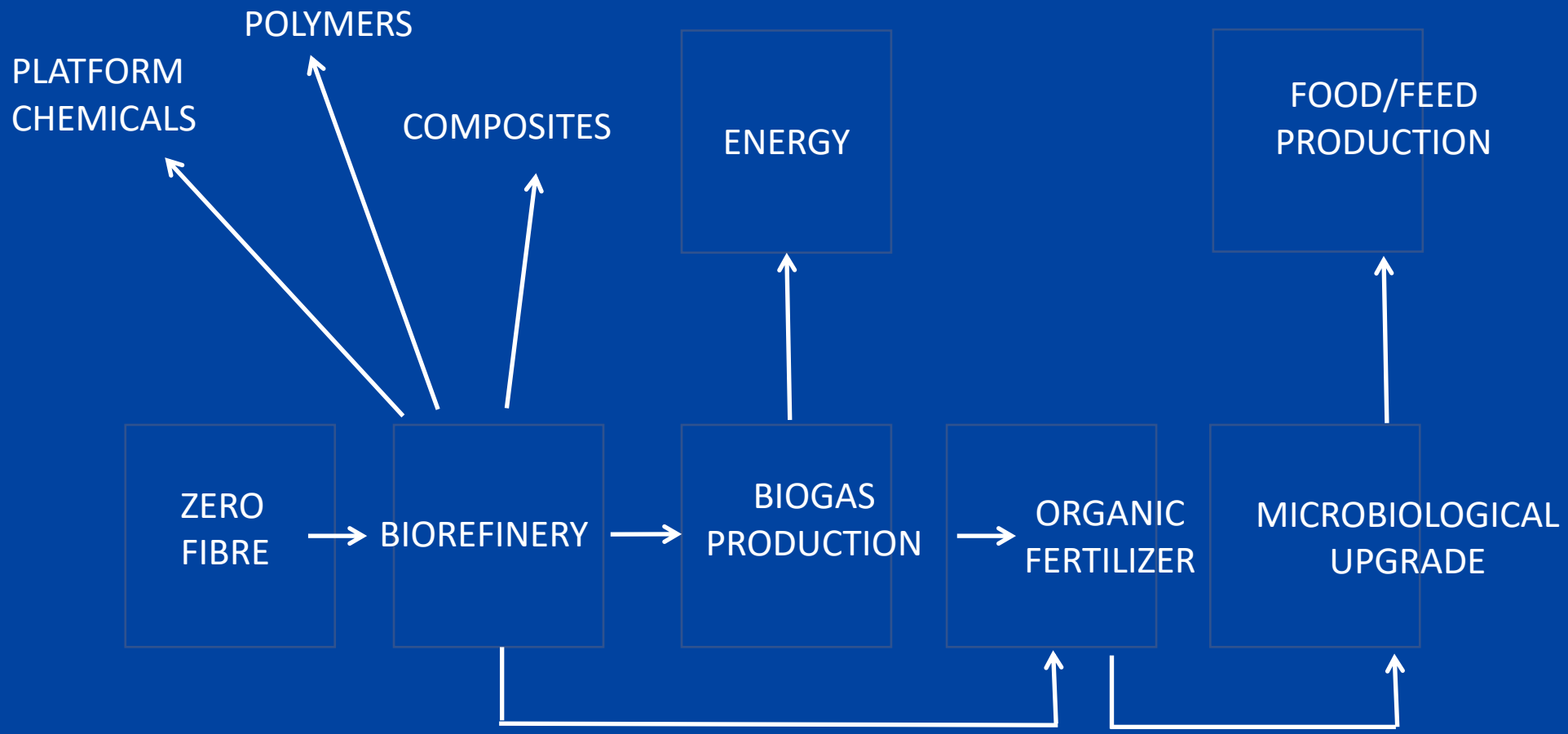
”Zero Waste from Zero Fibre”

BLUE BIOECONOMY

Funded by Ministry of Agriculture and Forestry of Finland 2018-2019



HIEDANRANTA TAMPERE 2018-2019 ELY-CENTRE: BLUE BIOECONOMY PROJECT

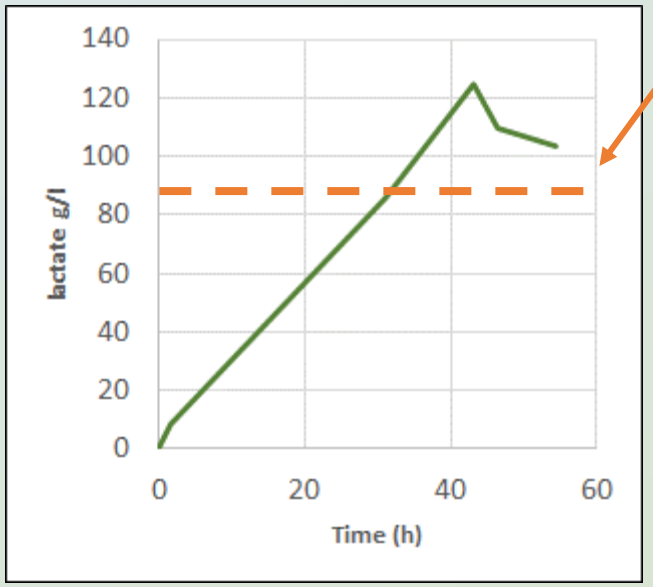


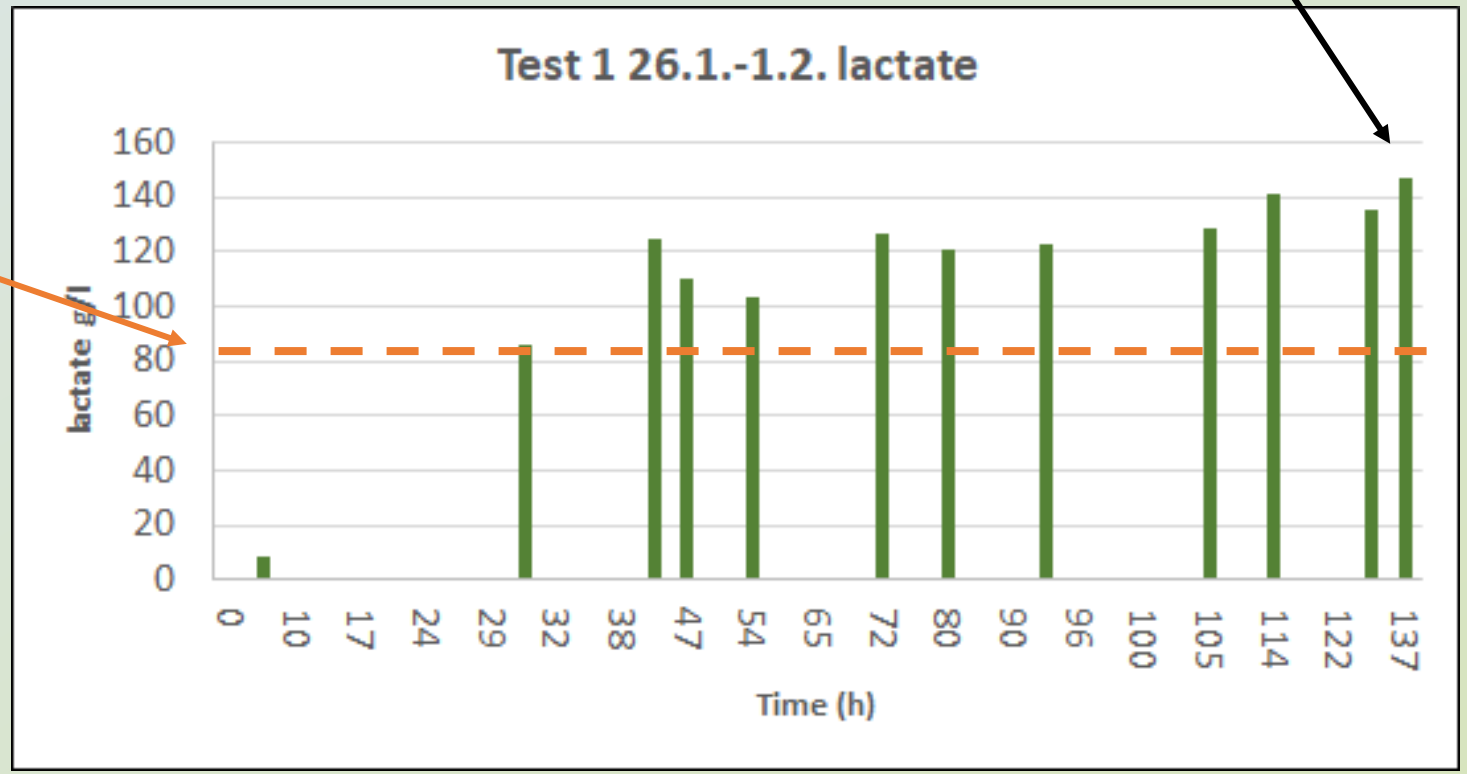
RECENT FINNOFLAG OY LACTATE TESTS IN 2022

Maximum yield 14,7 %

Record productivity in
43 hours 12,4 %

Level of 2020 trials





TAMPERE HAS BEEN THE FORERUNNER IN DEVELOPING NEW TECHNOLOGIES

source: tampere.fi

- TAMPERE IS THE LARGEST INLAND CITY IN FENNOSCANDIA WITH CIRCA 250.000 INHABITANTS.
- IT WAS THE CRADLE OF BOTH FINNISH INDUSTRIALIZATION TWO CENTURIES AGO, AS WELL AS OF THE GLOBAL MOBILE PHONE INDUSTRY ABOUT 50 YEARS AGO. THE FIRST NMT, GSM AND 5G CALLS IN THE WORLD WERE CALLED FROM TAMPERE.
- TAMPERE WAS ONE OF THE FIRST FIVE LOCATIONS IN EUROPE OVER 130 YEARS AGO WHERE ELECTRIC LIGHT WAS TAKEN IN USE. BESIDES THE IT INDUSTRIES, TAMPERE HAS FACILITATED REMARKABLE TEXTILE, MACHINERY, PULP AND PAPER, FOOD, FOOTWEAR, PLASTIC, MEDICAL AND OTHER INDUSTRIES THROUGHOUT THE PAST DECADES AND CENTURIES. ELECTRICITY OF THE PAST WAS GENERATED BY HYDRO POWER, IN THE FUTURE BY HYDROGEN.

FUTURE PERSPECTIVES

CARBON SEQUESTRATION AND CIRCULATION

IMPROVED INDUSTRIAL EFFICIENCY

FOR CLIMATE BENEFITS AND REPUTATION

NEW RAW MATERIAL SOURCES AND PRODUCTS FOR MEDICAL FOOD, CHEMICAL INDUSTRIES

INDUSTRIAL ACTIVITY BY NEW TECHNOLOGIES

HUNDREDS OF ZERO FIBER DUMPING SITES WORLDWIDE

NOVEL MICROBIAL BIOTECHNOLOGY