

# 2<sup>ND</sup> WORKSHOP ON APPLIED AND SUSTAINABLE ENGINEERING

## SELECTED PRODUCTS OF SUPERFOODS AS A WAY TO ENRICHMENT THE DIET IN THE COMPONENTS SUPPORTING THE TREATMENT OF GOUT

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### SUMMARY

Nutritional treatment of gout is very difficult for apply. Except for curing by medicines, the basis of treatment of gout is changing in lifestyle. People must reduce their weight, and consumption of meat, seafood and alcohol must be limited. In gout is used the low – purine diet too. Cures for gout are focused on analgesic and antiinflammatory effect and diuretic activity. Chosen plant materials could have a strong effect for our health and for curing gout [1]. We can use it for fortified typical food and prepare functional food for supporting treatment of gout. We have chosen 4 plants, which seems the best for this. It is: *Aegopodium podagraria L.*, *Betulae folium*, *Nigella sativa* and sour cherries.

### INTRODUCTION

*Aegopodium podagraria L.*, *Betulae folium*, *Nigella sativa* and sour cherries were chosen as examples of natural functional food to supporting treatment of gout. These plant have a strong analgesic, antiinflammatory and diuretic effect [1,2]. Besides, they can reduce uric acid level in blood and removes uric acid with urine [1].

## NATURAL CURE FOR GOUT

ANTIINFLMMATORY AND ANALGESIC EFFECT

REDUCING URIC ACID LEVEL IN BLOOD

DIURETIC ACTVITY

*Aegopodium podagraria*

*Nigella sativa*

Sour cherries

Sour cherries

*Betulae folium*



*Aegopodium podagraria L.* contains flavonoids, phenolic acids, caffeic and chlorogenic acids, glycosades, hiperoside (3-O-galactoside), kaempferol: tripholine (3-O-galactoside) (quercetin derivatives), falcarnol, falcarnidiol, falcarnin, falkarinolol (polyacetylene), volatile oil, includes mono- and sesquiterpenes. This plant have anti-inflammatory, anti-tumour and anti-microbial effect [1, 3].



Fig. 2. *Nigella sativa* – flower [2, 16]



Fig. 2. *Nigella sativa* – seeds [19]

*Prunus cerasus L.* (sour cherries) contains flavonoids: antocyanins and quercetin. Besides it have hydroxycinnamate, carotenoids, potassium, vitamin C and fiber. [1, 5 8] To treat of gout are used sour cherries or extract from these fruits. These products show the benefits for our health. These substances have anti-inflammatory [1, 6, 7, 8, 9] and anti-oxidative effect [1, 8]. Moreover it may have effects to reduces uric acid level in the blood [1, 6, 7, 9].

*Betulae folium* contains flavonoid compounds [1, 10, 11]: flavonols, such as: quercetin glucosades (hyperoside, rutoside, 3-arabinofuranoside, 3-quercetin rhamnoside, 3-rabinopyranoside), myricetin (3-O-galactotide of kaempferol and myricetin), catechin tannins, flavone-glycosades of luteolin, ascorbic acid, caffeic acid, p-coumarin acid, chlorogenic acid, triterpenes of lupane and dammarane type, mineral elements (Mn, K, Ni, Zn), polisacharydes, volatile oil (acetate of a-butulenol and sesquiterpenes of a-butulenol) [1, 10]. *Betulae folium* have diuretic effect [1, 13, 14]. It removes sodium and chloride ions [1, 11], and also uric acid with urine [1, 12].

### CONCLUSION

Used superfoods products in daily nutrition may reduce risk of many diseases, when we suffer from some disease are we can support your treatment. Sometimes pharmaceuticals medicines are sufficient, especially in treatment of gout. In this place we must use from a several ways: pharmacology/medicine, proper diet, change in lifestyle and also plants materials with bioactive substances. It could be difficult to use these plants in daily meals, because only tea from *Betulae folium* or eating cherries every day could be boring for patients, and then they will forget about these products. They will think about it as about medicines and they should think about it as foods, which have beneficial effects for their health. So, prepared functional food with superfoods is a good way to that.

### LITERATURE

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Fig. 1. Superfoods as a natural cure for gout [1 – 18]

FLAVONOIDS			
PHENOLIC ACIDS	SAPONINS, MELANIN AND TANNINS	HYDROXYCINNAMATE	FLAVONE
PHENOLIC COMPOUNDS FROM COUMARIN GROUP	VITAMINS – CAROTENE AND VITAMIN B1 AND B6	VITAMINS – CAROTENOIDS AND VITAMIN C	TRITERPENES OF DAMMARAN E AND LUPANE TYPE
ORGANIC ACIDS – caffeic and chlogenic acids	MINERAL ELEMENTS - Ca, Mg, Fe, Na, K, Se i Zn	MINERAL ELEMENTS – POTASSIUM	MINERAL ELEMENTS - K, Mn, Zn, Ni
QUERCETIN DERIVATIVES	ORGANIC ACIDS AND ESSENTIAL AMINO ACIDS	MELATONIN	ORGANIC ACIDS AND POLISACHARIDES
POLYACETYLENE	ESSENTIAL FATTY ACIDS	FIBER	KATECHIN TANNINS
VOLATILE OIL			