

# CACTUS FRUIT INGREDIENTS (*OPUNTIA FICUS INDICA*) INCORPORATED IN FOOD SUPPLEMENTS FOR WEIGHT MANAGEMENT



Zagorka Blazevska BSc.Pharm.

VITA NOVA –ZA d.o.o ; Skopje R.Makedonija  
zblazevska@vitanova.com.mk

## INTRODUCTION

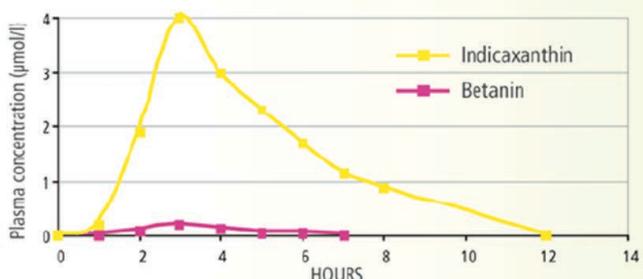
*Opuntia ficus indica* is a species of cactus that belongs to the family Cactaceae. This family includes about 200 subspecies of cacti that are most abundant in America. The most common culinary use has Indian Fig *Opuntia ficus indica*, because its leaves are the position for use as fresh salads. Cactus fruit is consumed ripened in the summer. Most are widespread in the Western Hemisphere (Mexico) and west part of America, but can be found in other parts of the world (Galapagos Islands, Australia). In the Mediteranian region (Africa, Tunisia, Malta) is very widespread due to its favorable climate and in Europe can be found in parts of southern France, southern Italy, Sicily, Portugal and Spain. In Egypt, Libya and Jordan, the fruits are yellow and cultivated on farms and consumed as a refreshing fruit. Because of the possibility of adaptation to cold, Canada is another country where this type of cactus that can grow.

Biologically active constituents of preparations used in food supplements were obtained by gradual technological process of chopping, pressing and clarification, and vacuum evaporation fruit *Opuntia ficus indica*. The resulting powder form of *Opuntia ficus indica* fruit contains a total of 65-85% betalaine in form of indicaxanthin and betanin.



## Antioxidant protection

Plasma kinetics of betalains studied in healthy volunteers after a single ingestion of 500g cactus pear fruit pulp.

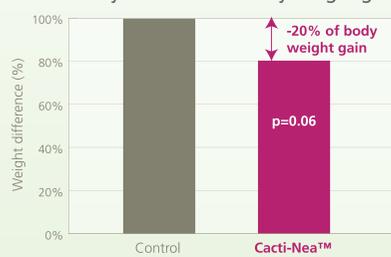


Preliminary data highlighted that cactus pears increase cell antioxidant capacity (+50%) and protect LDL from oxidation.

## Weight management control

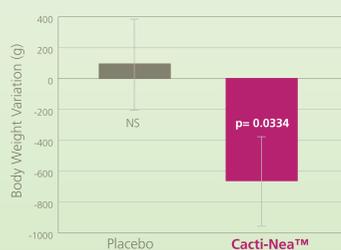
A 7-days preliminary in vivo study on rats highlights the positive effect on weight control:

In vivo study: reduction of body weight gain



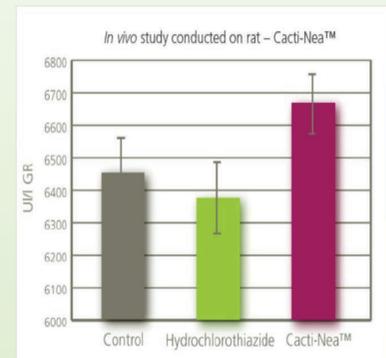
The consumption of powder cactus fruit induced a reduction of weight gain by almost 20% compared to control.

Clinical study\*\*\*: body weight variation



A clinical study\*\* confirms the weight-management effect: significant weight loss (up to 3.3kg) is observed in the cactus fruit powder while no effect on body weight is observed in the Placebo group.

\*\*4-weeks clinical study on 49 women with normal MBI (between 20-25), placebo controlled, in parallel double blind format, monocentric and randomized, with daily dose of 2g (2009)

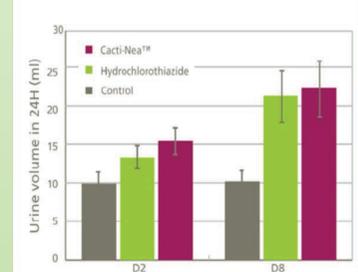


After only 7 days, the consumption of powder cactus fruit induces a significant increase in the globular rate of glutathione peroxidase (antioxidant marker).

## Diuretic effect

The first in vivo study conducted on rats in comparison with pharmaceutical diuretic substance highlighted the diuretic properties of powder cactus fruit.

In vivo study on rats: diuretic activity of powder cactus fruit



For the same amount of water ingested by rats, cactus fruit, showed significant diuretic effect by doubling the urine volume (p=0.037) while preserving minerals.

The latest clinical study conducted on women with water-retention troubles shows that powder cactus fruit helps to significantly increase diuresis by 27%

## RESULTS

Evaluation of diuretic, antioxidant properties and reduction of weight, of powdered cactus fruit was performed in male Wistar rats, seven-day oral consumption with a dose of 240 mg/kg/day corresponding to human equivalent dose of 2 g/day. The result of these studies conducted in rats, and later on women, showed positive effect of powder cactus fruit (*Opuntia ficus indica*). Body weight of rats that consumed the cactus fruit was reduced by 20% compared to the control group. Diuretic effect gives increased diuresis without affecting the electrolytic balance of the organism, and antioxidant properties are shown through increasing the globular concentration of peroxide glutathione peroxidase.

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## LITERATURE

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