

Water global health benefit: the water footprint of different dietary patterns and their acceptability

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1. Introduction

Water is an exhaustible, but fundamental resource for life. Unfortunately, current data show a growing and worrying global water scarcity condition and the **food production system** seems to play a significant role on it. Moreover, in this pandemic era, the spread of Covid-19 is closely linked to water consumption, as washing hands can reduce the transmission and help people stay healthy.

We conducted the present research with two specific aims:

- to assess **water consumption of five widespread dietary patterns**: Western diet, Mediterranean diet, flexitarian diet, diet for athletes, and 100% plant-based diet
- to assess the level of **acceptability of the winner diet**, that showed the lowest water consumption

2. Material & methods

Two different assessments were made:

Calculation of the water footprint of the five chosen dietary patterns

- a daily hypothetical food plan for each dietary pattern was defined considering an ideal subject (aged, 30 – 59; average estimated caloric expenditure, 2.200 kcal; mean weight, 69 kg)
- the water footprint of the five dietary plans was calculated considering both the Water Footprint Calculator (m³/year) and a manual calculation (l/capita/day) on the basis of tabulated values

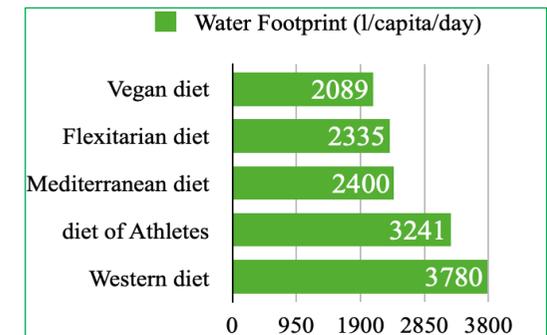
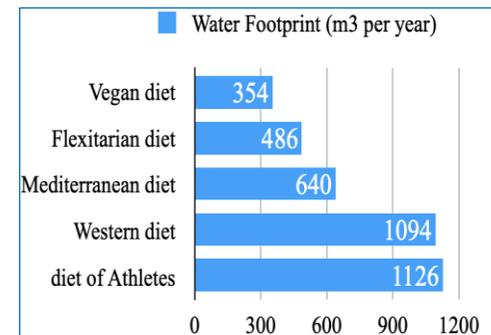
Level of acceptability

- the acceptability of the winner diet was assessed by administering a 17-item validated questionnaire to a convenience sample of 126 adults (mean age, 26 years; females, 62.7%)

3. Results & Discussion

Water Footprint calculation

The **100% plant-based diet is the winner diet**, since it showed the lowest water consumption in both the calculations made



Level of acceptability of the 100% plant-based diet

Data collected by means of the questionnaire suggested an **intermediate level of acceptability** (mean score, 3.86) of this diet

4. Conclusions

The **adherence to a dietary pattern with a large amount of cereals, legumes, fruit, and vegetables could favor the reduction of water consumption** (in terms of 740 m³ per year of water, or 1.691 liters per capita per day, according to the two different modes of calculation) & **contribute in limiting the environmental impact** and better protecting human health.

However, **its level of acceptability represents a critical aspect** that should be considered in any attempt to promote diets very close to vegan