



Evaluation of fruit and vegetable consumption as phytonutrient potential in Lebanon



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Introduction

The Mediterranean diet is well known as one of the richest diets in phytonutrients in fruits, vegetables, grains and olive oil. Fruits and vegetables are known to contain considerable amounts of vitamins and minerals in addition to phytonutrients and bioactive compounds having many positive health effects. Therefore, it is crucial to evaluate the fruit and vegetable consumption as sources of phytonutrients of the Lebanese population. The question came up whether the Lebanese population is a typical example of good fruits and vegetables consumers? How is this consumption making them privileged compared to other populations?

The aim of this study was an evaluative survey related to fruits and vegetables consumption in Lebanon. This fruit and vegetable consumption evaluation involves the assessment of the frequency of consumption of these food products, the awareness of the population regarding the importance of fruit and vegetable consumption and their valuable content of phytonutrients will be assessed.

Research Methods

The below methods exist to assess the dietary consumption of fruits and vegetables.

Study population:

- 390 healthy Lebanese individuals,
- 49.7 % males, 50.3 % females.
- Aging between 20 and 65 years old.
- From six Mohafazat, 9 % Beirut, 25 % Mount Lebanon, 22 % North, 19 % South, 13 % Bekaa and 12 % Nabatieh.

Tool:

Questionnaire constituted of the following sections:

Part I: Socio- demographic questions

Part II: Personal question

Part III: Food habits and food frequency questions

Part IV: Awareness questions

Part V: Fruits and vegetables frequency questionnaire



Questionnaire filling by respondents

Results

Almost half of the Lebanese population (49.23%) have a high level of awareness, and are taking into consideration the important effects of phytonutrients and bio-compounds available in fruits and vegetables (Fig. 1).

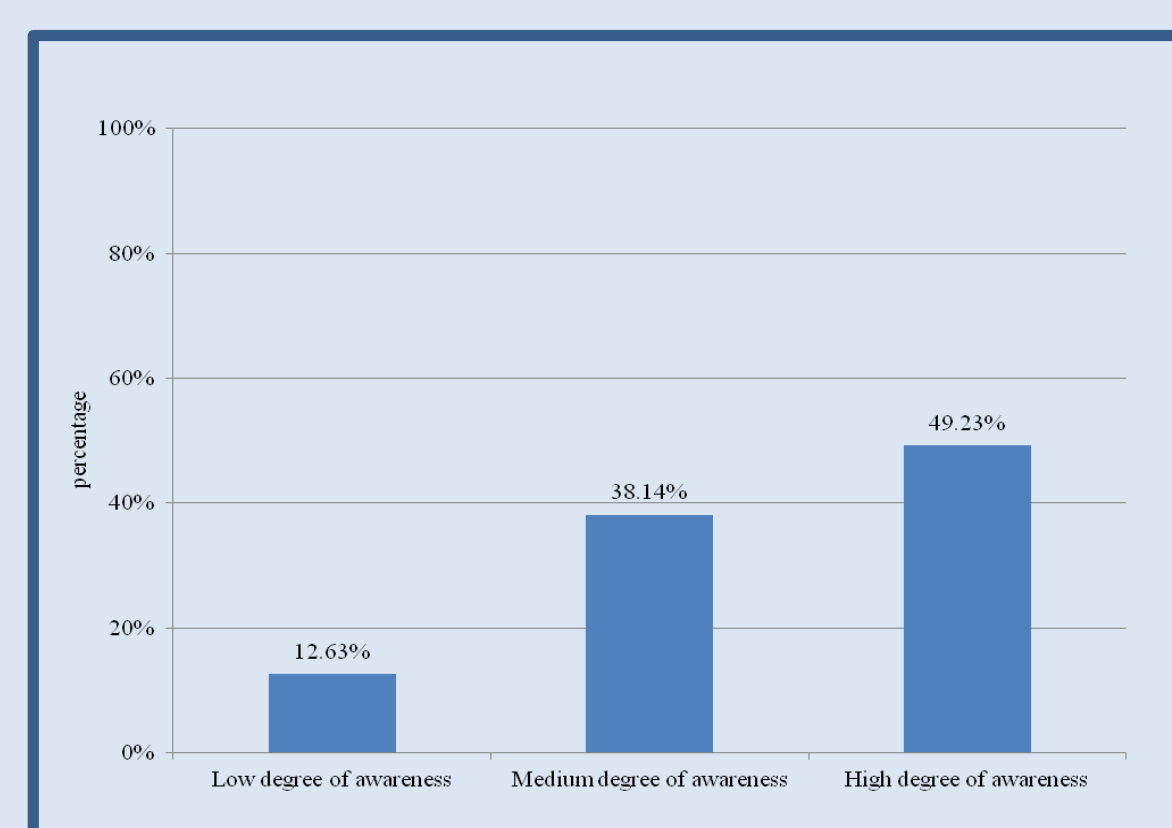


Fig 1 :General degree of awareness regarding phytonutrients



A significant difference in fruits consumption compared to the different age ranges is observed ($p=0.042$). (Fig. 2). The area of residence is significantly affecting the level of fruits and vegetables consumption ($p=0.001$ for vegetables) and ($p<0.001$ for fruits) (Fig. 3).

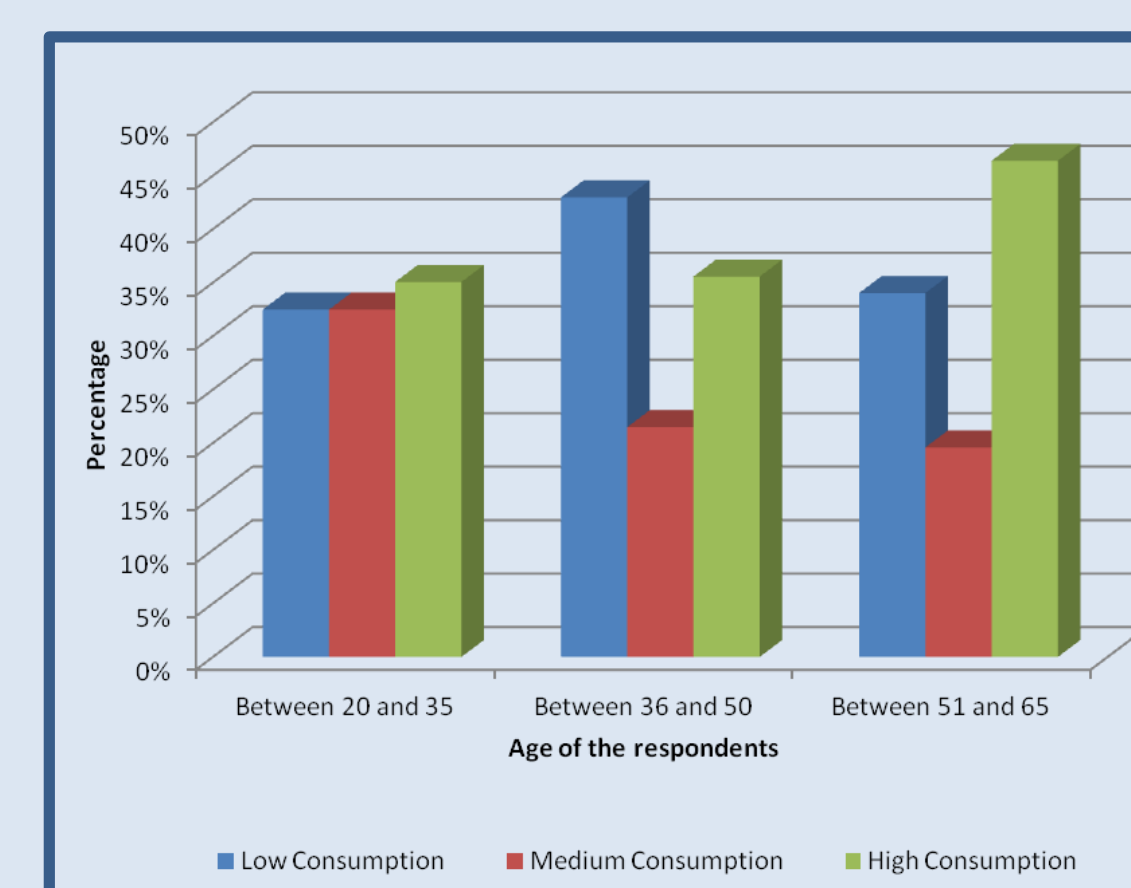


Figure 2: Distribution of fruits consumption based on age categories

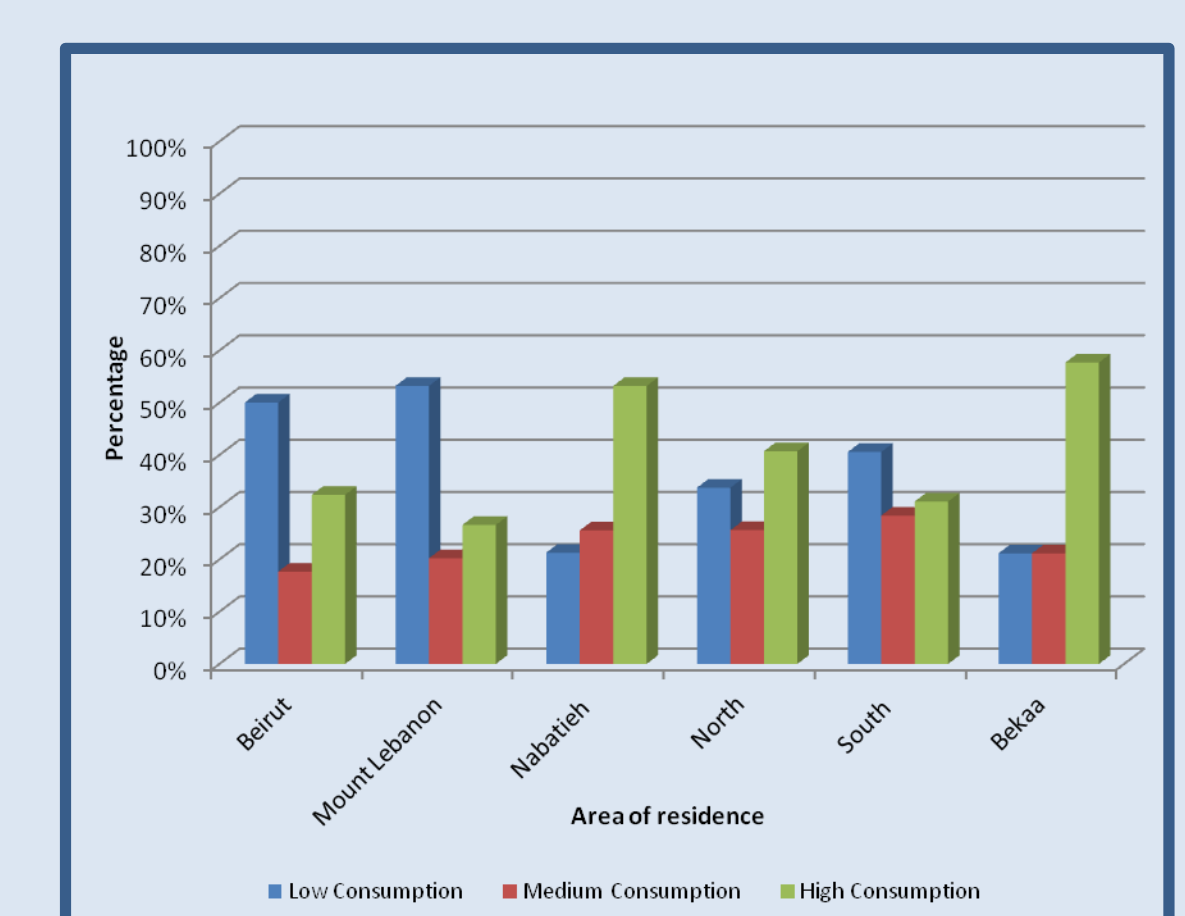


Figure 3: Distribution of vegetables consumption according to the area of residence

A significant difference of vegetables consumption ($p=0.032$) and fruits consumption ($p=0.025$) is noted based on whether the participants are working or not ($p=0.032$) (Fig. 4 and Fig. 5)

Furthermore, a clear effect is shown on the fruit consumption levels depending on the salary ranges, with $p=0.006$ (Fig. 6). Most frequently consumed vegetables are cucumber and tomatoes, in case of fruits orange and apples are the mostly preferred (Fig. 7).

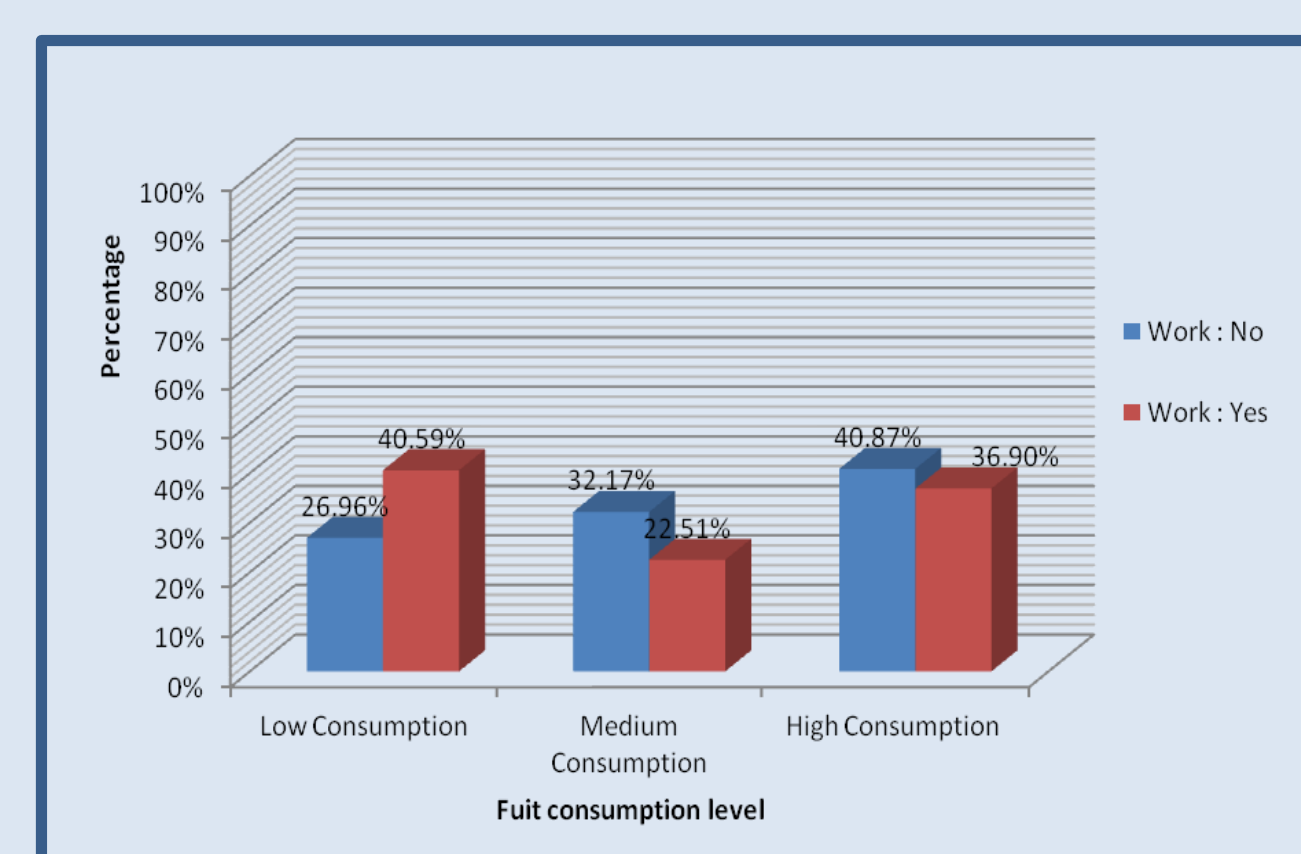


Figure 4: Distribution of fruits consumption according to work

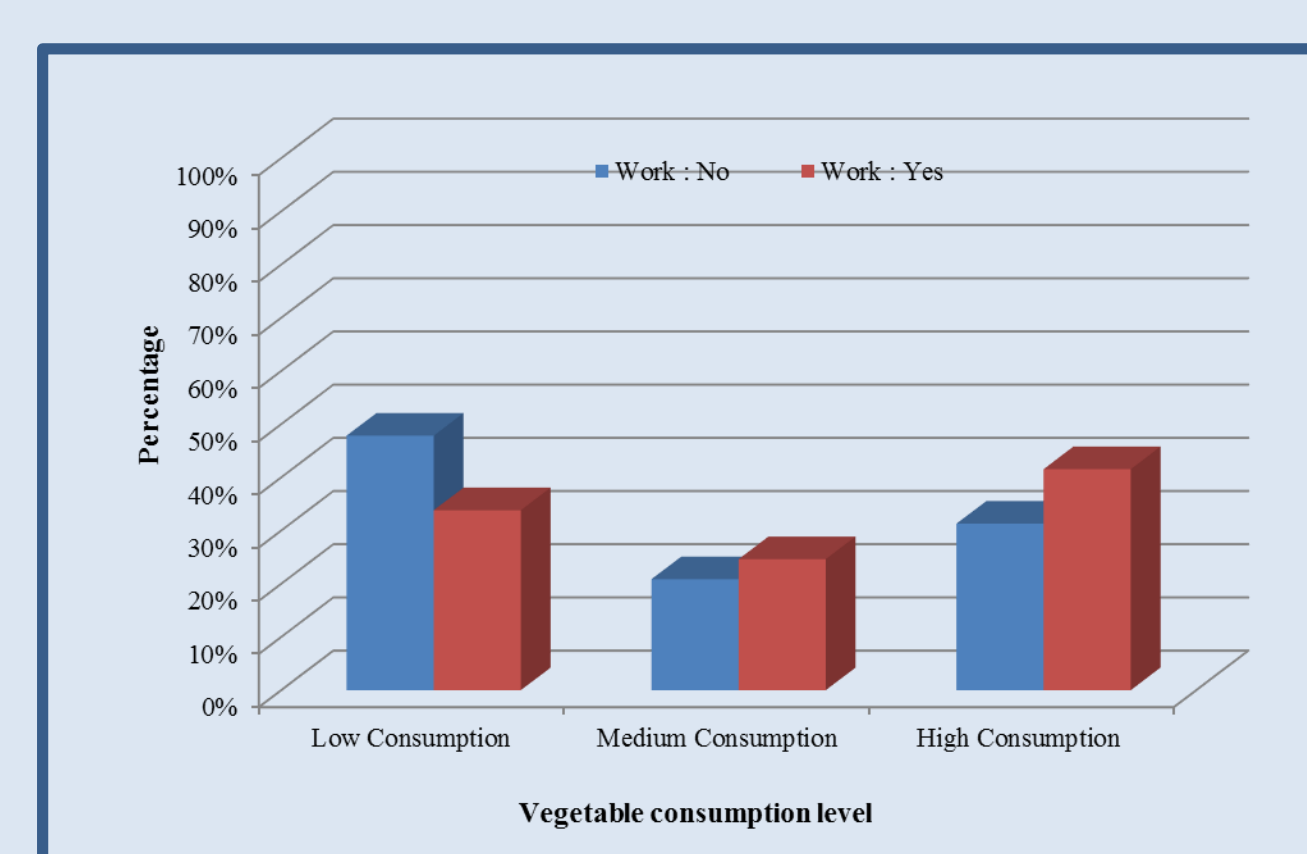


Figure 5: Distribution of vegetables consumption according to work

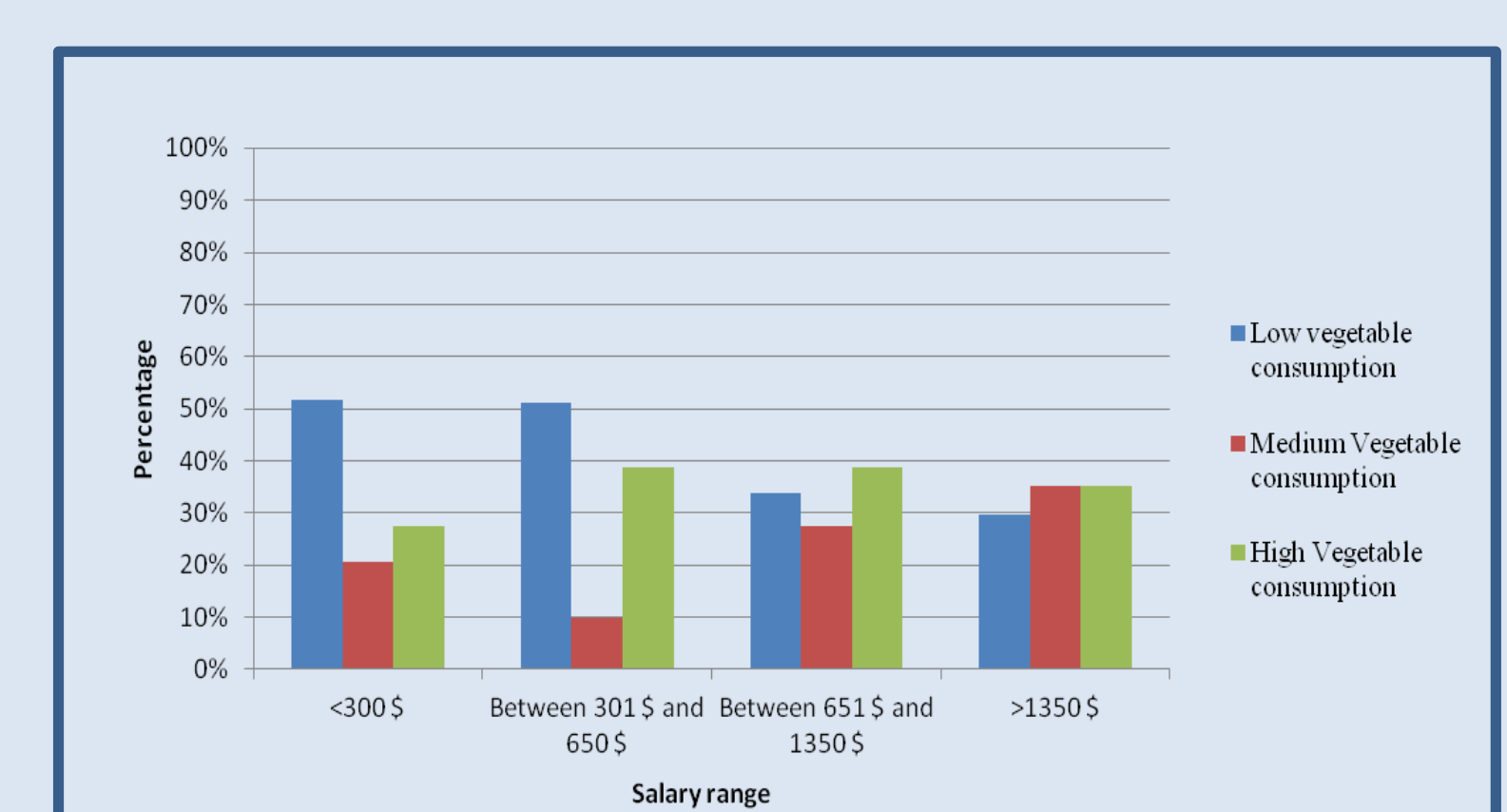


Figure 6: Distribution of vegetables consumption according to salary ranges

Conclusion

- In general it can be concluded that the consumption of fruits and vegetables is comparable high in the Mediterranean region.
- There is no gender difference in the consumption of fruits and vegetables
- The area of residence, eating outside and smoking are affecting the vegetables consumption in the Lebanese population.
- In rural regions as in the Bekaa and Nabatieh, were detected the highest consumption level of fruit and vegetables, which could be correlated to the availability and harvest areas.
- It can be recommended to create new awareness programmes in Lebanon concerning the importance of fruits and vegetables consumption, focusing on the positives health effects that will be provided.
- The Lebanese population, is recommended to increase its daily intake of fruits and vegetables and to vary among the types consumed, since each kind contain different vitamins, minerals and phytonutrients.

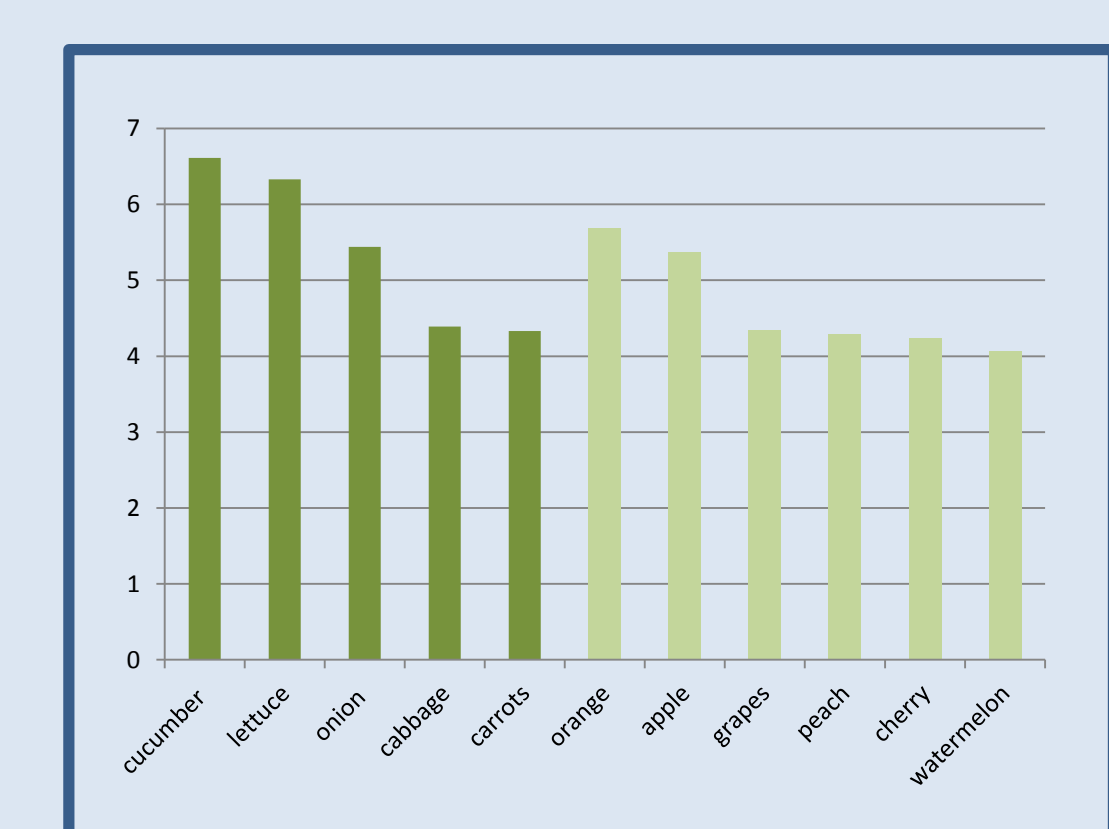


Figure 7: Most frequently consumed vegetables and fruits per year in Lebanon