

The quality of organic kefir produced with kefir grains and freeze-dried starter culture

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INTRODUCTION & AIM

Organic dairy products including fermented beverages are gaining popularity among consumers. Traditionally, for kefir production, kefir grains are used; however, in the modern industry often freeze-dried cultures are preferred. This study aimed to analyze the quality of kefir produced from organic cow milk with two fermentation times (12 and 24h) with the use of kefir grains or freeze-dried culture.

MATERIALS

Kefir variant	Starter culture	Fermentation
L12	Freeze-dried	12h/30°C
L24	Freeze-dried	24h/30°C
G12	Kefir grains	12h/30°C
G24	Kefir grains	24h/30°C

METHODS

The study was conducted during a 3-week refrigerated storage period (4±1°C). Within the study physicochemical properties, color, index of syneresis, texture parameters, sensory properties and microbiological quality were evaluated.

RESULTS

- Using the freeze-dried culture and a fermentation time of 24h, a kefir with the lowest tendency to syneresis, the best textural properties and desired sensory characteristics was obtained.
- Kefir grains had a better acidification ability and the resulting products had higher count of lactococci and yeasts.

CONCLUSION

- The results proved that organic cow milk is a suitable raw material for kefir production.
- Both the type of starter culture and the fermentation time affected the quality characteristics of organic kefir.
- The longer fermentation time of 24 hours is more appropriate for the production of kefir with both traditional kefir grains and commercial freeze-dried culture.
- Kefir grains, as a traditional form of kefir culture, may be preferred in organic kefir production.
- The obtained organic kefir can be introduced to the market due to their good quality properties.

RESULTS - GRAPHS

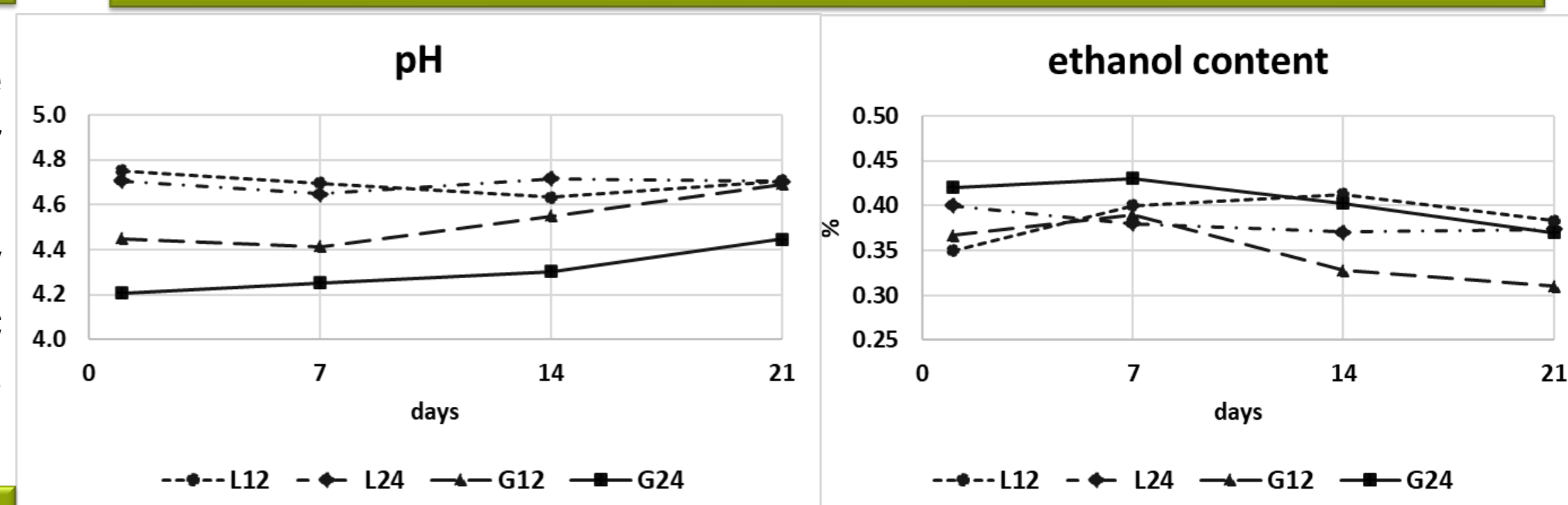


Figure 1. Chosen physicochemical properties of organic kefir during storage.

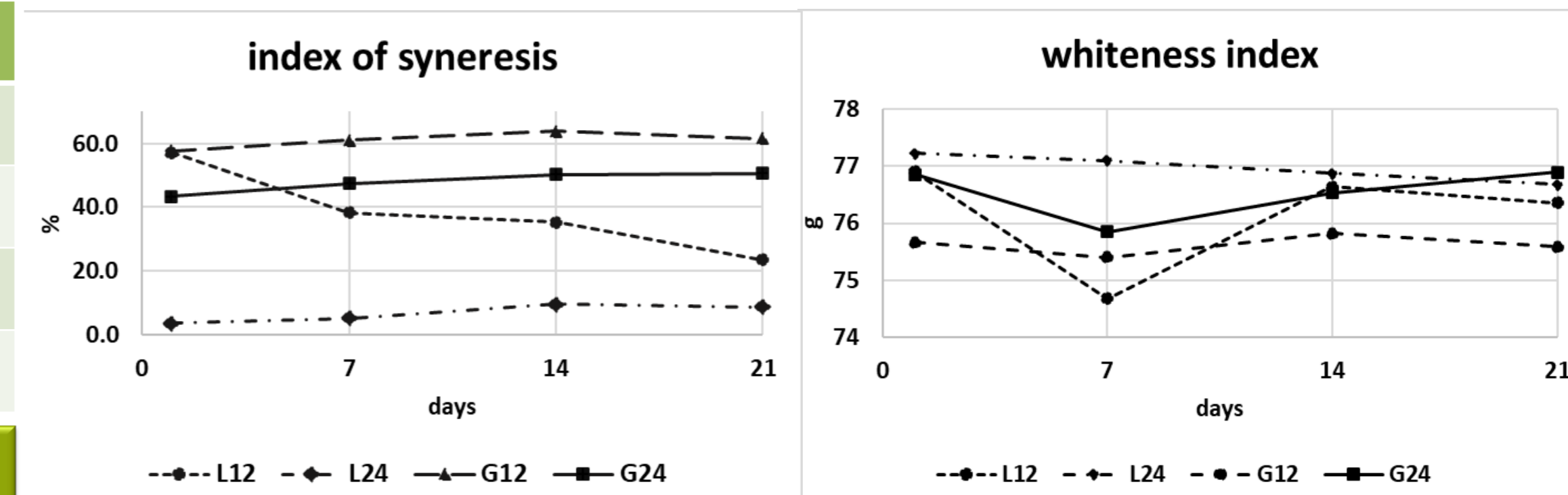


Figure 2. Index of syneresis and whiteness index of organic kefir during storage.

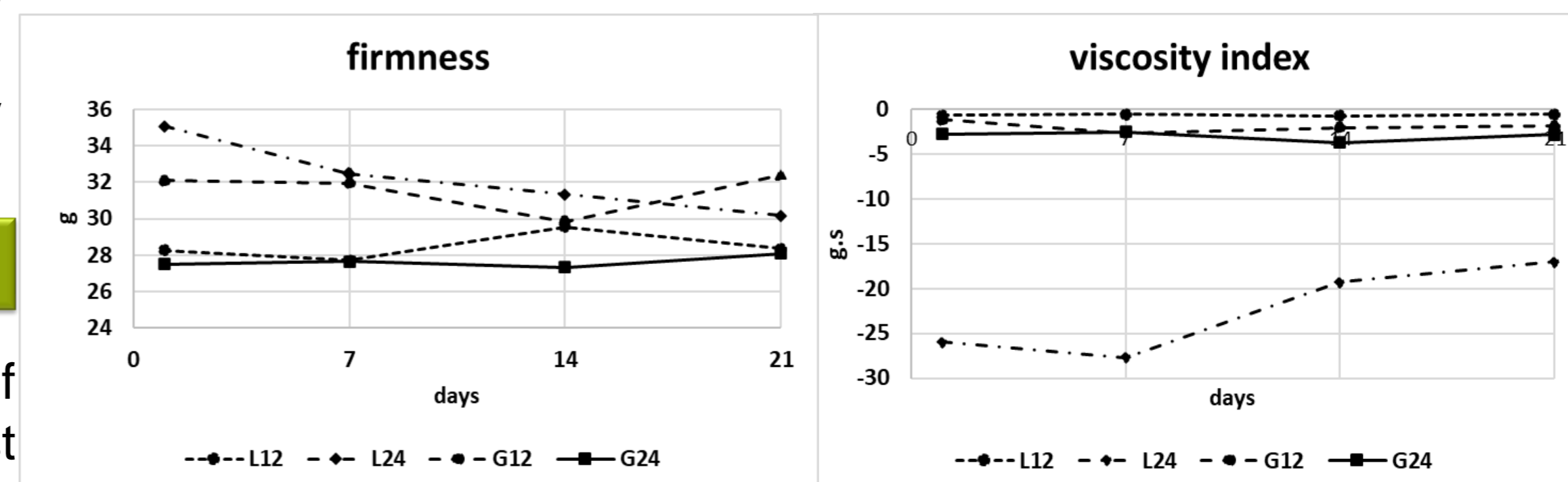


Figure 3. Chosen texture parameters of organic kefir during storage.

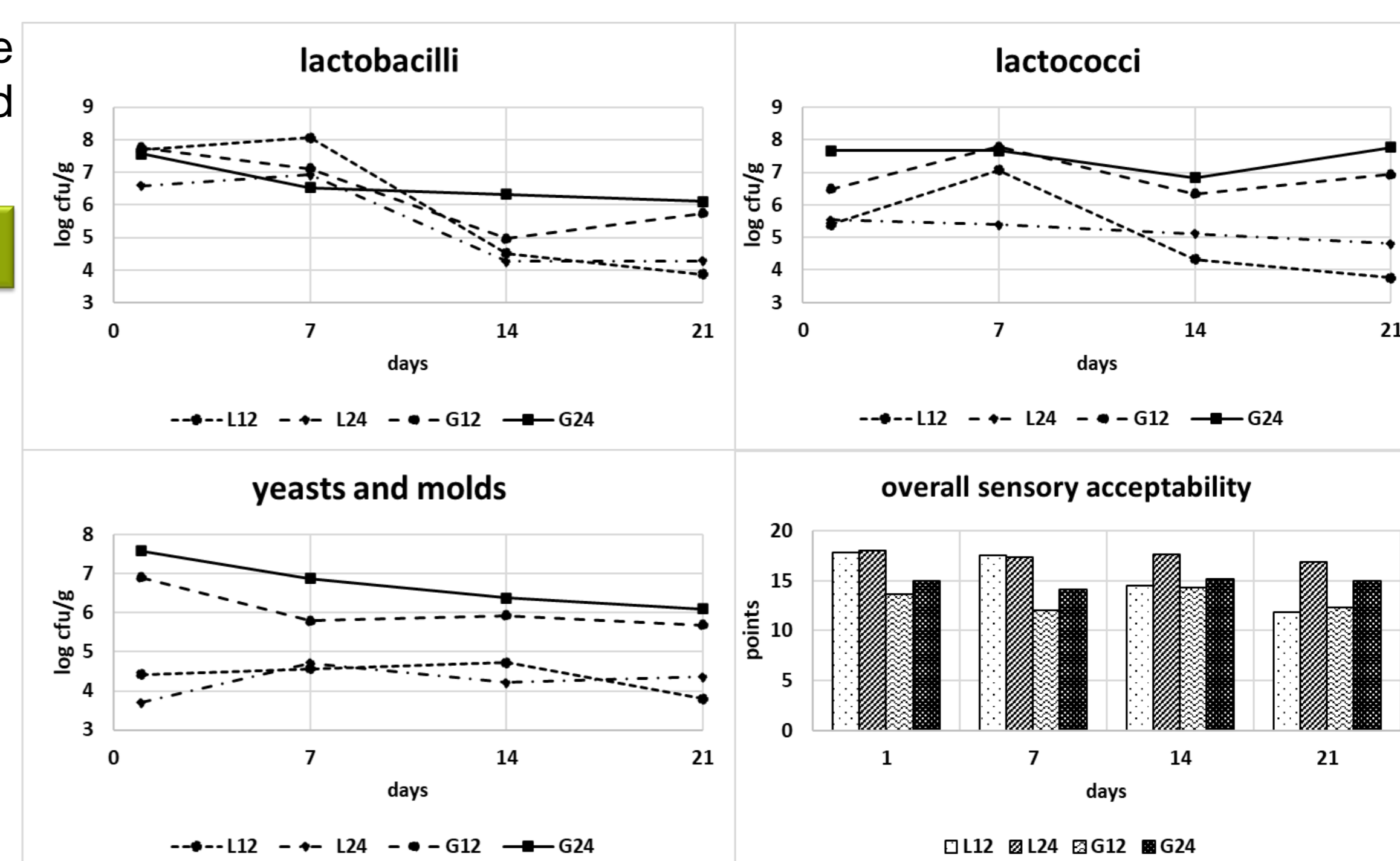


Figure 3. Microbiological quality and overall sensory acceptability of organic kefir during storage.