



EFFECT OF SOAKING AND WASHING PRETREATMENTS IN GRAINS OF TWO VENEZUELAN RICE GENOTYPES FOR SUSHI PREPARATIONS



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INTRODUCTION

In Venezuela Japanese restaurants have become very popular due to sushi increased consumption. Rice varieties suited for sushi preparations are not well adapted to Venezuela field conditions, thus grains should be imported. Sushi rice grains have different size, shape, amylose content, and cooking behavior than rice commonly consumed in Venezuela, beside, it's more expensive. At present study, soaking and washing pretreatments of grains from adapted rice genotypes in Venezuela

METHODS

The effects soaking and washing pretreatments (Table 1) on instrumental texture (TA-XT2) and amylograph profiles RVA (AACC, 1995) the rice genotypes "DPR1" and "CT15705" (low-amylose) were performed and rice were measured using as reference a commercial "japanese sushi rice" (low-amylose) and "venezuelan rice" (intermediate-amylose). Later, sushi rolls (Alaska) were made using the best pretreatment combination in a commercial Japanese restaurant in Caracas and affective sensory test was applied with fifty consumers (Figure 1).

Table 1. Pretreatments

Pretreatments	Description ¹
W-S	Washing three times followed 30 min soaking. Volume ratio water:rice (2:1)
S-W	Soaking 30 min followed washing three times. Volume ratio water:rice (2:1)
NPT	No pretreatments

1. All rice samples were cooking in volume ratio water: rice 2:1



Figure 1. Affective sensory test in restaurant

RESULTS

Pretreatment affect textural and functional starch properties of genotypes evaluated ($p < 0.05$). Soaking and washing increased pasting temperature, holding strength, setback and consistency, while decreased peak viscosity and breakdown of rice samples (Figure 1 and 2). On the other hand, textural aspects like adhesiveness, cohesiveness and gumminess increased, while springiness and chewiness decreased (Figure 4).

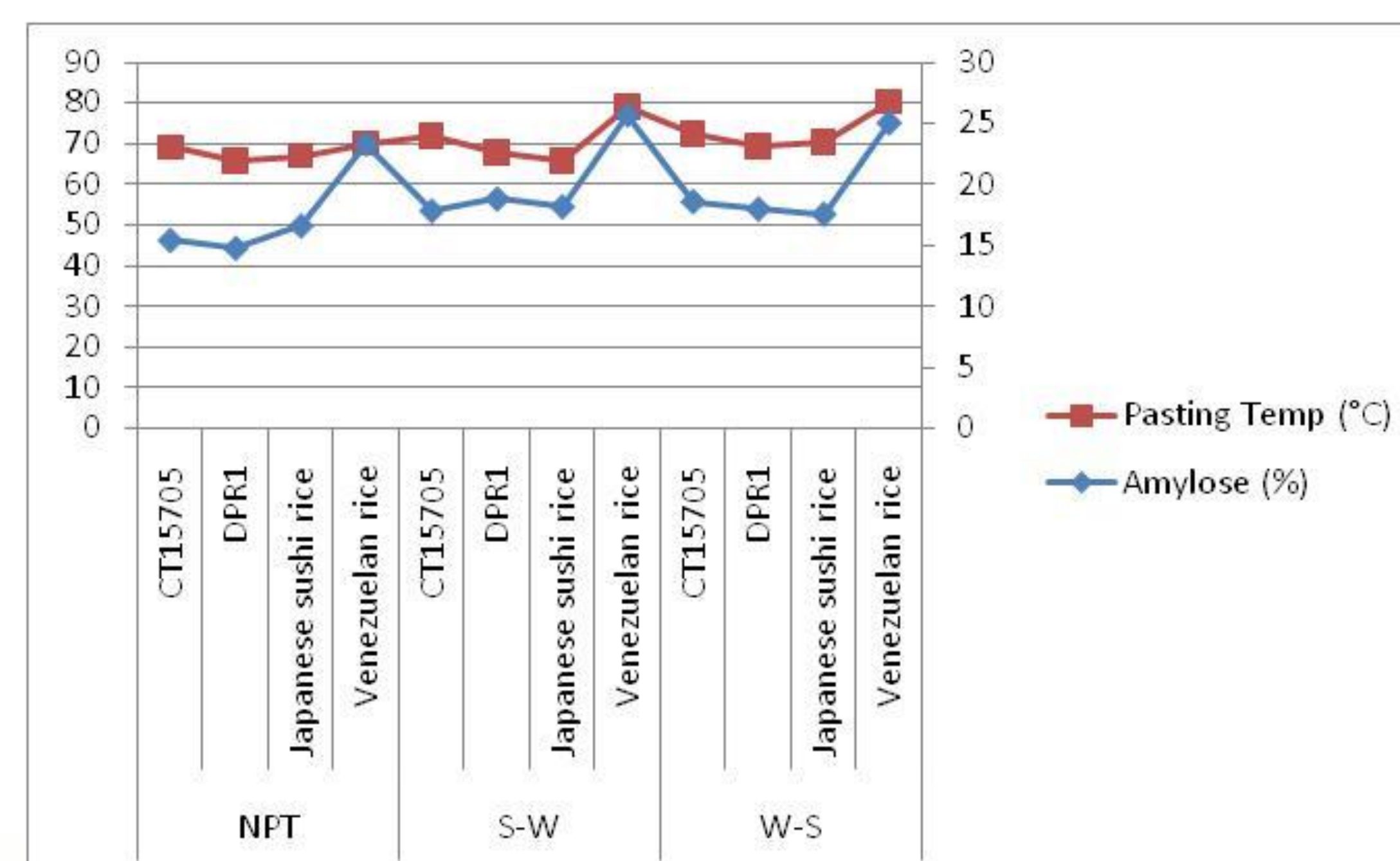


Figure 2. Amylose content and Pasting temperature (RVA)

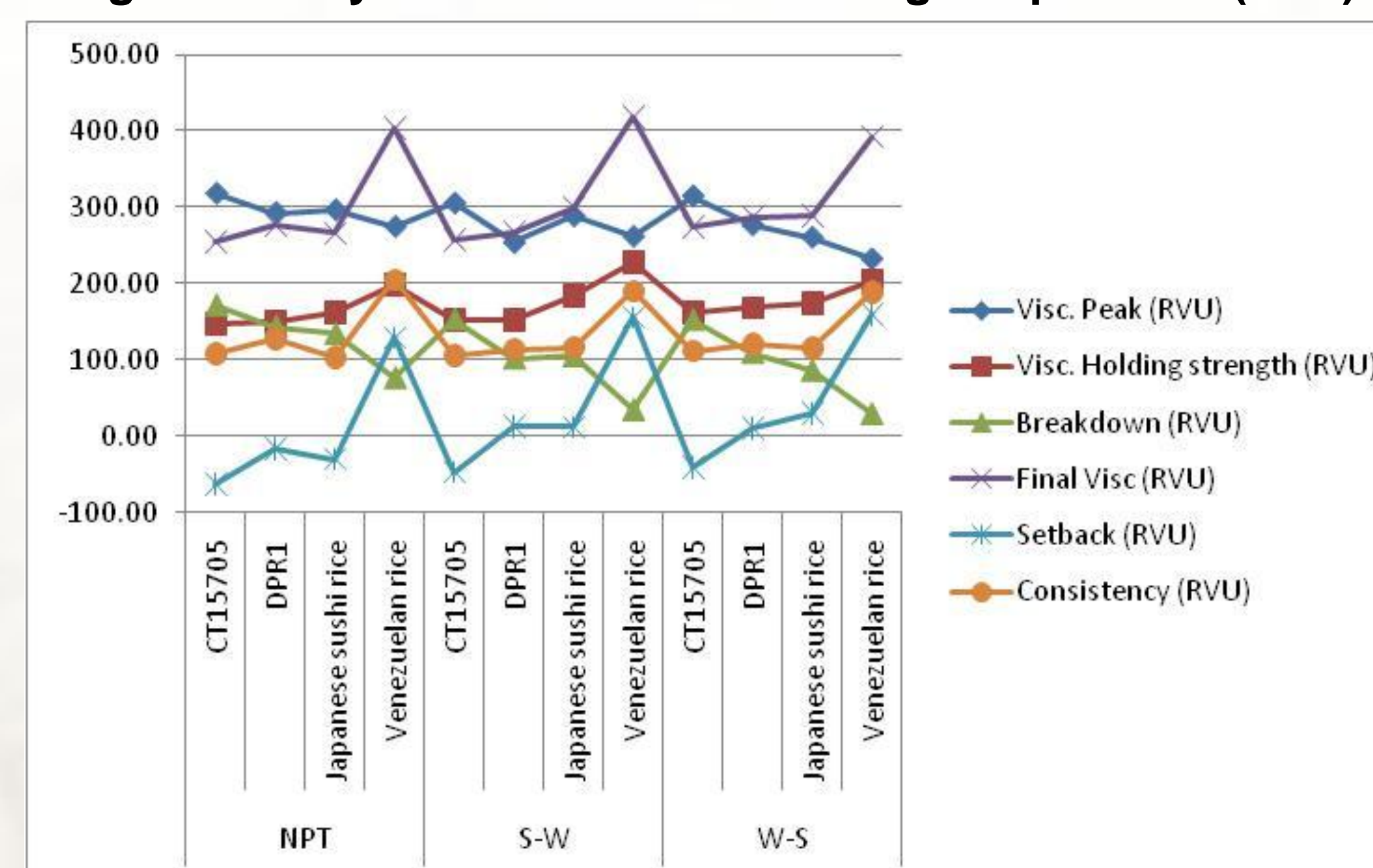


Figure 3. Results profile RVA

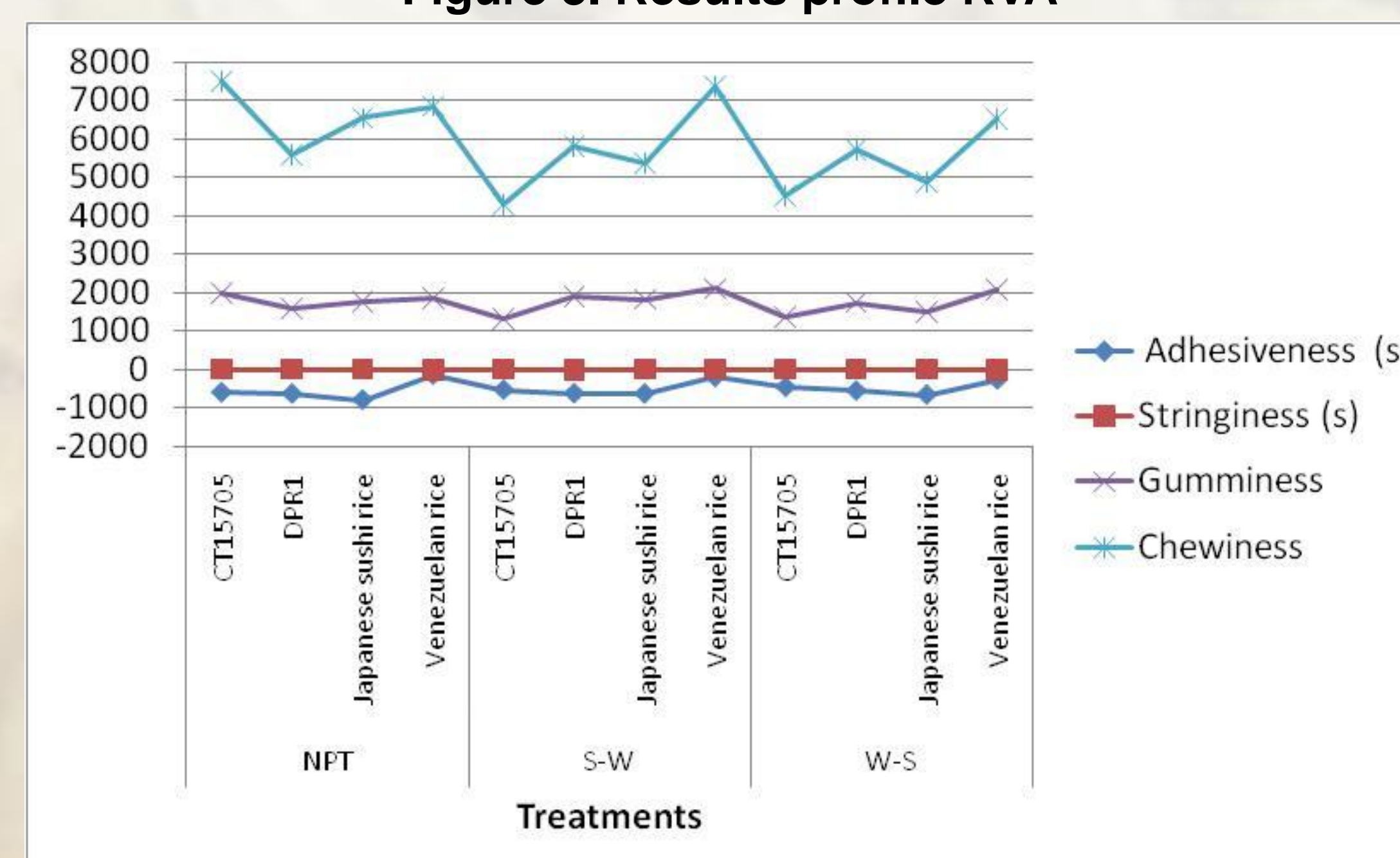


Figure 4. Results instrumental texture TA-XT2

Low-amylose rice samples washed three times followed by 30 min long soaking performed similar to "japanese rice". Consumer preference reached was 42%, 35%, and 23% for rolls from "DPR1", "japanese sushi rice", and "CT15705", respectively.

CONCLUSION

Pretreatments improved the potential of Venezuelan adapted low-amylose rice cultivars for sushi preparations.

REFERENCES

American Association of Cereal Chemists, AACC 1995. Approved Methods of the AACC, 9th ed. Method 61-02. Determination of the pasting properties of rice with the Rapid Visco-Analyser, approved Oct. 1994. The Association: St Paul, MN.

