

# Does a Metal Spoon improve the Quality of Left-over Sparkling Wine?

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## Abstract

We investigated the verity of a wide-spread folk wisdom that left-over sparkling wine is conserved much better with a metal spoon hanging in the neck of the bottle. In a carefully controlled experiment we do not find any measurable improvement in the shelf life time of cider. We extend the results to more valuable, similarly produced liquors, which we were unable to test directly.<sup>1</sup>

## 1 Introduction

It has been widely reported that half-finished bottles of sparkling wine can be successfully conserved overnight by hanging a metal spoon in the neck of the bottle. We collected evidence of this folk wisdom from Germany (concerning sekt) [1], the Netherlands (champagne with silver spoon) [2], Spain [3] and Italy (also for beer, and the spoon material is immaterial) [4]. Care must of course be taken not to let the metal touch the wine [5]. As far as we know [6] this effect has not been tested experimentally, mainly due to the improbability of having two half-empty bottles in a relatively small region

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<sup>1</sup>Note ajoutée lors de la mise en presse: après avoir terminé la rédaction de cet article, nous avons été informés qu'une expérience similaire avait été effectuée récemment par M. Valade, I. Tribaut-Sohier et F. Panoëtis, publiée dans *Vigneron Champenois* (dans *Pour la Science*, marche 1995, 141).

of space-time [7]. Scientific confirmation would incalculably ease household budgets in an era of ever increasing fiscal pressures, as well as contributing to a reduction of CO<sub>2</sub> emissions [8].

After a small pilot study we did a controlled comparison of the quality of sparkling fluid after 16 hours storage with and without the conservation strategy. Due to budgetary constraints the pilot study examined the effect with beer, whereas the main experiment was performed on cider. We hope to be able to attract funding for an extended version using champagne Grand Cru shortly. The layout of this letter is as follows. We describe the set-up of the experiment, and discuss the results. Conclusions are drawn on the use of spoons to extend the usable life-time of half-empty bottles of sparkling wines.

## 2 Experiment

A small pilot study was done by one of us (FLJV) on two 33 cℓ bottles of beer [9], which were opened in identical ways and half-emptied. A plastic spoon was inserted in the neck of one bottle as prescribed [4]. The bottles were left in an uncooled culinary environment for 18 hours. The experimenter could not discern any flavour difference, in spite of specific claims made regarding this situation [4]. This null result obviously called for a larger, controlled experiment with higher statistics and more universally mentioned materials.

The main experiment was performed on the two 3/4ℓ bottles of cider ‘Carte Blanche’ [10] shown in Fig. 1. The physical properties resemble the ones of sekt and champagne closely enough that we can generalize to other varieties of liquors produced by the méthode champagnoise. In its own right, this cider is known to be used by many students. The mass-produced quality ensured that the two bottles were identical in contents.

The bottles were chilled to 7° and each 50% emptied at the start of the experiment (5:30 PM). Next, a teaspoon (stainless steel, slightly twisted) was hung in the neck of bottle A as shown in Fig. 1, and both were returned to the refrigerator (Vendomatic 7102, circa 1975). The next day at 10 AM, an expert panel tasted the contents of these two bottles in a blind randomized trial: each panel member was given two plastic cups marked 1 and 2 with approximately 5 cℓ of liquid and asked to mark the effervescence (fizziness) and flavour (taste) on a scale from 1 to 10. The mapping from A,B to 1,2 was known only to one of us (GJvO), who did not participate in the tasting.



Figure 1: The experimental set-up; the spoon is clearly visible in bottle A (left).

		number of valid ratings	rating (0–10)	standard deviation
Spoon	Effervescence	9	$6.44 \pm 0.41$	1.17
	Flavour	10	$6.50 \pm 0.50$	1.50
No spoon	Effervescence	9	$6.33 \pm 0.53$	1.49
	Flavour	10	$6.50 \pm 0.40$	1.20
Difference	Effervescence	9	$0.11 \pm 0.61$	1.73
	Flavour	10	$0.00 \pm 0.39$	1.18

Table 1: Results of the panel tasting.

### 3 Results

The results of the panel are summarized in table 1. One measurement of the effervescence gave a difference of 6 points between the samples, and was discarded<sup>2</sup>. The difference in ratings between the two bottles was more consistent than the individual ratings due to a wide variety in preferences, however, it is clear from the table that the cider was generally not highly appreciated<sup>3</sup>. According to the two panel members who had assisted in Phase I the effervescence had significantly decreased since then. However, the panel did not find any significant difference between the treated and control samples in either effervescence or flavour. In fact, 4 panel members found the untreated liquid superior in both flavour and effervescence, whereas only 5 thought the spoon-improved liquor more fizzy (4 for taste). The rest detected no difference. The variance of the results is about the average for a 10-point scale.

At the  $1\sigma$  level (N=10) there is therefore no preservation of either CO<sub>2</sub> concentration or aromatic content of the investigated liquor, in clear contradiction with the reports of Refs [1, 2, 3, 4].

### 4 Conclusions

We performed a strictly controlled blind tasting trial to establish whether the conservation time of half-finished sparkling liquor is extended by the insertion of a metal spoon in the bottle during overnight cooled storage. An expert panel did not find any measurable improvement in either effervescence or flavour between the treated sample and a control sample. We conclude that this widespread folk wisdom does not hold for cooled cider. This is supported by a small pilot study with a less elaborate set-up. Due to the similarity in physical characteristics<sup>4</sup> we expect the same conclusion to hold for other beverages in the same category, such as sekt and champagne. Funding is being sought for future experiments to investigate this extrapolation.

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<sup>2</sup>With this point included the results would have been  $0.70 \pm 0.80, 2.41$ .

<sup>3</sup>The average corresponds to half-way between ‘sufficient’ and ‘average’ in the standard Dutch scoring system which was used.

<sup>4</sup>with the possible exception of sugar concentration, which should not affect the outcome.

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