

# JACOBSEN VINTAGE

With Jacobsen Vintage No. 1, the Jacobsen Brewhouse sets a new Scandinavian record with the most expensive beer at the price of DKK 2008 per bottle.

Only 600 bottles have been brewed; each with an original lithographic label by the Danish artist Frans Kannik. The Danish artist, Frans Kannik, has made four lithographic labels for Vintage No. 1. These labels depict fables of Sif. Sif was married to the Nordic god, Thor, who was used by Carl Jacobsen as a symbol of strength.

The beer type is a Barley Wine which is similar to strong ale. Vintage No. 1 has, as the only contemporary beer, been aged for six months on new Swedish and French oak barrels in J.C. Jacobsen's original basement from 1847 and has been aged for six months on new Swedish and French oak barrels.

The project started as an experiment and a wish to create a new type of beer, which has not been seen before. During ageing in new oak barrels, lots of chemical processes take place. Not all chemical reactions are known, but they





taste wonderful, says Jens Eiken, Head Brewer of the Jacobsen Brewhouse.

The Jacobsen Vintage No. 1, 2008, is a barley wine, which is characterized by intense caramel and Sherry/Madeira-like flavours from Maillard reactions. The hop compounds are slowly degraded into flavour active esters, like ethyl 3-methylbutyrate and ethyl 2-methylbutyrate, leading to wine-like flavours. During ageing on *new* oak barrels, other processes also take place, which are very dependent on the type of oak used, as well as the desired degree of toasting. The temperatures used during toasting will create different aromas in the oak barrel, leading to very complex beers, see figure 1. The flavours coming from the new oak barrels, in the Jacobsen Vintage No. 1, are mainly vanilla and smoky aromas.



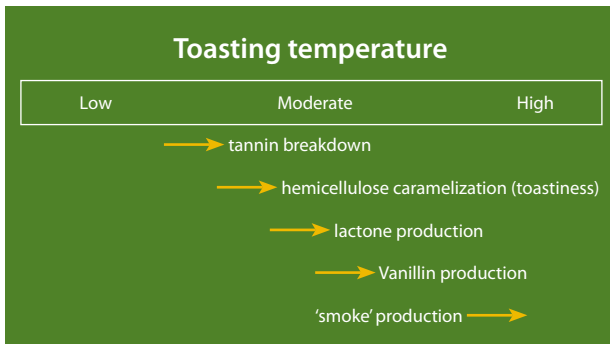


Figure 1: Temperature ranges for formation of oak extractives in barrels toasting. Source: J. Swan, PW, 2004, 1-8

### THE CHALLENGE FOR SPECIALITY BEERS

We all know that the flavour of bottled beer changes with time of storage. Beer ageing is considered to be a major challenge, since the ageing is mostly seen as unpleasant. However this is not the case for some darker speciality beers, which can be turned into a wonderful taste experience. But, the type of flavour evolution during storage or ageing is uncontrollable; making it difficult for master brewers to assure a constant product quality or meet some consumers' expectations regarding flavour. Lots of research money on beer has been devoted to the chemistry of the ageing phenomenon. However most of these studies focus on lager beers, since they represent the largest part of the beer market. Consequently, the ageing

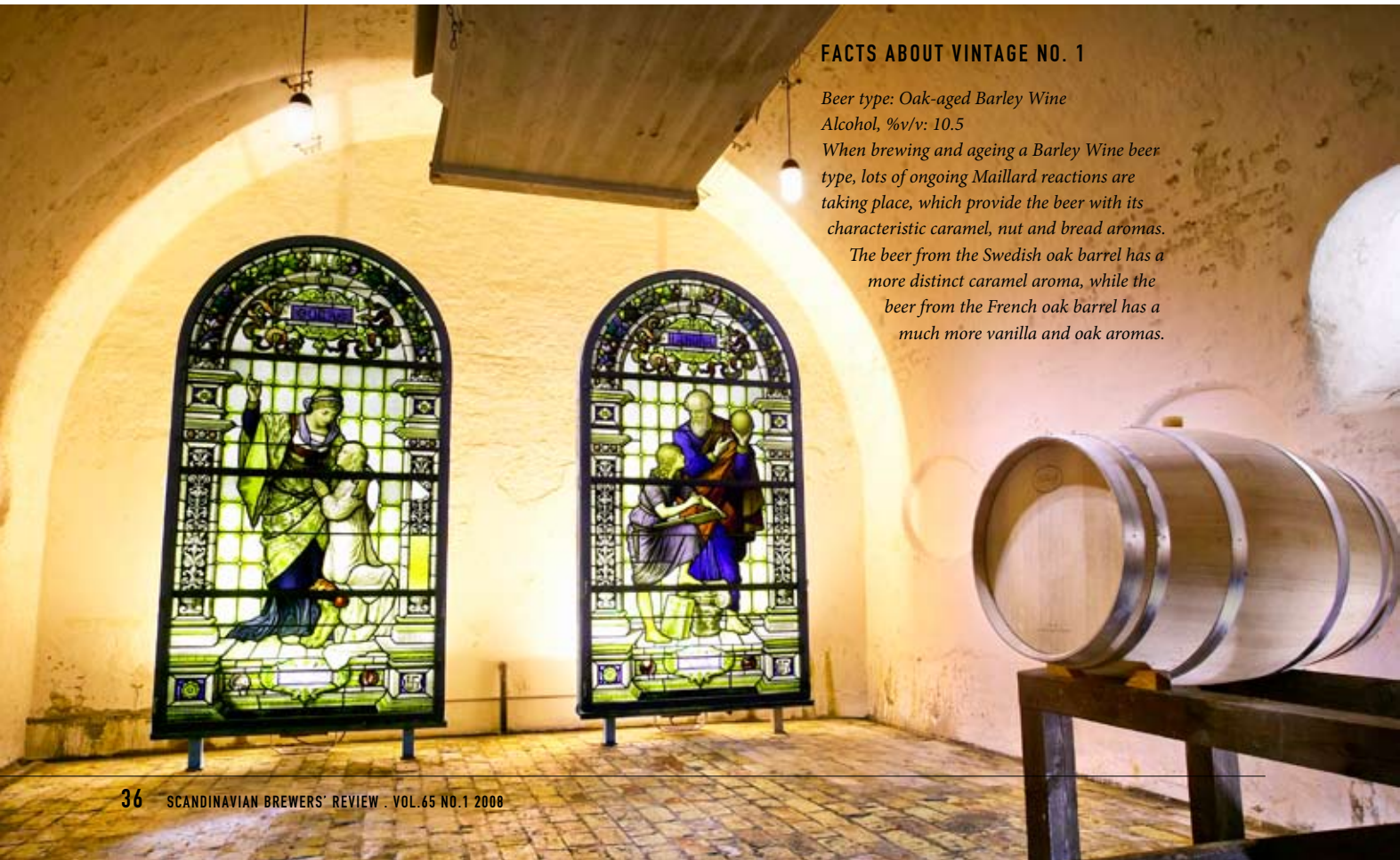
processes in speciality beers are less understood and methods to improve their flavour stability are scarce. In the past, speciality beers were produced by small breweries and restricted to local markets. However, due to the increasing focus on speciality beers and market globalisation, production volumes and export of the speciality beers are rapidly increasing. This has resulted in longer transportation times and variable storage conditions, which demand much more attention to the production of speciality beers with improved flavour stability<sup>1</sup>.

We know from research that ageing compounds are the result of Maillard reaction and Strecker degradations. During ageing, a colour increase is seen as well as a degradation of hop compounds leading to less bitter beers. During ageing, the ethanol content is slowly transformed into acetaldehydes, which react with ketoacids to create sotolon, which has a wine-like aroma. Furfuryl alcohol is also transformed into furfuryl ethyl ether, which has a solvent like flavour.

The challenge for microbrewers and producers of speciality beers is to fully understand the processes taking place during storage! I hope that the taste of Jacobsen Vintage no. 1 can lead to more attention to flavour development in speciality beers! ☺

*Literature:*

1) B. Vanderhaegen et al. / Food Chemistry 103 (2007) 404–412



### FACTS ABOUT VINTAGE NO. 1

*Beer type: Oak-aged Barley Wine  
Alcohol, %v/v: 10.5*

*When brewing and ageing a Barley Wine beer type, lots of ongoing Maillard reactions are taking place, which provide the beer with its characteristic caramel, nut and bread aromas.*

*The beer from the Swedish oak barrel has a more distinct caramel aroma, while the beer from the French oak barrel has a much more vanilla and oak aromas.*