

# All clear?

## Application of plant protein



Milan Rankovic,  
Nectar D.O.O, Serbia



Ralf Hollander,  
Harboes Bryggeri A/S - Danfrugt, Denmark

With approval of plant protein for the stabilisation of fruit juices, industry provides a vegan alternative to gelatine. The advantages and most important differences in use between pea protein and gelatine were explained by Dr. Robert Könitz and his team from the fruit processing department of the German company, Erbslöh Geisenheim AG in the trade journal FLÜSSIGES OBST, ISSUE 10-2014, from page 452.

Global requirements on the beverage and drinks industry are steadily increasing, with the result that topics such as allergenicity and vegan nutrition are gaining in importance. In addition, another factor pushing the drinks industry to develop new processes is the increasing economic significance of new growth markets with special religious requirements on diet and nutrition such as kosher and halal. Replacement of gelatine by a completely vegetable-based raw material is a promising approach. After inclusion of vegetable proteins derived from peas, potatoes and wheat in the list of approved technical auxiliary materials given in EU directive 112/2001/EC, use of these products has been legally regulated since October 2014 and they are approved for use in fruit juices.

We asked five fruit-juice experts which practical experience they have gained using FloraClair®.

**Do you think there is a demand for clarifiers which are acceptable in vegan products?**

**Milan Rankovic:** Yes, there is definitely a demand.

**Ralf Hollander:** Absolutely, especially as the topics of kosher and halal nutrition are mentioned repeatedly.

Then, of course, there is also the question of to what extent auxiliary products and additives of animal origin are allowed in products perceived by non-professional consumers / end users to be vegetable products, without the need for them to be declared.

**Jürgen Schwenk:** Yes, our customers are attaching increasing importance to products which are kosher, halal and vegan. In addition, the number of consumers who consciously speak out against use of animal-based ingredients used in the foodstuff industry has increased in the last few years. Use of FloraClair® satisfies all these requirements. For this reason, from the start of the new season our company has decided to stop using pork gelatine and to convert completely to use of FloraClair®.

**Manfred Werner:** On principle, fruit juice should contain nothing else than the fruit itself. Unfortunately, this is not always technically possible. In order to produce tasty and sta-

ble juices we rely on expert treatment.

Possible use of gelatine as a fining and clarification agent is recognised by customers. We are often asked whether we use gelatine in our products. It is sensible to use a vegetable clarification agent for a vegetable product. We will use FloraClair® to replace gelatine.

**Tomasz Glówka:** Yes, absolutely.

**Do you consider FloraClair® to be an adequate replacement for conventional gelatine?**

**Milan Rankovic:** Yes, FloraClair® is an adequate substitute for classic gelatine.

**Ralf Hollander:** We have had positive results with this product and use it on a commercial scale. In our opinion it is a suitable alternative.

**Jürgen Schwenk:** From a technical process point of view, new approaches are needed when using FloraClair®. After intensive research and development work in our laboratories we have adjusted some phases of the manufacturing process. Our production employees have been given comprehensive training with regard to handling and use of FloraClair® and the new processes.



*Jürgen Schwenk, Rauner Fruchtsäfte - Konzentrate e.K., Germany*



*Manfred Werner, riha WeserGold Getränke GmbH & Co. KG, Germany*



*Tomasz Glówka, O.K Owocowe Koncentraty, Poland – Rauch Group*

**Manfred Werner:** FloraClair® has proven to be a really efficient alternative for treatment of beverages. Plant protein for tannin precipitation is a good approach and I think that it will become well established.

**Tomasz Glówka:** Here at O.K. we have started to use FloraClair® as a fining agent and have completely removed gelatine from the manufacturing process with regard to production of berry juice concentrate.

**Which technological advantages and disadvantages do you see in the use of FloraClair®?**

**Milan Rankovic:** FloraClair® dissolves well and satisfies the requirements of customers who do not want classic gelatine used in fruit processing.

**Ralf Hollander:** From a handling point of view the process is definitely a little unusual but the product can be processed well if it is used properly. The results achieved and specific features are also slightly different compared to those when using classic fining agents but the follow-on processes are identical.

**Jürgen Schwenk:** Consumers cannot tell the difference between these end products and fruit juices treated with gelatine.

Thanks also to the comprehensive support provided by the Erbslöh Company, we can continue to fulfil the great expectations placed on us and our products.

Using FloraClair® we can achieve very stable fruit juices. Turbidity values in thermal cycling tests show a slower increase than when using gelatine as a fining agent and long-term storage trials have given consistently good results.

We were able to overcome initial difficulties with loss of colour by optimising the production process and auxiliary materials used.

When laboratory fining tests are carried out beforehand, the risk of over or underfining is extremely small.

**Manfred Werner:** No technological adaptations are necessary for use of FloraClair® and the same equipment can be used as previously. Dosage is also similar. Only the longer swelling time requires a different work procedure but on the other hand, a longer holding time can be achieved without the solution spoiling.

One significant disadvantage of „vegan fining“ however, is that decanting and separation of the clear phase is not as efficient. Use of modern micro-filters can provide a solution to this problem.

**Tomasz Glówka:** FloraClair® is a fining agent to complement the classical filtration method using bentonite and colloidal silica.

It is especially useful in the production of black currant juice if problems are encountered with filtration of the juice.

We use FloraClair® as a clarification agent in a classic clarification process. This combination helped to speed up production capacity. After sedimentation in a tank, the top juice has a NTU (nephelometric turbidity unit) value of <100 which makes it possible to filter in a one-stage pressure filtration process (diatomaceous earth filter).

Stability in thermal cycling tests has also improved.

No disadvantages were apparent during production of berry juice concentrate but we do not yet know what the influence of this agent will be on the concentrate during storage.