

- **Enzymatic treatment is recommended in case of early harvested grapes and musts/grape juices with a temperature above 15°C.**
- **When a flotation is necessary or wanted in any case, then a device for warming up the must/juice is required.**
- **Gelatin is needed for flotation. Its type and quantity determine success.**
- **The customary products for must/juice treatment can be applied.**
- **The proper quantity of air has to be determined carefully.**
- **Yeast inoculation should be increased to at least approximately 20 g/100 L.**

Grapes which are harvested before full ripeness usually are very rich in pectins. These pectins are decomposed, by the enzyme systems naturally contained in the grapes but this does not happen quickly enough for our purposes. Pectins increase viscosity and therefore impede clarification as well as flotation. Especially susceptible are Silvaner, Riesling, Chasselas and other vine varieties. By adding the enzyme **Trenolin® Flot DF** the degradation of pectins can be accelerated. Here the reactions depend very much on temperature. At 15-20 °C mostly 5-10 ml/100 L **Trenolin® Flot DF** are sufficient to break up the pectin to a large extent within a few hours; at a temperature below 10 °C this process, however, takes such a long time that the application of enzymes is no longer worthwhile.

A temperature above 10 °C is not only necessary for the degradation of pectin but also for the taking effect of the gelatin and thus for the flotation success.

At a temperature below 8–10 °C the gelatin hardly gelatinizes any longer, that means, it does

not form those flakes which entrain the deposits while forced up by the gas.

The gelatin type which has to be used depends to a high degree on the previous mechanical stress the grapes were exposed to. In case of a careful processing and low contents of dissolved phenols, a standard, warm-soluble gelatin of 80–100 Bloom, as for instance **Erbigel®**, is well suited and efficient. If, however, increased phenol contents are present and glucan contents are higher, due to rot, and if, in addition, pectin values are high, then a special high bloom gelatin, i.e. **Erbigel® Flot**, is required. Cold soluble gelatin cannot be recommended, as the quality is not suitable. Liquid gelatin is not flocculating quickly enough for flotation.

The dosage ranges between 5–15 g/100 L. In the upper dosage range deposits already become quite dry and solid; if the dosage is low, then the phase between must/juice and deposit is not so sharply defined, yet the pumpability of the deposits is better. The dosage might even be below 5 g/100 L, if prior enzymatic treatment with **Trenolin® Flot DF** was successful (see above).

The warm-soluble **ErbiGel®**-products should be prepared properly for their application. The measured quantity is dissolved in a five-fold quantity of cold water, and then allowed a rest period of 20 minutes to swell. Only then the same quantity of hot water is added. This solution (1:10) is kept at a constant temperature between 40-50 °C during the continuous dosage.

In case of a clarification in batches in the must/juice tank also the successful **Erbslöh-Mostgelatine** can be applied. After a contact time of 30 minutes flotation has to be started, while approximately 1–2 g/100 L **ErbiGel® Flot** should be continuously added as well. **Erbslöh-Mostgelatine** has the advantage that its contents of casein also binds sharp bitter compounds which cannot always be eliminated with normal gelatin.

When clarifying in the tank please take into consideration that a vigorous and long stirring as well as unsuited must/juice pumps are breaking up the great flakes of the gelatin too much. Then only a too small number of gas bubbles can cling to the flakes and, as a result, the deposits remain unsettled.

The activated carbon **Granucol® GE**, the must/juice bentonite **Seporit PORE-TEC** and the adsorptive mixed product **MostRein® eisenarm** are suited for flotation as well. Either the desired quantities of these products are stirred per batch into the collected must/juice or they are added with a second dosage pump into that part of the flotation plant which is under pressure.

MostRein® eisenarm is effective by its high adsorption capacity with regard to pesticide residues, further contamination and, above all, also wild micro-organisms. Products containing bentonite solidify the cake of deposits during flotation. When the cake shall remain pumpable, then the usual dosage of **Seporit PORE-TEC** or **MostRein® eisenarm** has to be reduced by half, that means, only 50% of the usual 100-150 g/100 L should be added.

Usually for impregnation purified air is used, in special cases nitrogen. According to experience a pressure of 5 bar is the lower limit; above 6 bar no further advantages arise.

The proper regulation of the quantity of air has to be determined empirically and depends on the phenol content of the must/juice as well as on the type of the employed device. Too much air results in a too strong foaming up of the deposits and in losses of up to 10% of sugar-free extract in the finished wine. Too little air impedes the separation of the phases.

Partly fermented musts/juices which already release CO₂ cannot be flotated. Also in case of a strong infection of the grapes with botrytis and in case of very high sugar contents of the must/juice there are limitations; the same applies to too low temperatures.

In spite of the strong reduction of deposits mostly there are in flotated musts/juices increased numbers of wild micro-organisms. Obviously they propagate well by means of the added oxygen. That is why a quick inoculation of at least 20 g/100 L of one of the yeasts of the **Oenoferm®**-family is recommended.

Consultation is the beginning, your success is our aim!

ERBSLÖH Geisenheim AG • Erbslöhstraße 1 • D-65366 Geisenheim • Tel: +49 6722/708-0 •

Fax: +49 6722/6098 • info@erbsloeh.com • www.erbsloeh.com

Our technical product leaflets and the treatment recommendations they contain, are based on our current knowledge and experience and we make all reasonable efforts to ensure the accuracy of the information it provides. But since pre-treatment is mostly unknown to us and moreover imponderabilities with regard to the natural products to treat have to be taken into consideration, the advice given provides general information and serves for your consultation. Without a separate, written statement from our side on a defined matter or problem, the information provided should not be relied upon as legal advice or regarded as a substitute for legal advice and is without liability. The information provided is in accordance with the law in force of the Federal Republic of Germany and the EU. In addition, our general terms of business apply. Edition 11/05 – Flotation_technology.doc - printed on 01.02.2006