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The use of a naturally-occurring food-grade proline-specific protease can eliminate sub-zero chemical stabilization processing

Rationale

Recent work at a Brewing Institute at 20 HI scale has shown that post-fermentation temperatures only need to be reduced to +7°C and residence times could be cut by 50% or

even eliminated completely.

This promises to have a major impact on brewing techniques in the next decades.

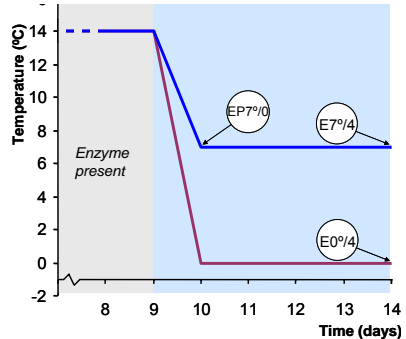
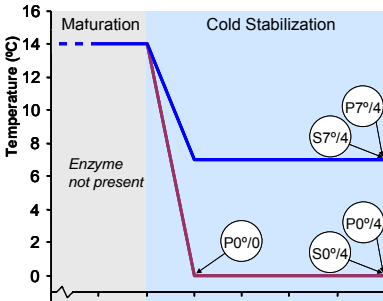
Benefits

This new proven functionality will be welcomed by the many current users of

Brewers Clarex

who already enjoy cost effective, efficient stabilization, environmental friendly system, easier handling, improved oxygen control and much savings against the traditional chemical powders which demand long, sub-zero residence times to have any effect on shelf-life.

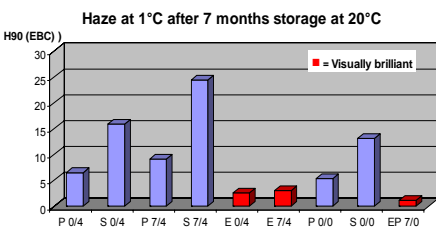
Experimental



Batch Code →	P0°/4	S0°/4	P7°/4	S7°/4	E0°/4	E7°/4	P0°/0	S0°/0	EP7°/0
Days at 0°C	4	4			4		0*	0*	
Days at 7°C			4	4		4			0*
Brewers Clarex (g/HI)					2.5	2.5			2.5
PVPP (g/HI)	30		30				30		30
Silica (g/HI)		40		40				40	

*: cooling only to desired temperature

Results



Conclusion

The use of a Proline-Specific Protease as sole stabilizer added at the beginning of fermentation, makes the requirement for the long, sub-zero 'stabilization' step redundant

Savings

This naturally-occurring food-grade enzyme can significantly reduce energy costs and processing times whilst greatly increasing flexibility during down-stream processing.

Initial brewery capacity	1,000,000 HI
Energy savings due to shorter cold stabilization time	24,791 €/annum
Energy savings due to higher cold stabilization temperature	74,667 €/annum
TOTAL ENERGY SAVINGS	99,458 €/annum
POSSIBLE CAPACITY INCREASE	1,000,000 HI/annum