

8D PROBLEM SOLVING D4-ADDITIONAL DATA

Results from tests performed in Step D2 and D3

TEST	RESULT	DECISION
Test of recipe change	Change of recipe in production line L4 did not result in any bad smell	Problem related to IPA beer only.
Test a current recipe in two different production lines	Results from Test in Line L3; No	Problem related to production in Line L4 only
Test of temperature change after EOL test to simulate change of smell and taste. Possible acceleration test	No results achieved.	Continue Test and wait for further analysis
Test change of cycle time in the prototype process (smaller quantity)	Test of shorter cycle time in cooling process indicates a minor growth of bacteria for products/recopies using Hob type Y	Continue testing and perform DoE for combinational factors

Summary Results from Internal Audit in Line L4 (March)

Process Step	Deviation	Scoring (VDA 6.3)
Crushing	Analysis Certificate not found for Hop IP4 batch 230111	8p
Cooling	Preventive maintenance has not been performed according to plan. No operator maintenance instruction for daily/weekly maintenance.	4p
Cooling	The project handover to series production for new cooling system could not be found. No evidence of performance test found.	4p
Cooling	The employees' responsibilities, duties and authorities are not described and implemented	6p
Cooling	Temperature sensor equipment not calibrated.	4p
Fermentation	Operator instruction for order and cleanliness not in working station	4p
Fermentation	The employees' responsibilities, duties and authorities are not described and implemented.	6p
Fermentation	Preventive maintenance has not been performed according to plan.	6p
Bottling	Operator instruction for order and cleanliness not in working station	4p

TRAINING EXERCISE

Is/Is-Not-Differences and changes

OB	Is/Is-Not Template					
	Is	Is Not	Whats the difERENCE	Whats changed	Potentially changes	Test Causes
What	Which products/problems are affected?	Exist similar product/process, which the problem not occurred?	Production of IPA is performed differently through further brewing stages compare to other beer products. The	The production process has not changed	Possible raw material problem or contamination of a later process step significant for IPA production	Test of changing the recepie
	India Pale Ale (IPA)	Lager Beer, American Pale Ale				
	What kind of deviation is it?	Expecting furthermore deviations for this affected product/process?	Should normally have a smell of citrus and baked bread	Change of smell	Potential sickness from people drinking	Smell and taste taste of various consumers in current market
	Smells like wet fur	Health problems. Colour change				
Why	Where was the product/process at the first deviation occurred?	Where else could occur the deviation too?	No difference	No change observed	No potential change	Smell and taste taste of various consumers in current market
	Germany	Northern European countries				
	At which part of the product occurred the deviation?	What's the name of the neighboring product/process and which of them are not affected by the deviation?	No difference. Production Line 1 AND 2 are the same	No change observed	Changes in brewing process in one of the two process lines would cause	Test a current recepie in both production lines
	Final stage (at consumer)	Production from production line 2				
When	When did the deviation occur for the first time? (Date of occurrence & lifecycle)	Could the problem have been occurred in an earlier phase/milestone?	Time difference between EOL test/sampling and consumption by final customer	No change observed	Potential change of temperature during transport and storage may casue different appearance	Test of temperature change after EOL test to simulate change of smell and taste. Possible acceleration test
	October 25, 2023	Yes possibly at EOL Test and capsulation process stage				
	Is a systematic occurence of deviation detected? (single failure, constantly grow/sink, random or cyclical)?	Could be more failures expected since detection?	No difference observed	No change observed	Potential increase of failures in a rapid number and speed if the problem is large	See above test causes
	Single failure so far	Yes, further failures may occur depending on storage time.				

TRAINING EXERCISE

Is/Is-Not-Differences and changes

OB	Is/Is-Not Template					
	Is	Is Not	Whats the difERENCE	Whats changed	Potentially changes	Test Causes
How Much	Whats the number of failures? (Number & PPM') 3 incidents	How many might expected in future? 100 000 ltrs	Normally this type of error would be detected in three months, in which period 100 ltrs has been sold	Increase of production volume since last production batch	Potential change in volume has decreased the cycle time, which may have affected processing of the grain	Test change of cycle time in the prototype process (smaller quantity)
	Which persons are affected? Which costs have occurred so far? Are they going to increase, decrease or will they remain stable?	What could bring more worst/better facts?	No difference observed	No change observed at this point.	Potential changes would be that a limited quantity of consumers are affected.	Until further facts are given no additional tests are appropriate.
	End customers and consumers are affected. Estimated volume is 100 000 ltrs which has been exported in the last three months	Facts that would improve the analysis is further consumer tests taken from supermarkets and distributors. Worst case would be that a whole production quantity is affected. Better facts would be that the problem is related to a minority of consumers.				

TRAINING EXERCISE