

LALLEMAND SOUR SOLUTIONS STRAIN COMPARISON



Strain selection for sour beer production is a growing challenge as brewers are faced with a greater variety of strains than ever before.

Lactic acid bacteria can be used for kettle and fermenter souring practices to provide depth of flavor along with mild to high levels of acidity depending on the strain. Both **WildBrew Sour Pitch™** and **WildBrew Helveticus Pitch™** offer consistent and reliable bacteria options for brewers looking to produce citrusy sour beers. **WildBrew Sour Pitch™** (*Lactobacillus plantarum*) ferments at mildly warm temperatures and produces a medium level of lactic acid with hints of grapefruit. By comparison, **WildBrew Helveticus Pitch™** (*Lactobacillus helveticus*) ferments at higher temperatures and produces higher levels of lactic acid with a lemony/sour candy flavor.

Lactic acid producing yeast is relatively uncommon for brewing applications; however, in recent years they have started to gain more attention. The yeast of the genus *Lachancea* produce lactic acid as well as ethanol and CO₂ in fermentation. The **WildBrew Philly Sour™** strain is a unique *Lachancea* species that was selected from nature by the University of the Sciences in Philadelphia, USA. It produces a mild level of lactic acid and ethanol in one simple fermentation step with flavors of apricot and stone fruit.

BEST PRACTICES LALLEMAND SOUR SOLUTIONS STRAIN COMPARISON

Sour beer styles range in seemingly unlimited flavors from fruity and neutrally acidic, to bitter or sweet. The brewer should choose bacteria and yeast strains carefully in order to achieve the desired flavor profile. This chart serves as a guide to illustrate selected bacteria and yeast combinations for sour beers styles, including common combinations that have been validated extensively in commercial trials, as well as some more unique strain combinations. This is not a comprehensive list, many other combinations are possible for the creative and adventurous brewer.

STYLE	SOURING	+ SECONDARY	NOTES	STYLE	SOURING	+ SECONDARY	NOTES	STYLE	SOURING	+ SECONDARY	NOTES	STYLE	SOURING	+ SECONDARY	NOTES				
GOSE			Clean palate with some citrus notes.	SOUR IPA			Clean IPA profile with moderate fruit	NORDIC SOUR			Tropical, grapefruit and orange aroma	FRUITED SOUR*			Clean palate with some citrus notes				
			Notes of sour candy and lemon				Tropical and citrus fruit notes				Green apple, lemon and sour candy				Banana and tropical flavors (pineapple, citrus)				
		No co-pitch	Apricot, lemon pith, lightly grassy, apple				Prominent stone fruit aromas				Soft acidity with stone fruit and orange				Medium bodied with red apple and a maple-like character				
BERLINER WEISSE			Slight banana and clove					Moderate fruit and lemon pith					Dry with notes of clove, pepper and grapefruit			Notes of sour candy and lemon			
			Fruit and spice aromas with a dry finish					Lemon candy notes with some fruit and body							Moderate clove and pepper, citrus flavors		Slight banana with lemon verbana flavor		
			Prominent stone fruit aromas					Lemon candy notes with some fruit and body							Moderate clove and pepper, citrus flavors		Medium body with tropical fruit, papaya and guava		
			Slight apple and tropical notes						Apricot, lemon pith, lightly grassy, apple					Notes of clove, pepper, anise, lemon			No co-pitch	Apricot, lemon pith, lightly grassy, apple	
			Slight clove and pepper																
		No co-pitch	Clean palate with some citrus notes		Slightly more citrus notes than a pure Philly Sour fermentation				Prominent stone fruit aromas										Pepper and clove with tropical and stone fruit aromas
	No co-pitch	Apricot, lemon pith, lightly grassy, apple	Prominent stone fruit aromas					Prominent stone fruit aromas								Hay, apricot, apple blossom flavors			

* Fruited sours are broadly dependant on the type and quantity of fruit used. The flavor notes are for the base beer prior to fruit additions.

CHOOSE YOUR SOURING STRAIN	WILDBREW SOUR PITCH		WILDBREW HELVETICUS PITCH		WILDBREW PHILLY SOUR
	LACTIC ACID BACTERIA		LACTIC ACID BACTERIA		LACTIC ACID PRODUCING YEAST
CLASSIFICATION	Facultative Heterofermentative Bacteria (Produces lactic acid and may produce small amounts of ethanol, CO2 and other organic compounds)		Obligate Homofermentative Bacteria (Produces only lactic acid)		Non-Saccharomyces lactic acid producing yeast
SPECIES	<i>Lactiplantibacillus plantarum</i>		<i>Lactobacillus helveticus</i>		<i>Lachancea spp.</i>
FERMENTATION TYPE	KETTLE SOUR	FERMENTER SOUR /CO-PITCH	KETTLE SOUR	FERMENTER SOUR /CO-PITCH	FERMENTATION (NO PRE-SOURING REQUIRED)
CROSS CONTAMINATION RISK	- Bacteria killed during boil	- Live bacteria in fermenter - Separate packaging line and soft parts recommended	- Bacteria killed during boil	- Live bacteria in fermenter - Separate packaging line and soft parts recommended	- Slow growing, outcompeted by other brewing strains - Low viability in acidic environment - Killer negative - Sensitive to normal brewery CIP
TEMPERATURE RANGE	30-40°C (86-104°F)		38-45°C (100-113°F)		20-30°C (68-86°F)
FERMENTATION TIME	24-48 hrs for acid production		24-48 hrs for acid production		10 days
PH RANGE	3.2-3.5		3.0-3.5		3.2-3.5
LACTIC ACID RANGE	0.5-0.8%		0.6-1.2%		0.1-0.4%
HOP TOLERANCE	Alpha acid: 4 ppm (IBU) Beta acid: 8 ppm		Alpha acid: 4 ppm (IBU) Beta acid: 4 ppm		hop tolerant
FLAVOR & AROMA	<p>Citrus, tangy, sour</p>		<p>Strong Citrus, lemon, sour candy</p>		<p>Apricot, lemon pith, lightly grassy, apple</p>

Whether performing a kettle sour with bacteria or souring in the fermenter using lactic acid producing yeast, the choice of souring strain has important implications for fermentation performance and the flavor and character of the beer. Bacteria fermentations require a secondary yeast strain to complete the alcoholic fermentation, whereas lactic acid producing yeast perform both functions (but can be co-pitched with other yeast to achieve desired results).

A few tips from our team: Choose **WildBrew Sour Pitch™** and **WildBrew Philly Sour™** for sessionable sours, or **WildBrew Helveticus Pitch™** for a more prominent lactic acid flavor. Hop tolerant lactic acid yeast are resistant to kettle hop additions and high IBUs, whereas the bacteria strains are highly sensitive to kettle hops as well as dry hopping. Whatever sour beer style you are brewing, there is a sour bacteria or yeast strain for you!

CONTACT US

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