

# 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 CO<sub>2</sub> 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.

**Mascoma Sourvisiae™** is a genetically engineered strain of *Saccharomyces* that produces a large amount of lactic acid and ethanol in beers up to 12% ABV. It is a highly neutral strain and provides an excellent base for fruit, hops, or other additions. This strain is currently only available in the U.S.

# 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	WILDBREW SOUR PITCH	PREMIUM NOTTINGHAM HIGH PERFORMANCE ALE YEAST	Clean palate with some citrus notes.	SOUR IPA	WILDBREW SOUR PITCH	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Clean IPA profile with moderate fruit	NORDIC IPA	WILDBREW SOUR PITCH	PREMIUM VOSS KVEIK ALE YEAST	Tropical, grapefruit and orange aroma	FRUITED SOUR*	WILDBREW SOUR PITCH	PREMIUM NOTTINGHAM HIGH PERFORMANCE ALE YEAST	Clean palate with some citrus notes	
	WILDBREW HELVETICUS PITCH	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Notes of sour candy and lemon			WILDBREW SOUR PITCH	PREMIUM VOSS KVEIK ALE YEAST		Tropical and citrus fruit notes	WILDBREW HELVETICUS PITCH	PREMIUM VOSS KVEIK ALE YEAST		Green apple, lemon and sour candy	WILDBREW SOUR PITCH	PREMIUM MUNICH CLASSIC WHEAT ALE YEAST	Banana and tropical flavors (pineapple, citrus)
	WILDBREW PHILLY SOUR	No co-pitch	Apricot, lemon pith, lightly grassy, apple			WILDBREW PHILLY SOUR	PREMIUM VERDANT IPA ALE YEAST		Prominant stone fruit aromas	WILDBREW PHILLY SOUR	PREMIUM VOSS KVEIK ALE YEAST		Soft acidity with stone fruit and orange	WILDBREW PHILLY SOUR	PREMIUM LONDON ENGLISH-STYLE ALE YEAST	Medium bodied with red apple and a maple-like character
	WILDBREW SOURVISIAE	No co-pitch	Clean, neutral, extremely sour			WILDBREW SOURVISIAE	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST		Moderate fruit and lemon pith	WILDBREW SOURVISIAE	PREMIUM VOSS KVEIK ALE YEAST		Neutral with slight orange notes	WILDBREW SOURVISIAE	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Notes of sour candy and lemon
BERLINER WEISSE	WILDBREW SOUR PITCH	PREMIUM WIT BELGIAN WIT-STYLE ALE YEAST	Slight banana and clove		WILDBREW HELVETICUS PITCH	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Lemon candy notes with some fruit and body	SOUR SAISON	WILDBREW SOUR PITCH	PREMIUM BELLE SAISON SAISON-STYLE ALE YEAST	Dry with notes of clove, pepper and grapefruit		WILDBREW HELVETICUS PITCH	PREMIUM WIT BELGIAN WIT-STYLE ALE YEAST	Slight banana with lemon verbana flavor	
	WILDBREW SOUR PITCH	PREMIUM BELLE SAISON SAISON-STYLE ALE YEAST	Fruit and spice aromas with a dry finish		WILDBREW PHILLY SOUR	PREMIUM VERDANT IPA ALE YEAST	Lemon candy notes with some fruit and body		WILDBREW SOUR PITCH	PREMIUM FARMHOUSE HYBRID SAISON-STYLE YEAST	Moderate clove and pepper, citrus flavors		WILDBREW HELVETICUS PITCH	PREMIUM WINDSOR BRITISH-STYLE ALE YEAST	Medium body with tropical fruit, papaya and guava	
	WILDBREW SOUR PITCH	PREMIUM VERDANT IPA ALE YEAST	Prominant stone fruit aromas		WILDBREW PHILLY SOUR	No co-pitch	Apricot, lemon pith, lightly grassy, apple		WILDBREW PHILLY SOUR	PREMIUM BELLE SAISON SAISON-STYLE ALE YEAST	Dry with notes of clove, spice, and grapefruit		WILDBREW PHILLY SOUR	PREMIUM KÖLN KÖLSCH STYLE ALE YEAST	Apricot, lemon pith, lightly grassy, apple	
	WILDBREW SOUR PITCH	PREMIUM KÖLN KÖLSCH STYLE ALE YEAST	Slight apple and tropical notes		WILDBREW PHILLY SOUR	Slightly more citrus notes than a pure Philly Sour fermentation	Slightly more citrus notes than a pure Philly Sour fermentation		WILDBREW PHILLY SOUR	PREMIUM FARMHOUSE HYBRID SAISON-STYLE YEAST	Notes of clove, pepper, anise, lemon		WILDBREW PHILLY SOUR	PREMIUM KÖLN KÖLSCH STYLE ALE YEAST	Hay, apricot, apple blossom flavors	
	WILDBREW HELVETICUS PITCH	PREMIUM FARMHOUSE HYBRID SAISON-STYLE YEAST	Slight clove and pepper		WILDBREW PHILLY SOUR	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Prominant stone fruit aromas		WILDBREW PHILLY SOUR	No co-pitch	Apricot, lemon pith, lightly grassy, apple		WILDBREW PHILLY SOUR	PREMIUM KÖLN KÖLSCH STYLE ALE YEAST	Hay, apricot, apple blossom flavors	
	WILDBREW HELVETICUS PITCH	PREMIUM FARMHOUSE HYBRID SAISON-STYLE YEAST	Slight clove and pepper		WILDBREW PHILLY SOUR	PREMIUM VERDANT IPA ALE YEAST	Prominant stone fruit aromas		WILDBREW PHILLY SOUR	No co-pitch	Apricot, lemon pith, lightly grassy, apple		WILDBREW PHILLY SOUR	PREMIUM KÖLN KÖLSCH STYLE ALE YEAST	Hay, apricot, apple blossom flavors	
	WILDBREW SOURVISIAE	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Clean palate with some citrus notes		WILDBREW SOURVISIAE	No co-pitch	Clean, neutral, extremely sour		WILDBREW PHILLY SOUR	PREMIUM WIT BELGIAN WIT-STYLE ALE YEAST	Stone fruit flavors with limited spice and notes of hay		WILDBREW SOURVISIAE	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Clean, neutral, extremely sour	
	WILDBREW PHILLY SOUR	No co-pitch	Apricot, lemon pith, lightly grassy, apple		WILDBREW SOURVISIAE	PREMIUM VERDANT IPA ALE YEAST	Slight tropical fruit and apricot		WILDBREW PHILLY SOUR	PREMIUM BELLE SAISON SAISON-STYLE ALE YEAST	Spice, moderate stone fruit flavors and a dry finish		WILDBREW SOURVISIAE	PREMIUM MUNICH CLASSIC WHEAT ALE YEAST	High acidity with clove and banana	
WILDBREW SOURVISIAE	No co-pitch	Clean, neutral, extremely sour	WILDBREW SOURVISIAE	PREMIUM VERDANT IPA ALE YEAST	Slight tropical fruit and apricot	WILDBREW SOURVISIAE	PREMIUM FARMHOUSE HYBRID SAISON-STYLE YEAST	Pepper and clove with tropical and stone fruit aromas	WILDBREW SOURVISIAE	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Clean, neutral, extremely sour					
WILDBREW SOURVISIAE	No co-pitch	Clean, neutral, extremely sour	WILDBREW SOURVISIAE	PREMIUM VERDANT IPA ALE YEAST	Slight tropical fruit and apricot	WILDBREW SOURVISIAE	PREMIUM BELLE SAISON SAISON-STYLE ALE YEAST	Clove, pepper and hay with a dry finish	WILDBREW SOURVISIAE	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Clean, neutral, extremely sour					
WILDBREW SOURVISIAE	No co-pitch	Clean, neutral, extremely sour	WILDBREW SOURVISIAE	PREMIUM VERDANT IPA ALE YEAST	Slight tropical fruit and apricot	WILDBREW SOURVISIAE	PREMIUM FARMHOUSE HYBRID SAISON-STYLE YEAST	Clove, pepper and tropical fruits	WILDBREW SOURVISIAE	PREMIUM BRY-97 AMERICAN WEST COAST ALE YEAST	Clean, neutral, extremely sour					

\* 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



LACTIC ACID BACTERIA



LACTIC ACID PRODUCING YEAST



CLASSIFICATION

Facultative Heterofermentative Bacteria (Produces lactic acid and may produce small amounts of ethanol, CO<sub>2</sub> and other organic compounds)

Obligate Homofermentative Bacteria (Produces only lactic acid)

Non-Saccharomyces lactic acid producing yeast

Genetically Engineered Yeast

SPECIES

*Lactobacillus plantarum*

*Lactobacillus helveticus*

*Lachancea spp.*

*Saccharomyces cerevisiae*

PREFERRED USAGE METHOD

Kettle Sour

Kettle Sour

Fermentation no pre-souring required

Fermentation no pre-souring required

TEMPERATURE RANGE

30-40°C (86-104°F)

38-45°C (100-113°F)

20-30°C (68-86°F)

10-22°C (50-72°F)

FERMENTATION TIME

24-48 hrs for acid production

24-48 hrs for acid production

5-10 days

4-7 days

PH RANGE

3.2-3.5

3.0-3.5

3.2-3.5

3.0-3.4

LACTIC ACID RANGE

0.5-0.8%

0.6-1.2%

0.1-0.4%

0.8-1.5%

HOP TOLERANCE

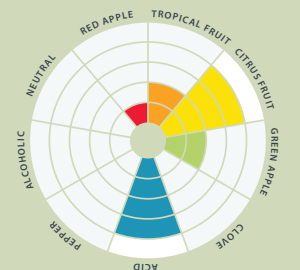
4ppm alpha acid, 4ppm beta acid

4ppm iso-alpha acid, 4ppm beta acid

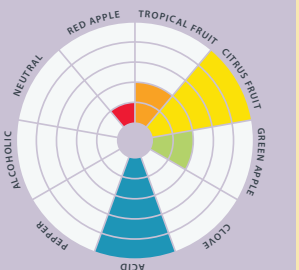
hop tolerant

hop tolerant

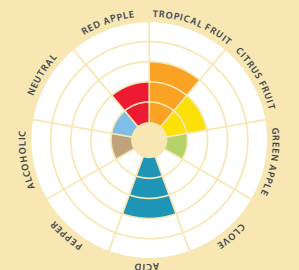
FLAVOR & AROMA



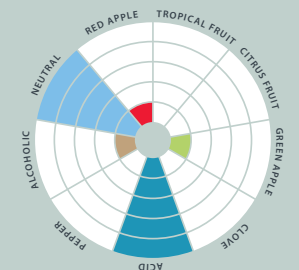
Citrus, tangy, sour



Strong Citrus, lemon, sour candy



Apricot, lemon pith, lightly grassy, apple



Clean, neutral, extremely sour

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™** and **Mascoma Sourvisiae™** 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

For more information, please visit us online at [www.lallemandbrewing.com](http://www.lallemandbrewing.com)

For any questions, you can also reach us via email at [brewing@lallemand.com](mailto:brewing@lallemand.com)

