

LALLEMAND WINE BACTERIA

KEY SELECTION CRITERIA FOR 1-STEP[®], MBR[®] AND STANDARD BACTERIA

| ENVIRONMENTAL LIMITS | MBR process direct inoculation | | 1-STEP [®] MALOLACTIC FERMENTATION UNDER CONTROL | | MBR process direct inoculation | | Co-inoculation ONLY | | Standard - build up culture |
|------------------------------|--------------------------------|------------------------|---|------------------------|--------------------------------|--|--------------------------------|------------------------|-----------------------------|
| | ALPHA [™] | OMEGA [™] | PN4 [™] | VP41 [™] | AWRI YV Select [™] | Anchor DUET AROM [™] | ML PRIME [™] | INOBACTER [™] | |
| | <i>Oenococcus oeni</i> | <i>Oenococcus oeni</i> | <i>Oenococcus oeni</i> | <i>Oenococcus oeni</i> | <i>Oenococcus oeni</i> | <i>Oenococcus oeni</i> <i>Lactobacillus plantarum</i> | <i>Lactobacillus plantarum</i> | <i>Oenococcus oeni</i> | |
| ALCOHOL (% V/V) | ≤ 15.5 | 16-17 | ≤ 15.5 | near 16.5 | < 16 | 15 | 10 | 14 | |
| pH | > 3.2 | > 3.1 | > 3.1 | > 3.1 | > 3.2 | > 3.2 | > 3.4 | > 2.9 | |
| TOTAL SO ₂ (mg/L) | < 50 | < 60 | < 60 | < 60 | < 50 | < 60 | Maximum 50ppm at crush | <50 | |
| TEMPERATURE (°C) | > 14 | > 14 | > 16 | > 16 | > 14 | > 14 | 20-26 | > 15 | |
| NUTRIENT DEMAND | LOW | LOW | MEDIUM | LOW | MEDIUM | NA | NA | MEDIUM | |
| IMPACT ON FRUITINESS | +++ | ++++ | + | ++++ | + | +++ | ++++ | +++ | |
| DIACETYL PRODUCTION | ALPHA [™] | OMEGA [™] | PN4 [™] | VP41 [™] | AWRI YV Select [™] | DUET AROM [™] | ML PRIME [™] | INOBACTER [™] | |
| CO-INOCULATION | LOW | LOW | MODERATE TO HIGH | LOW | LOW | LOW | LOW | LOW | |
| SEQUENTIAL INOCULATION | MODERATE | LOW | MODERATE TO HIGH | LOW | LOW | NA | NA | VERY LOW | |

IMPORTANT NOTE REGARDING ENVIRONMENTAL LIMITS: This table lists the individual limits for alcohol, temperature, pH and SO₂ for each of the Lallemand malolactic bacterial strains. However it does not detail the numerous inter-relationships existing between these parameters. The 'additive inhibitory effects' of multiple limiting conditions such as high temperature with high alcohol, or low pH with high SO₂ must NOT be ignored. For example, Lalvin VP41 has been shown to conduct MLF at 17.3% v/v alcohol, although under such harsh conditions other parameters should not be inhibitory. Further advice available from Winequip staff.