

T O N G

— ABOUT WINE —

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CHILE

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MUCH MORE
THAN SIMPLY
RELIABLE

— JÜRGEN MATHÄSS, GERMANY —

WITH ITS ENVIABLE CLIMATE, CHALLENGING GEOGRAPHY AND THE DETERMINATION OF ITS WINEGROWERS, CHILE HAS BEEN GOING FROM STRENGTH TO STRENGTH. THE COUNTRY'S CULTIVATION STATISTICS SAY IT ALL. IN 1993, THE GRAPE-GROWING AREA (EXCLUDING TABLE GRAPES) COVERED 53,000 HA; NOW 118,000 HA ARE OCCUPIED BY VINEYARDS.

JÜRGEN MATHÄSS IS GERMANY'S LEADING EXPERT ON CHILEAN WINE. HE VISITS CHILE REGULARLY TO WRITE ABOUT THE COUNTRY'S PRODUCTION, AND TEACHES AT SOMMELIER SCHOOLS ACROSS GERMANY

Although local consumption hasn't shifted, Chilean wines have had no problem finding markets abroad. Chile is an export country and a worldwide synonym for reliable, harmonious and extremely fruit-forward red wines at competitive prices. And yet Chilean winegrowers are increasingly frustrated with this general perception, which they feel no longer reflects reality. Stylistic diversity has greatly increased, and so has the offer of world-class wines. The spread of growing areas into premium hill-sides and cool climate regions has contributed to this change, as well as the ambition and drive of enologists and bodegas (wine cellars) to exploit the potentials of soil and climate.

An apparently endless coast, blue lakes, high volcanoes, immense glaciers, large forests and desert areas – Chile's scenery is staggering from the High Andes in the east to the Pacific in the west. The country's borders are in fact natural borders that have sculpted this long thin country. Its neighbours regard Chile with a mix of esteem, envy and resignation; the country's institutions are stable, its economy efficient and the success of its exports remarkable. Peruvians and Argentineans would like to be

as single-minded and focused as the Chileans.

Chile first conquered the international wine market in the 1990s with recognisably-styled varietal wines – reliable, technically brilliant and inexpensive. Comparative tastings showed that Chilean wines were consistent and reliable when compared to supermarket Cabernets worldwide in the same price range.

After the earthquake in March this year that killed more than 400 people and destroyed half a million homes, the Chileans demonstrated their much-vaunted discipline and determination. In a sideline to the human disasters, some 125 million litres of wine were also destroyed, but the bodegas quickly cleaned up the mess and a good harvest was brought in two weeks after the quake.

But every medal has its reverse. Argentineans joke about the hard-working, self-disciplined Chileans – they say their fiestas are over when the fun is about to begin. The jibe could also apply to their winemaking. Chilean winemakers complain increasingly of being labelled “good value, reliable and boring”. The country's best wines are not widely known internationally – although compared to European reds,

they share the same quality at considerably cheaper prices. Chilean wine expert Eduardo Chadwick has been demonstrating this for years in blind tastings around the globe.

Is it prejudice or fact when people argue that because of their straightforward and harmonious fruity character Chilean wines lack spirit, a sense of risk and daring flavours? If this is the case, are the soil or climate to blame or the winegrowers' lack of initiative and daring? A few years ago, the Chilean government created a special commission to develop an international quality image with a strong identity.

Area: 756,950 km²

Inhabitants: 16.8 million

Population density: 22.1 inhabitants per km²

Gross Domestic Product: some 14,000 US\$ per capita

Currency: Chilean peso (CLP) (1 Euro = 650 CLP)

Independent since 12 February 1818

TOTAL EXPORTS

Year	million hl
1982	0.01
1990	0.43
1995	1.29
2000	2.67
2005	4.18
2006	4.74
2007	6.10
2008	5.89
2009	6.91

STARTING POINT: THE ANDES AND THE OCEAN MAKE FOR A DIVERSE CLIMATE

This oddly shaped country deserves its reputation as a “vicultural paradise”, and several top French wineries have wisely invested here; the Andes in the east and the cold Pacific ocean in the west influence every vineyard on this 4,000-km-long and 200-km-wide strip of land. Chile and Argentina also have vineyards running thousands of kilometres along the Andes, but thanks to the ocean Chile has more humidity and a balanced Mediterranean climate in the 50-800 metre altitude range. Argentina in contrast has a rough desert climate with extremes in temperature in the 600-2,000 metre altitude range.

In Chile, the vineyards are in the centre of the country, some 1,000 km north and south of the capital Santiago. The more traditional regions are South of Santiago, with the coastal mountains forming a dividing wall between the Andes and the Pacific. Running from north

to south, they split this small country into two narrow strips – the coastal region and the central valley. These strips basically make up the three most important climate zones in Chilean winegrowing: the warm central valley, the cool strip at the foot of the Andes and the cool coastal regions like Casablanca, San Antonio, Leyda or Limarí, along with the coastal zones in the traditional valleys.

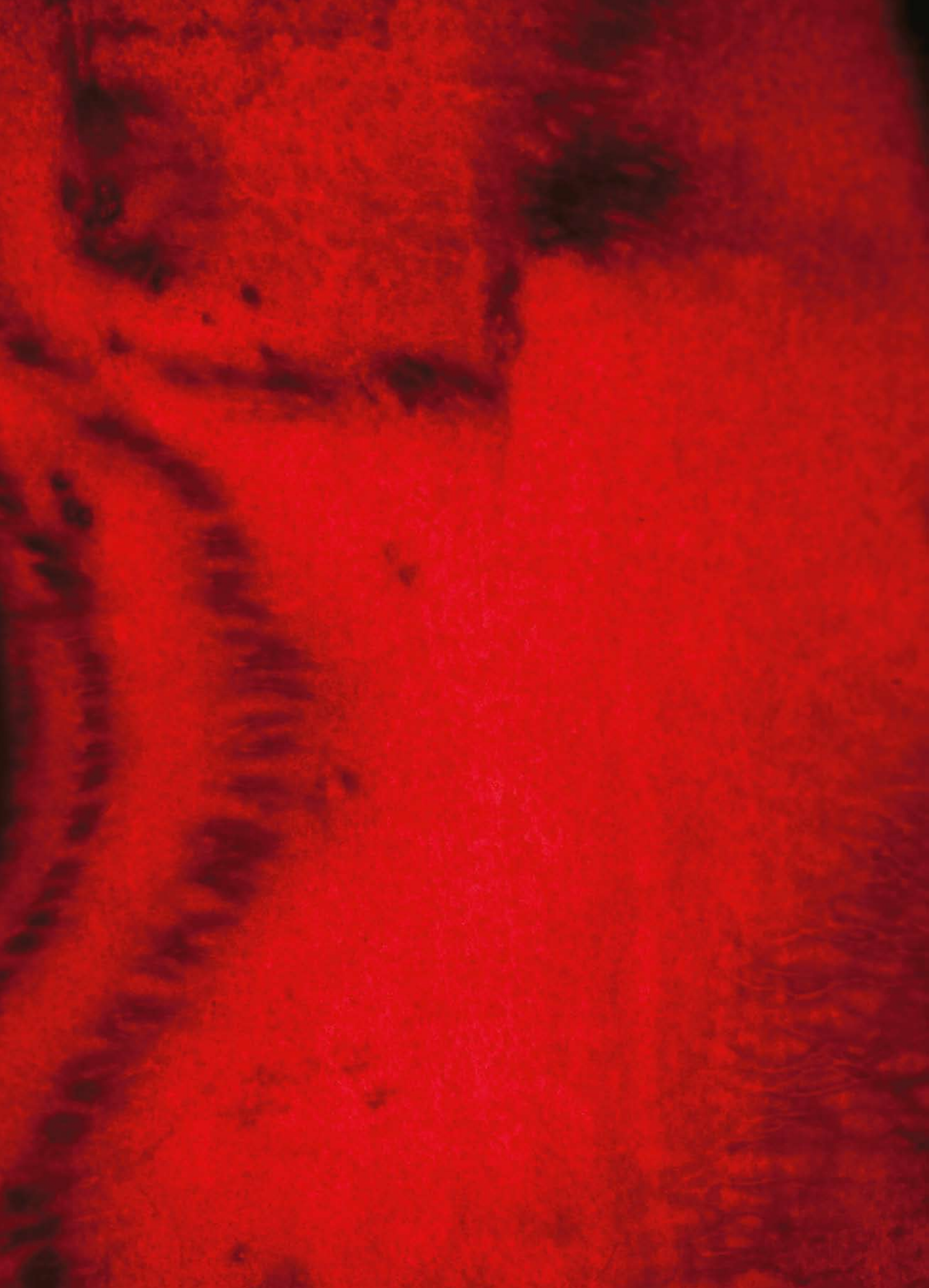
The Coast: The regions west of the mountains on the dry and rainless coast require modern irrigation systems. The cold Humboldt Current has a cooling effect; in the summer, cool fogs and breezes drift inland. The Pacific has such a strong influence on the coastal regions that even the Limarí valley next to La Serena in the north is among the country's coolest wine regions, despite the fact that it is 400 km closer to the equator than the Maipo region in the central valley – barely 50 km away from the coast. Chardonnay is harvested three weeks later in Limarí than in the central valley.

The Valley: The 500-km-long central valley nestles between the Andes and the coastal mountains. It is the country's lifeline, and this is where the largest vineyard areas are situated. Several rivers run across it – Aconcagua, Maipo, Cachapoal, Colchagua, Curico, Maule, Itata and Bio-Bio. In the rainless summer, these rivers carry melting water from the Andes. All the rivers flow west into the ocean and cut up the coastal mountains.

The traditional wine regions were named after these rivers – although most of the rivers cross several climate zones. The Maipo valley has cool vineyards at the foot of the Andes, hot vineyards in the middle of the valley and cool coastal vineyards near Melipilla. Winegrowing regions are not simply defined by self-contained climates but by distinct traditions, soils and individual smaller delimited terroirs.

Cold air blows inland from the sea, its intensity decreasing as it goes. Rivers don't flow in straight lines and the different microclimates are due to bends in the river and mountain anticlines. At night, the cool air descending from the Andes explains the wide diurnal temperature differences. The highly variable microclimates are also explained by the mountains' anticlines, varying altitudes and side-valleys. The warmest regions are in the middle of the central valley.

The reorganisation of regions agreed a few years ago by the Ministry of Agriculture to



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GRAFTING
AND
ITS
EFFECTS
ON
TASTE

— ERNST RÜHL & JOACHIM SCHMID, GERMANY —

MOST OF THE WORLD'S GRAPEVINES ARE GRAFTED ONTO AMERICAN ROOTSTOCKS. ALTHOUGH GRAFTING HAS ONLY BECOME STANDARD PROCEDURE OVER THE LAST 150 YEARS, THE FIRST GRAFTED GRAPEVINES WERE ALREADY MENTIONED IN THE FIRST CENTURY BY ROMAN WINE WRITER COLUMELLA. THE ROMANS PRACTISED GRAFTING TO OVERCOME SOIL INCOMPATIBILITY OF VARIETIES AND TO INFLUENCE VINE VIGOUR, AND CONSEQUENTLY IMPROVE BOTH YIELD AND QUALITY.

PROFESSOR ERNST RÜHL AND HIS COLLEAGUE JOACHIM SCHMID ARE WORKING AT GEISENHEIM UNIVERSITY, GERMANY, WHICH IS TOGETHER WITH DAVIS, CALIFORNIA ONE OF THE MOST IMPORTANT UNIVERSITIES IN THE WORLD WITH REGARD TO GRAPE GROWING AND THE DEVELOPMENT OF NEW VARIETIES. RÜHL'S RESEARCH IS BASED ON GRAPEVINE BEHAVIOUR AND ITS DISEASES.

THE PHYLLOXERA STORY

This remained the main reason for grapevine grafting for almost 2,000 years. But with the spread of the phylloxera pest in Europe between 1854 and 1860 (the first recorded outbreaks were in 1863), things changed dramatically. It quickly became apparent that the grafting of European scion varieties onto phylloxera-tolerant rootstocks was the only long-term way of overcoming the phylloxera threat and saving viticulture in many traditional regions. Grafting European scion varieties on phylloxera-tolerant American species or hybrids created the basis for a sustainable viticulture in Europe and many other grape-growing countries today.

In most European countries the changeover had to happen rapidly; the phylloxera attack was massive and the climatic and soil conditions were favourable to it. This wasn't the case in Germany and the country long remained largely free of the pest, counting on quarantine measures and soil fumigation if outbreaks were to occur. Rootstocks were seldom used, except in trials, so as to prevent outbreaks and the spread of the disease. Several institutes carried out rootstock breeding in case the quarantine strategy failed, which makes Germany one of the first countries to look at performance differences between grafted and own-rooted vines. But despite all the precautions, phylloxera had spread by the mid-1930s and rootstocks finally had to be

OCEAN ENOLOGY

— EDUARDO CHADWICK, CHILE —

THE CHILEAN PARADOX IS THAT ONLY A FEW YEARS AGO THE COUNTRY'S WINEGROWING REGIONS WERE CLASSIFIED FROM NORTH TO SOUTH, ALTHOUGH EXPERTS AGREE THAT THE VALLEY WHERE THE GRAPES ARE GROWN IS WHAT ACTUALLY DEFINES A PARTICULAR WINE. THE MOST MARKED STYLISTIC DIFFERENCES IN CHILE ARE BETWEEN VINEYARDS PLANTED CLOSE TO THE PACIFIC OCEAN AND THOSE IN THE HIGH ANDES.

THE LEADERSHIP OF SIXTH-GENERATION EDUARDO CHADWICK HAS MADE ERRAZURIZ ONE OF THE MOST DYNAMIC BIG WINE PRODUCERS OF CHILE. CHADWICK INTRODUCED AMBITIOUS HILLSIDE PLANTINGS AND PLANTINGS NEAR THE COAST OF CHILE. HE ALSO INTRODUCED SYRAH IN CHILE, DEVELOPED A JOINT VENTURE WITH MONDAVI AT THE TIME AND IS INVOLVED IN MANY PROJECTS, SUCH AS INTRODUCING ORGANIC AND BIODYNAMIC VITICULTURE IN CHILE, THE USE OF LIGHTER-WEIGHT BOTTLES ETC.

Yet a number of winemakers now mention proximity to the ocean on their labels, adding "Costa" next to the valley appellation. The tendency is to increasingly identify the bottle according to climate. Until recently, most wines simply went under a "Central Valley" appellation. Now new zones and styles are making their way onto the scene.

"COASTAL" CONDITIONS

In a north to south direction, the most interesting valleys along the coast are the beautiful windswept Elqui valley and the vineyards of Fray Jorge in Limarí. At 32° latitude, the rolling hillside vineyards of Aconcagua Costa

are just 12 km from the ocean, and further south we have the Casablanca, Leyda and San Antonio appellations.

Expressions and styles of the varieties planted in these new coastal zones vary according to soil type, heat summation, rainfall, solar exposure and other such factors.

In Limarí, for instance, most Chardonnays and Syrahs planted in vineyards some 20 km from the sea have an intensely mineral character, as well as fruitiness and a juicy feel present from start to finish. Soils in these parts contain limestone formations, like those that produce the very typical mineral notes of Chardonnays grown in France like Chablis or Côte d'Or in Burgundy. With floral and spicy notes

dominated by green pepper, both varieties offer excellent balance between ripeness and crispness, with a friendly style and delicate expression that makes them very approachable and easy to drink.

These qualities can be attributed to the coastal climate and the poor alluvial soils containing very little organic matter. Added to that is the lack of rain – just 100 mm a year – making irrigation systems essential. The latter capture the water from the mountains in interconnected reservoirs and distribute it from there. Unlike San Antonio-Leyda, which is a virtual amphitheatre facing the sea, Limari’s vineyards are separated from the ocean by the Altos de Talinay massif. This natural barrier that is home to the Fray Jorge National Park moderates the maritime influence in the valley’s interior. In summer, maximum daily temperatures are 25°-30°C and minimum night-time temperatures 10°-12°C.

The Leyda Valley is even closer to the sea; some of its vineyards are a mere 14 km from the Pacific Ocean. Without any interceding natural barriers, the vines receive the cool breezes from the coast almost directly, establishing them as real cold-climate varieties with marked mineral notes and citrus – also a feature of the white varieties grown in Casablanca. One major difference between the two valleys, however, is that Leyda’s proximity to the sea makes it much less susceptible to the frosts that frequently occur in Casablanca. The valley also has abundant sunlight and less morning fog.

Leyda’s outstanding varieties are Sauvignon Blanc and Pinot Noir. The soils generally present a higher percentage of clay than in Casablanca, which gives them more vigour and facilitates the management of Pinot Noir; in general, however, the soils here are poor. That, along with the strong maritime influence, naturally produces more concentrated grapes with lower yields.

The soils range from highly evolved volcanic soils of decomposed granite with a clay-loam texture to deeper rusty-reddish-brown alluvial soils containing gravel. The valley’s rolling topography offers varying degrees of solar exposure, which means different expressions of the same variety and wines with interesting complexity. During the ripening period, high temperatures range from 18°-20°C, with lows

between 8°-10°C. The great limiting factor in this valley is the lack of water, which is currently sourced from intake pipes along the Maipo River.

In the Valle de Aconcagua, Viña Errazuriz and Arboleda have extended their domains towards the sea, planting vineyards within what is known as the Aconcagua Costa appellation. These are the Manzanar and Chillue Vineyards respectively, only 12 km from the cold waters of the Pacific Ocean. The vines are planted on hillsides of varying steepness, from slow inclines to terraces. Most varieties are planted in clay-loam soils with the vines positioned in multiple ways to vary solar exposure. Selected varieties include Sauvignon Blanc, Chardonnay, Pinot Noir, Syrah, Pinot Grigio and Viognier. Syrah was planted on the estate’s north-facing slopes that are protected from the wind and where the heat summation is greatest. Roughly half the vineyards have been planted with rootstock, so as to accelerate ripening of the red varieties and to obtain consistent fruit set of Pinot Noir and Chardonnay.

Aconcagua Costa soils are predominantly made up of Coastal Mountain granite. Their most characteristic trait is their moderate fertility, which makes them especially suitable for producing white varieties and Pinot Noir. The soils also vary according to their position on the slope. In general, soil at the base of hillsides has more clay and higher fertility than soil higher up, which is thinner and stonier.

The two main planting methods in this type of landscape are in terraces or along the line of the steepest slope. In the past, winegrowers chose terracing because it made soil and water management easier. Nowadays, however, this is no longer the best choice. In the first place, water is now supplied by drip irrigation, which is well distributed and requires little flow. Next, we now have equipment with which we can move easily up and down hillsides, even when – as here – they are at a 30% incline. Lastly, this newer planting method significantly boosts the number of plants per hectare and therefore greatly increases land productivity. Erosion is controlled by letting grass grow in the autumn and winter and allowing it to dry up.

In Aconcagua Costa, the average temperature drops the closer we get to the sea. Solar

“CLOSENESS TO THE OCEAN MEANS A LOT OF SUMMER FOG ROLLING IN IN THE MORNING, RESULTING IN LIVELY AND MORE AROMATIC GRAPES”



THE
SPREAD
OF
DRIP
IRRIGA-
TION

— BY SAMUEL ORTEGA-FARIAS, CHILE —

OVER THE LAST FEW YEARS IN CHILE, FREQUENT DROUGHTS AND INCREASING COMPETITION FOR WATER RESOURCES HAVE GREATLY REDUCED THE AMOUNT OF WATER AVAILABLE FOR IRRIGATION.

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As a result of climate change, Chile's viticultural regions will soon be experiencing significantly less rainfall (20-40%), and the periodic ravages of the El Niño-Southern Oscillation regularly cause major droughts and economic setbacks in most winegrowing regions.

Most Chilean grape growers have wisely adopted drip irrigation as the most efficient method for using available water and ensuring yield and grape quality. Nearly all the new vineyards planted in Chile over the last 10 years use drip irrigation and a growing number of furrow-irrigated vineyards are being converted to it. The drip method allows greater irrigation control, which has led to significant interest and developments in scheduling devices, computer software and new irrigation management practices. There has been a simultaneous and growing

demand for higher quality fruit, which has been good news for the rapidly expanding Chilean wine export market. Many wineries have started to favor quality over volume through such on-farm management improvements as new irrigation strategies.

Vineyards have had to improve their irrigation scheduling according to the non-linear interaction of soil, vine and weather conditions. Regulated deficit irrigation (RDI) is widely used to improve fruit and wine quality, particularly for red varieties. Chilean wineries are introducing technologies to assess the spatial variability of soil, climate and vigour; the results are site-specific irrigation management techniques that simultaneously improve grape and wine quality and optimise water use. Among the new technologies increasingly relied upon are automatic weather stations,