

# Chapter Eleven

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## Gruner Veltliner

Austria's peppery point of pride



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### Fundamentals

**G**rüner Veltliner, Austria's signature white grape variety, is celebrated for its versatility, distinctive flavor profile, and ability to express terroir. The wines range from light, zesty, and refreshing styles ideal for early consumption to complex, age-worthy expressions that showcase nuanced mineral and spicy notes over time.

**Bud and Ripening Behavior:** Grüner Veltliner requires a long, cool growing season to develop its signature flavor profile while maintaining acidity and avoiding overripeness. In cooler climates, the grape can produce wines with a balance of fruit and acidity, while in warmer regions, it may be harvested early to preserve freshness and prevent excessive alcohol levels.

**Yield and Quality:** Grüner Veltliner can be a high-yielding variety, but managing yields is crucial for achieving high-quality wines. Keeping yields in check through practices such as cluster thinning helps to concentrate the grape's flavors and maintain a balance between fruit ripeness and acidity. Higher yields can result in diluted, less expressive wines.

**Clonal Selection:** Clonal selection plays a role in adapting Grüner Veltliner to specific regions and optimizing varietal expression. In Austria, clones such as Imelmann and Knoll are known for their aromatic intensity and resistance to disease, making them well-suited to the country's cool climate and winemaking traditions.

**Acidity and Structure:** Grüner Veltliner is known for its naturally high acidity, which is a key factor in producing fresh, lively wines with good aging potential. The grape's acidity is influenced by the cool climate and diurnal temperature variation in Austria's wine regions, which help to preserve freshness and balance in the wines.

**Winemaking Techniques:** The winemaking approach for Grüner Veltliner varies depending on the desired style. Key techniques include:

- **Temperature Control:** Cool fermentation temperatures are essential for preserving Grüner Veltliner's volatile aromas, delicate fruit and spice notes. Temperature-controlled stainless steel tanks are widely used for fermentation.
- **Lees Contact:** Short periods of skin contact is a regular practice to maximize flavor extraction. Extended lees contact and stirring (*bâtonnage*) are sometimes employed to enhance the texture and mouthfeel of Grüner Veltliner, adding depth and a creamy dimension to the wines.
- **Oak Usage:** While most Grüner Veltliner wines are fermented and aged in stainless steel to showcase the grape's varietal purity, some producers use oak barrels for their higher-end wines to add complexity and texture. Oak influence is usually subtle, allowing the grape's character to shine through.

**Flavor Profile and Integration:** Grüner Veltliner's flavor profile is characterized by its crisp acidity, subtle spiciness, and versatility. The presence of the compound *rotundone* contributes to its distinctive white pepper note, adding a spicy dimension that is particularly pronounced in fuller-bodied wines. In lighter styles, the wines exhibit notes of green apple, lemon, and white pepper, while more robust expressions showcase ripe stone fruits and mineral undertones alongside the peppery spice. The wines often have a medium to full body, with a slightly creamy texture and a refreshing, persistent finish. This combination of fruit, mineral, and spice, underscored by the grape's inherent *rotundone*, makes Grüner Veltliner a uniquely expressive and complex white wine.

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### **Basic Wine Styles of Grüner Veltliner:**

Grüner Veltliner is produced in a diverse range of styles, from light and zesty to full-bodied and complex. The most common styles include:

- **Light and refreshing:** These wines, often from the Weinviertel region, are crisp and easy-drinking, with flavors of green apple, lemon, and white pepper. They are designed for early consumption and are perfect as aperitifs or with light fare. These wines are protected under DAC (*Districtus Austriae Controllatus*), which ensures that wines labeled as such meet strict regional standards that maintain the light, aromatic quality typical of the area.
- **Medium-bodied and spicy:** Wines from regions like Kamptal and Kremstal often have more body and complexity, with notes of stone fruits, white pepper, and a distinct mineral backbone. The wines can also show hints of herbal elements. These wines are versatile food pairing options and can age well in the short to medium term.

- **Full-bodied and age-worthy:** The top wines from Wachau and other premier regions are known for their concentration, depth, and aging potential. The Vinea Wachau's classification of these wines into Steinfeder, Federspiel, and Smaragd are explained in more detail at the end of this chapter. These wines have a rich texture, pronounced minerality, and flavors of ripe stone fruits, white pepper, and sometimes a hint of honey. They can age beautifully for a decade or more.

**Preferred Climate:** Grüner Veltliner thrives in the cool to moderate climate of Austria's wine regions, where the warm days and cool nights facilitated by the Pannonian climate influence allow for slow, steady ripening. This climate, characterized by warm, dry summers and cold winters, significantly contributes to the diurnal temperature variation crucial for developing the grape's signature acidity, aromatics, and flavor profile. In the warmer microclimates within these regions, growers may opt for earlier harvesting to preserve the grape's freshness and prevent overripeness, ensuring the balance and crispness typical of Grüner Veltliner.

**Terroir Characteristics:** The influence of terroir is profoundly significant in shaping Grüner Veltliner, with different soil types and microclimates contributing crucially to the wine's flavor profile and structure. In regions like Wachau, Kamptal, and Kremstal, the primary rock (Urgestein) soils impart a distinct minerality and structure to the wines. In contrast, loess soils, which retain more water, are particularly beneficial for Grüner Veltliner, supporting its need for hydration and contributing to richer, more aromatic expressions. This variance in soil types often dictates the choice between planting Grüner Veltliner, which thrives in loess, and Riesling, which prefers the drier, stonier Urgestein. The interplay of soil, climate, and topography not only shapes the unique character of Grüner Veltliner from each region but also influences viticultural decisions regarding varietal planting, ultimately defining the distinct expressions of Austria's wine regions.

**Grape Characteristics:** Grüner Veltliner grapes are medium to large in size, with a greenish-yellow color when ripe. The grape's thick skins contribute to its potential for producing structured, age-worthy wines. Grüner Veltliner's naturally high acidity is a key factor in creating fresh, lively wines that can age gracefully over time.

**Viticulture and Vinification:** Viticultural practices for Grüner Veltliner are centered on managing the vine's vigor and controlling yields to ensure optimal ripeness and flavor concentration. In the vineyard, sustainable approaches such as organic and biodynamic practices are increasingly adopted to enhance soil health and biodiversity, contributing positively to the grape's expression. In the winery, gentle pressing and temperature-controlled fermentation in stainless steel tanks are standard to preserve the grape's delicate fruit and spice notes. Some producers may use oak barrels for fermentation or aging, particularly for their higher-end wines, to add complexity and texture without overwhelming the varietal character. These techniques underscore a commitment to quality and environmental stewardship, reflecting a modern approach to winemaking that respects traditional practices while incorporating sustainable innovations.

**Maturation:** The aging potential of Grüner Veltliner depends on the style and quality of the wine. Light, refreshing styles are best enjoyed young, while more structured, full-bodied wines from top vineyards can age gracefully for a decade or more. With time, these wines develop complex notes of honey, beeswax, and nutty flavors, while maintaining their signature acidity and minerality.

Grüner Veltliner's versatility, distinctive flavor profile, and ability to express terroir have earned it a place among the world's great white grape varieties. From the crisp, refreshing wines of the Weinviertel to the complex, age-worthy expressions of Wachau, Grüner Veltliner offers a diverse range of styles that showcase the grape's potential and the unique character of Austria's wine regions.

## Regions and Appellations

Grüner Veltliner, Austria's flagship white grape variety, is celebrated for its versatility and distinctive flavor profile, capable of expressing the nuanced terroir of Austria's diverse wine regions. Each region contributes uniquely to the grape's expression, ranging from light and zesty to complex and age-worthy styles.

**Wachau:** Nestled along the Danube River, the Wachau is renowned for producing Austria's most prestigious Grüner Veltliner wines. This region benefits from a unique microclimate facilitated by the Danube, which moderates temperatures, allowing for optimal ripening. The soils here, a mix of Urgestein (primary rock) and loess, impart distinct minerality and allow for the production of wines with notable structure and aging potential. Wines are classified into three categories based on their must weight: Steinfeder (light and fresh), Federspiel (medium-bodied and spicy), and Smaragd (the richest and most full-bodied, capable of significant aging).

**Kamptal:** Known for its similar climatic conditions to Wachau, Kamptal's vineyards on mixed loess and primary rock soils produce Grüner Veltliner with a perfect balance of ripe fruit flavors and pronounced minerality. The Kamptal DAC ensures wines reflect the region's high standards and unique terroir.

**Kremstal:** Close to Kamptal and sharing similar conditions, Kremstal also utilizes the beneficial effects of the Danube. Its soils combine loess and primary rock, fostering a diversity of wine styles from crisp and refreshing to robust and complex, often with a distinctive peppery note. Like Kamptal, Kremstal's DAC status emphasizes terroir-driven quality.

**Weinviertel:** Austria's largest wine region, Weinviertel, is distinguished by its cooler climate influenced by the Pannonian climate system, ideal for producing the signature peppery ('Pfefferl') style of Grüner Veltliner. Predominantly loess and clay soils help produce fruit-driven, accessible wines that are best enjoyed young. The Weinviertel was the first region to receive DAC status, highlighting its importance to Grüner Veltliner production in Austria.

#### Other Notable Regions:

- **Traisental:** Noted for its mineral-driven wines, emphasizing precision and finesse.
- **Wagram:** Known for its deep loess soils, Wagram produces fuller-bodied, richer Grüner Veltliner.
- **Vienna:** Unique for its urban vineyards, Vienna produces complex and surprisingly age-worthy Grüner Veltliner, often in the traditional field blend style known as Wiener Gemischter Satz.

Each of these regions showcases Grüner Veltliner's adaptability and the profound influence of terroir, from the light, refreshing wines of Weinviertel to the structured, minerally complex wines from Wachau's top vineyards. As Austrian vintners continue to innovate and refine their approaches, Grüner Veltliner remains a versatile and expressive ambassador of Austrian wine on the global stage.

## DEVICES:

**Dirt (Soil Type):** : Austria's wine regions boast a complex geology that profoundly influences the profile of Grüner Veltliner wines. The primary rock (Urgestein), particularly prevalent in regions like Wachau, Kamptal, and Kremstal, imparts a pronounced mineral backbone and structural complexity that is highly valued. This type of soil, which includes decomposed granitic and gneiss rocks, is credited with contributing to the wines' distinct minerality, enhancing their crispness and complexity. On the other hand, loess soils, which are dominant in the Weinviertel and found in parts of Wagram, play a different role. These wind-deposited soils are rich in lime and have excellent water retention capabilities, which helps in maintaining vine hydration and contributes to the development of Grüner Veltliner with fuller bodies and more pronounced fruit-forward profiles. The high fertility of loess encourages vigorous vine growth, which can lead to higher yields; however, careful vineyard management is necessary to control vigor and concentrate flavors. These soils not only influence the direct flavor profiles—mineral



versus fruity—but also affect the acidity levels and the potential for aging. Wines from primary rock soils tend to have higher acidity and a more pronounced aging potential, offering complex, savory notes as they mature. Conversely, wines from loess soils might exhibit richer, rounder profiles with a slightly softer acidity, making them more approachable in their youth. The interaction between these soil types and the local microclimates creates a diverse palette from which winemakers can craft distinct expressions of Grüner Veltliner. This diversity is a testament to the variety's adaptability and is key to understanding the full spectrum of styles that Grüner Veltliner can exhibit.

**Environment (Climate and Weather):** Austria's cool to moderate continental climate, marked by warm days and cool nights during the growing season, is crucial for the slow, steady development of Grüner Veltliner's signature flavors and aromatics. The significant diurnal temperature variation allows the grapes to ripen fully while preserving their natural acidity, a key factor in producing vibrant, fresh wines with good aging potential. The long, cool growing season also contributes to the development of Grüner Veltliner's distinctive white pepper note (*rotundone*), which is a hallmark of the variety and becomes more pronounced in cooler vintages or in grapes from cooler sites.

**Viticulture (Vineyard Practices):** In managing Grüner Veltliner vineyards, canopy management is particularly crucial due to the variety's vigorous growth habits. Techniques such as leaf removal and cluster thinning not only ensure better exposure to sunlight and air circulation but also help in the even ripening of grapes. These practices are vital in mitigating the risk of fungal diseases, which can thrive in the dense canopy of an unmanaged vineyard. Yield control is another significant aspect of cultivating high-quality Grüner Veltliner. By limiting the number of clusters per vine, vintners can direct more of the vine's energy into producing fewer but higher-quality grapes. This results in more concentrated flavors and enhances the overall structure of the wine. This is particularly important for Grüner Veltliner, as unchecked yields can quickly lead to diluted flavors and a loss of varietal distinctiveness. Hand-harvesting is often employed in the top vineyards to ensure that only the best grapes are selected. This manual selection process allows for the sorting of grapes based on ripeness and health, ensuring that only the best quality fruit makes it into the winemaking process. Such meticulous selection is crucial for producing premium Grüner Veltliner wines that express both varietal purity and regional *terroir*. Advanced irrigation techniques, particularly in regions prone to drought, are crucial for maintaining vine health and balance. Drip irrigation systems, for instance, provide water directly to the vine roots, offering better water use efficiency and helping vintners manage the water stress levels of their vines—essential in controlling vine vigor and fruit concentration. In sum, these viticultural strategies are tailored to enhance the intrinsic qualities of Grüner Veltliner, focusing on producing grapes that can express the full potential of this versatile varietal. The combination of careful canopy management, yield control, hand-harvesting, and precise irrigation reflects a deep understanding of both the varietal and the unique challenges it presents in the vineyard.

**Innovation (Vinification and Technology):** Advances in winemaking technology have greatly influenced the quality and style of Grüner Veltliner wines. Temperature-controlled stainless steel fermentation is widely used to preserve the grape's delicate fruit and spice notes, as well as its fresh, crisp acidity. Some producers, particularly those crafting more complex, age-worthy styles, employ oak fermentation or aging to add depth, texture, and subtle spice notes without overwhelming the varietal character. Extended lees contact and *batonnage* (stirring) are also used to enhance the wine's texture and mouthfeel, contributing to a creamy, fuller-bodied style. These innovations have expanded the range of Grüner Veltliner expressions, from the classic unoaked, fresh styles to the more complex, structured wines suitable for aging.

**Cuvée (Blend):** Although Grüner Veltliner is primarily produced as a single-varietal wine to showcase its unique character, some producers in Austria blend it with other white varieties to create more complex, layered wines. These blends often include other indigenous grapes like Welschriesling or Weissburgunder (Pinot Blanc), which can contribute additional fruit notes, body, or acidity to the final wine. The proportion of Grüner Veltliner in the blend directly influences the wine's style, with higher percentages typically resulting in wines that more closely resemble the classic Grüner Veltliner profile.



**Elevation (Topography):** The varying elevations across Austria's wine regions play a crucial role in shaping the character of Grüner Veltliner wines. In high-altitude areas such as Wachau and Kremstal, vineyards situated at greater elevations benefit from cooler temperatures and extended growing seasons. This environment promotes the development of higher acidity and pronounced minerality, leading to wines with a focused and linear character. Conversely, south-facing slopes in regions like Kamptal and Wagram receive more sun exposure, encouraging fuller ripeness and the development of robust fruit flavors. These factors culminate in a diverse range of Grüner Veltliner styles, from lean and mineral-driven expressions typical of cooler, elevated sites to richer and more opulent wines from lower, sun-drenched terrains. The interplay of elevation and aspect not only affects the ripening process but also significantly influences the flavor development and structural complexity of the wines, highlighting the profound impact of topography on viticulture in Austria.

**Style (Winemaking Choices):** Winemaking choices play a crucial role in defining the style and character of Grüner Veltliner wines. Decisions regarding harvest timing, fermentation vessels (stainless steel or oak), lees contact, and aging regimen all shape the final wine profile. Early-harvested grapes typically produce lighter, fresher styles with crisp acidity and pronounced citrus and green apple notes. Later-harvested grapes, often from warmer sites or in riper vintages, yield fuller-bodied wines with more stone fruit and tropical flavors. The use of oak, whether for fermentation or aging, introduces subtle spice, vanilla, and textural elements, while extended lees contact adds richness and a creamy mouthfeel. The spectrum of Grüner Veltliner styles, from the zesty, peppery wines of the Weinviertel to the complex, age-worthy Smaragd wines of the Wachau, reflects the diverse winemaking approaches and regional influences that shape Austria's signature white grape.

**Terroir (Integration of All Factors):** The concept of terroir—encompassing the unique combination of soil, climate, topography, and human intervention—is pivotal in shaping the distinctive character and quality of Grüner Veltliner across Austria's diverse wine regions. The primary rock soils of the Wachau, Kamptal, and Kremstal contribute to wines with remarkable mineral intensity and structural complexity, enhanced by the cool climate and significant diurnal temperature variations typical of these areas. In contrast, the loess soils of the Weinviertel and Wagram, coupled with slightly warmer conditions, foster more fruit-driven and approachable wines, distinguished by a characteristic white pepper note (rotundone). This interplay of terroir elements, along with the grape's inherent acidity and the winemaker's stylistic decisions, cultivates a spectrum of Grüner Veltliner expressions, illustrating the variety's remarkable versatility and its adaptive response to different terroirs. The nuanced understanding of these interactions is crucial for appreciating the regional distinctions and the complex profiles of Austria's signature white grape.

#### *Distinguishing Factors for Blind Tasting*

##### **Grüner Veltliner (General):**

*Light to medium-bodied with high acidity  
Green apple, pear, lemon, and white pepper (rotundone)  
Vegetal notes of green peas and fresh herbs  
Dry with a crisp, refreshing mouthfeel  
Often displays a mineral-driven finish*

##### **Wachau, Austria (Smaragd):**

*Medium to full-bodied with high acidity  
Intense aromas of ripe stone fruits, green apple, and citrus  
Pronounced white pepper note and mineral complexity  
Fuller texture with a long, persistent finish  
Potential for honey and nutty notes with age*

##### **Kamptal & Kremstal, Austria (Klassik):**

*Light to medium-bodied with high acidity  
Green apple, pear, lemon, and white pepper  
Distinct vegetal and herbal notes  
Crisp and refreshing with a mineral backbone  
Moderate alcohol and a focused, linear structure*

##### **Weinviertel, Austria (Klassik):**

*Light-bodied with high acidity  
Pronounced green apple, lemon, and white pepper notes  
Often displays a subtle grassy or herbal character  
Crisp and refreshing with a lighter texture  
Typically consumed young and unoaked*

##### **Wagram, Austria (Reserve):**

*Medium-bodied with balanced acidity  
Ripe pear, white peach, and subtle white pepper  
Can have a slightly creamier texture due to loess soils  
Some oak aging, adding complexity and depth  
Potential for honey and nutty notes with age*

##### **New World (e.g., USA, Australia, New Zealand):**

*Light to medium-bodied with high acidity  
Aromas/flavors of green apple, pear, and citrus  
White pepper note may be less pronounced  
Often displays a subtle tropical fruit character  
Typically unoaked, focusing on varietal purity  
Styles can range from crisp and mineral-driven to slightly richer and more fruit-forward*

## **Tasting Note for a Wachau Smaragd Grüner Veltliner**

**Appearance:** The wine displays a brilliant, deep straw yellow color with golden highlights, hinting at its concentration and maturity. The clarity is impeccable, and the wine exhibits a lively intensity, suggesting a wine of considerable depth and richness.

**Nose:** An expressive and complex bouquet greets the nose, featuring a harmonious blend of ripe green apple, pear, and white peach, underscored by subtle notes of white pepper, delicate herbs, and a distinct wet stone minerality. As the wine aerates, additional layers emerge, including hints of citrus zest, honeysuckle, and a subtle smoky quality that adds intrigue and depth to the aromatic profile. The intensity and purity of the fruit and mineral aromas are testament to the wine's origin in the prized Smaragd vineyards of the Wachau.

**Palate:** On the palate, the wine is dry and full-bodied, with a supple, creamy texture balanced by a vibrant, well-integrated acidity that provides a lively backbone and drives the flavors to a long, persistent finish. The flavor profile seamlessly mirrors the complexity of the nose, with high intensity ripe orchard fruits, particularly green apple and pear, taking center stage, complemented by nuances of white peach and citrus zest. The fruit flavors are underlaid by a distinctive white pepper note, a hallmark of Grüner Veltliner, along with hints of fresh herbs and almond, adding depth and dimension to the palate. The wine's minerality is also pronounced, with a wet stone character that runs through the mid-palate and finish, providing a sense of place and reflecting the unique terroir of the Wachau. The alcohol is well-integrated, supporting the wine's structure and intensity without overpowering the delicate fruit and mineral interplay. The finish is long, lingering, and impressively complex, with the fruit, mineral, and spice notes persisting harmoniously. The wet stone minerality carries through to the end, providing a refreshing, almost saline quality that invites another sip. The enduring aftertaste showcases the wine's balance and depth, with the ripe fruit flavors, vibrant acidity, and mineral backbone seamlessly interwoven.

**Quality Assessment: The wine is of outstanding quality.**

- **Balance (5/5):** The wine achieves a remarkable balance between its luscious fruit, lively acidity, and mineral intensity, creating a harmonious and captivating experience that exemplifies the finest Wachau Smaragd Grüner Veltliner.
- **Length (5/5):** The finish is exceptionally long and persistent, with the complex interplay of fruit, mineral, and spice notes lingering on the palate, reflecting the wine's outstanding quality and depth.
- **Intensity (5/5):** The aromatic and flavor intensity is pronounced, with well-defined fruit, mineral, and spice characteristics that showcase the varietal's potential and the influence of the Wachau's unique terroir.
- **Complexity (5/5):** The wine displays an exceptional level of complexity, with multiple layers of orchard fruit, citrus, herbal, white pepper, and mineral notes that evolve and intertwine on the nose and palate, providing a captivating and intellectually stimulating tasting experience.
- **Typicity (5/5):** This Grüner Veltliner is a quintessential expression of the Wachau Smaragd style, showcasing the varietal's hallmark characteristics of ripe fruit, white pepper, and mineral intensity, along with the region's signature concentration and aging potential.

**Ageability:** The wine's impeccable balance, concentration, and structural elements suggest that it has significant potential for aging. While already impressive in its youth, the wine's complexity and depth are likely to evolve and gain additional nuance over the next 5-10 years, with the potential to continue developing for even longer in optimal cellaring conditions. The vibrant acidity, mineral backbone, and intense fruit concentration provide a solid foundation for graceful aging, allowing the wine to develop more tertiary notes of honey, beeswax, and nutty overtones while retaining its essential freshness and varietal character.

## Austrian Wine Quality System Overview

Austria's wine quality system, designed to ensure the production of high-quality wines, reflects the unique characteristics of their regions and terroirs through both traditional classifications and the more recent Districtus Austriae Controllatus (DAC) system, emphasizing regional typicity.

- **Qualitätswein:** Wines of quality from specific, regulated wine-growing regions. These wines must pass sensory tasting and chemical analysis, displaying characteristics typical of their origin.
- **Prädikatswein:** Wines with special attributes, categorized into specific levels based on the ripeness and sugar content of the grapes at harvest. Categories include Spätlese, Auslese, Beerenauslese, Eiswein, Strohwein, and Trockenbeerenauslese.

### Districtus Austriae Controllatus (DAC) System:

Introduced to highlight the distinctive qualities of wines from specific regions, DAC wines must meet strict criteria regarding grape varieties, viticulture, and winemaking practices to ensure they express the typical character of their region. Each DAC has its regulations outlining permitted grape varieties and winemaking practices to ensure the wines produced reflect the region's characteristic flavor profile.

#### Wachau Quality Levels:

- **Steinfeder:** Lightest category, named after a local grass, with alcohol content up to 11.5%. Must weight for these wines is typically lower, emphasizing fresh, light wines with delicate aromatics.
- **Federspiel:** Medium-bodied wines requiring a higher must weight, with an alcohol content between 11.5% and 12.5%. Named after a falconry tool, reflecting their balance and precision.
- **Smaragd:** The highest category, named after the emerald lizards native to the region's vineyard terraces. These wines have a minimum alcohol content of 12.5% and must weight that indicates full ripeness and concentration. Smaragd wines are noted for their complexity, richness, and aging potential, showcasing the depth and intensity that Wachau Grüner Veltliner and Riesling can achieve.

This structured approach to classification not only helps consumers understand the style and quality level of Austrian wines but also emphasizes the country's dedication to reflecting terroir and regional characteristics in their wine production.