

# Traminette Vineyard Management

*How to grow Indiana's signature wine grape*



*The white wine grape variety Traminette (Gewürztraminer x J. Seyve 23-416) has been selected as Indiana's signature variety to help create a regional identity for the state's wines. The Purdue Wine Grape Action Team has determined that Traminette is widely adapted to the state's various climates and capable of producing wines of distinctive character and outstanding quality. Traminette produces a white wine with distinctive floral aroma and spicy flavors, characteristic of its Gewürztraminer parent. We have grown Traminette and produced experimental wines for 15 years, and have identified its strengths and weaknesses. We have also evaluated commercial wines to determine the most suitable wine style for this variety. This guide advises producers on the best commercial production practices to successfully grow high quality Traminette fruit. Basic grape production information can be found in the Midwest Grape Production Guide, Ohio State University Extension Bulletin 919 ([www.hort.purdue.edu/fruitveg](http://www.hort.purdue.edu/fruitveg)).*

## Winemaking

Advice on the best winemaking practices, including harvest chemistry, fruit processing, fermentation, stabilization and fining, stylistic options, etc. is provided by Purdue Extension publication FS-59-W, *Traminette Winemaking* ([www.extension.purdue.edu/extmedia/FS/FS-59-W.pdf](http://www.extension.purdue.edu/extmedia/FS/FS-59-W.pdf)).



## Adaptation to Indiana's climate

One of Traminette's positive characteristics is the relatively high level of cold hardiness. It is much more hardy than its Gewürztraminer parent. It is also much more tolerant of diseases. Traminette can withstand normal winter minimum temperatures across most of Indiana with little or no bud damage. In 2009, when temperatures

dropped to -18°F in Lafayette, Traminette had 50 percent live primary buds. Other varieties, such as Vidal, had less than 10 percent live primary buds. Indiana seldom experiences temperatures colder than -20°F. With proper pruning adjustments, growers can produce a full crop on Traminette even following uncharacteristically cold winters. Traminette buds out on average about two weeks later than early varieties such as Foch and Marquette, which helps it avoid spring frost damage. Traminette ripens mid to late season, usually coinciding with improved weather conditions for optimum fruit quality.

## Pruning and training

Another of Traminette's positive characteristics is the relatively high vigor of own-rooted vines on a wide range of soil types. Good vine vigor ensures maximum productivity for sustainable production. Excess vigor can be a weakness and can result when this variety is grown on deep, fertile, well-drained soils. Excess vigor can lead to shading in the canopy and poor fruit quality. Our research has shown that fruit quality, especially development of monoterpenes, the important aromatic compounds, depends on sunlight exposure of the fruit. Heavily shaded fruit can have less than half the monoterpene content of exposed fruit.

Training systems can have a direct influence on fruit exposure potential. Our research has shown that mid-wire cordon (or cane) training with vertical shoot positioning (VSP) can facilitate leaf removal to improve fruit sunlight exposure. Traminette's upright shoot growth lends itself well to vertical shoot positioning. Vertical (upright) training of shoots, however, can lead to excess vegetative vigor, so this system is best for moderate- to low-vigor sites. The standard high cordon system, used widely in the Midwest, helps manage vegetative vigor by positioning the shoots in a downward direction that naturally reduces shoot vigor. It is the best system for Traminette on sites with high vigor. With this system however, extra care is necessary with canopy management to ensure good fruit exposure. On particularly vigorous sites, horizontally divided canopy training such as Geneva Double Curtain (GDC), or vertically divided canopy training such as Scott Henry or Smart-Dyson, may be the best training systems.

## Training systems for Traminette



The high cordon training system.



Mid-wire cordon with vertical shoot positioning.



Scott Henry vertically divided canopy system.

## Canopy management

As with the training system, canopy management is a key tool to improve fruit exposure to sunlight, which ultimately improves the wine quality. Leaf removal in the cluster zone is very effective at improving fruit exposure. Most often, leaf removal needs to be done only on the east side of the row (assuming north-south row orientation) to assure adequate exposure of fruit. Excessive leaf removal, especially on the west side of the canopy, may lead to sunburned fruit. On high cordon trained vines, removal of some leaves on the top of the canopy as well as in the cluster zone can be very successful.



Traminette trained to mid-wire cordon with vertical shoot positioning. Enough leaves removed to get good exposure of clusters.

## Crop load management

Traminette, unlike many hybrid varieties, is not overly fruitful. Cluster thinning is not normally necessary to balance the yield to the vine's vegetative vigor and capacity to ripen the crop. Crop management through cluster thinning may be necessary on young vines in their second and third leaf to improve vine vigor and establishment.

In our trials at multiple locations, yield has averaged between 12 and 20 pounds per vine, with vine size measures (pruning weights) of 2 to 3.5 pounds per vine. This has resulted in a crop load ratio (yield to pruning weight) of between 6 and 10, which is considered within the ideal range. Because Traminette is not excessively fruitful, it is relatively easy to maintain vine balance through balanced pruning.

Vines in our trials have an average of 1.4 clusters per shoot, with average weights of 0.25 to 0.32 pounds. A pruning formula of 20+20 is appropriate to balance yield to vine vigor. For instance, a vine with a pruning weight of 2 pounds would dictate retaining 40 buds. Those buds would produce 40 shoots each with about 0.35 to 0.45 pound of fruit clusters, leading to a yield of 14 to 18 pounds per vine, and a crop load ratio of 7 to 9. As with all varieties, short shoots should be removed or stripped of fruit to improve overall fruit quality.

Poor fruit set has been observed in Traminette in our trials in some years. Growers should plan on this possibility and leave any cluster-thinning decisions until after fruit is complete and cluster size can be estimated.

## Pest management

Traminette is relatively tolerant of most of the common grape diseases, but a good spray program is necessary to maintain vine health and produce quality fruit. Growers should follow the recommendations in Purdue Extension Publication ID-169, *Midwest Small Fruit and Grape Spray Guide* ([www.hort.purdue.edu/fruitveg](http://www.hort.purdue.edu/fruitveg)). Traminette occasionally develops downy mildew (*Plasmopora viticola*), and less frequently shows powdery mildew (*Uncinula necator*). It is not particularly susceptible to black rot (*Guignardia bidwellii*) or Botrytis (*Botrytis cinerea*) fruit rot. However, it is quite susceptible to *Phomopsis viticola*, the cause of Phomopsis cane and leaf spot, which must be controlled to reduce fruit rot problems. It has shown some incidence of crown gall disease, but does not appear to be especially susceptible. There is some concern from other regions about Traminette's potential susceptibility to root phylloxera (*Daktulosphaira vitifoliae*) due to it having more than 50 percent *Vitis vinifera* parentage. We have not seen vine decline attributed to phylloxera in Indiana, but this does not mean that it will not occur in the future. The common solution to root phylloxera is to plant vines grafted to phylloxera-resistant rootstocks. This would likely increase vine vigor of this already vigorous variety, so growers must carefully weigh this option against the risk of planting own-rooted vines. One advantage of own-rooted

vines is that they are able to regrow from the ground in the event of a severe winter freeze. With grafted vines the graft union must be protected from winter cold for the first two to three years by burial in soil or heavy mulching.

## Fruit maturity and picking decisions

Traminette is a mid- to late-ripening variety. Average harvest date is Sept. 2 in Vincennes in southern Indiana, and Sept. 23 in Lafayette in northern Indiana. Sufficient hang time is important so that fruit will achieve the appropriate sugar and acid balance, and the desired flavor and aroma profile. As previously mentioned, sunlight exposure is critical for development of the flavor and aroma compounds that impart the wine's varietal character. As with all varieties, it is necessary to closely monitor developing pests and diseases as harvest time approaches, and monitor weather forecasts to ensure that fruit will be harvested in optimal condition. In some years, excess rainfall near harvest may lead to fruit cracking and fruit fly infestation, and may force early harvest. Early season Phomopsis cane and leaf spot can lead to latent fruit rot problems. Care must be taken early in the season to prevent Phomopsis infections. Rotten clusters should be sorted out by hand before the fruit is processed. Care should be taken to ensure that the fruit is not contaminated with multicolored Asian lady beetles. Two to three beetles per cluster can ruin the resulting wine if not removed. Growers must scout regularly prior to harvest and apply one of the approved insecticides if necessary. Always refer to the label when applying pesticides close to harvest and strictly adhere to pre-harvest intervals to avoid the possibility of illegal residues.

## Fruit chemistry

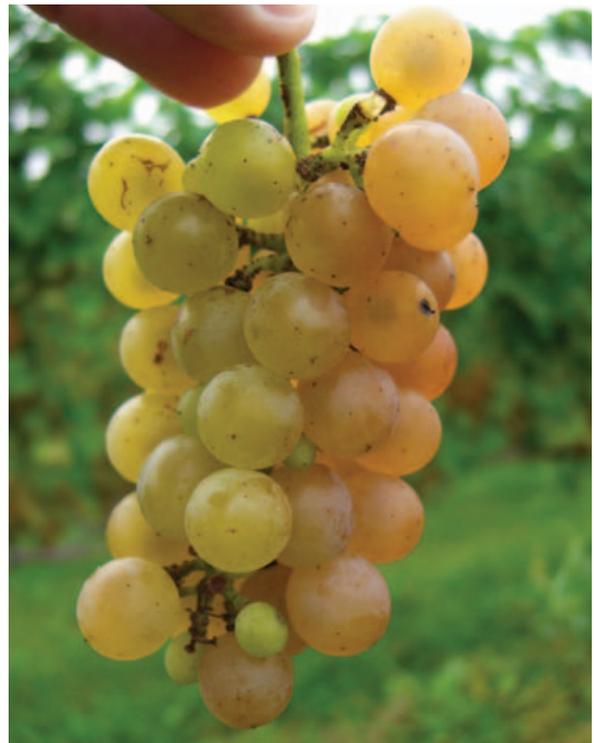
Traminette has consistently produced well-balanced fruit across the entire state of Indiana. It typically achieves sugar concentration of 22 +/- 2 Brix (% sugar w/w), with a juice pH around 3.2 +/- 0.2 and titratable acidity (T.A.) around 7.0 +/- 1.0 g/L (0.7%). Proper berry sampling (200 random berries per vineyard block) is essential for a good assessment of overall fruit ripeness and to avoid surprises once the fruit is at the winery. Regular tasting of fruit will help determine development of flavor and aroma compounds.

## Berry color assessment

Sun exposure of the berries is essential for the formation of high concentrations of monoterpenes, the main contributors to Traminette's varietal aroma, reminiscent of roses, apricots, white peaches, passion fruit, and pears. A light golden color of the clusters indicates mature fruit. Green fruit is a sign of fruit shading due to an overly vigorous canopy. Proper canopy management can help reduce cluster shading and improve wine quality.



Shaded cluster on left, exposed cluster on right.



Cluster with green berries on unexposed side

## **Fruit temperature**

Traminette should be harvested when the fruit is cool to help preserve the delicate aroma compounds. Fruit temperature should be below 65°F as it reaches the winery. Begin harvest early in the morning and move picking bins to the winery as quickly as possible. If the fruit reaches temperatures above 80°F, the fruit needs to be chilled before processing. This helps to avoid spontaneous fermentations, high volatile acidity, and stem/skin tannin extraction from crushed berries and their juice.

## **Summary**

Traminette is a well-adapted new and unique variety for production of premium wines in Indiana. Its performance in our research trials and in commercial vineyards has been outstanding. With proper vineyard management practices, growers across the state should be able to consistently produce excellent fruit from this variety. Traminette has great potential to produce a range of locally and nationally recognized and competitive wine styles.

---

### **Reviewed by:**

#### **Peter Hirst**

Associate Professor of Horticulture  
Department of Horticulture & Landscape Architecture, Purdue University

#### **Paul Howard**

Horticulture/Greenhouse Technician  
Department of Horticulture & Landscape Architecture, Purdue University

---