Texas A&M AgriLife Extension Service

Viticulture & Enology

Herbicide Damage Survey For 2019

In response to multiple reports of increasing damage caused by herbicide drift into Texas vineyards, the Texas A&M AgriLife Extension Service Viticulture & Enology team developed a plan to assess the extent of herbicide damage across the state. Our initial approach was to:

1. Develop written, research-based standard descriptors for 2,4-D and dicamba damage including a visual rating scale for severity of symptoms.
2. Train program specialists in recognition/differentiation of symptoms and evaluation of severity.
3. Develop plan for making observations in vineyards with the permission of owners.
4. Develop plan for responding to reported damage.
5. Summarize the extent and severity of damage by region and grape variety.

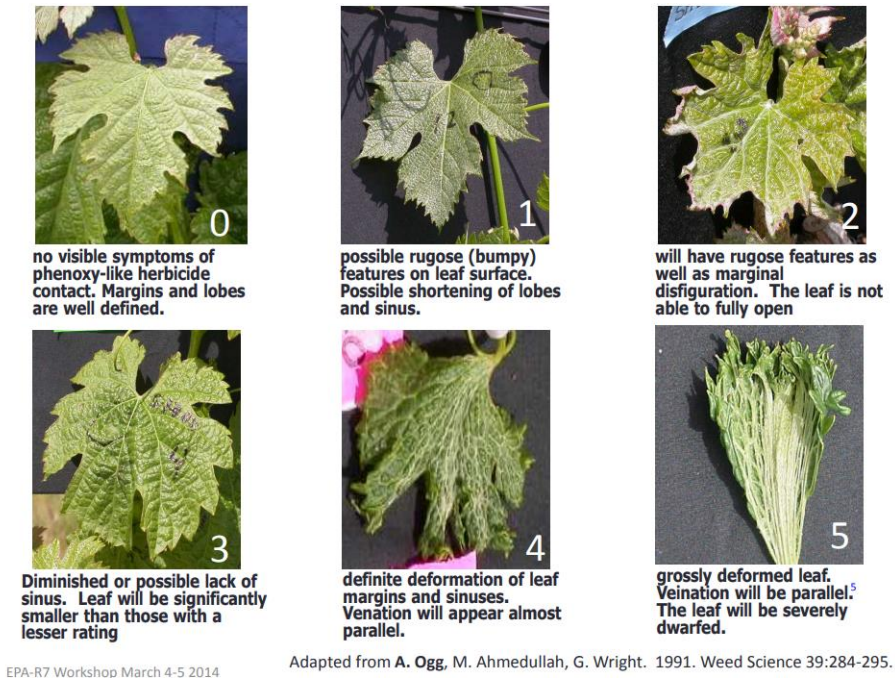
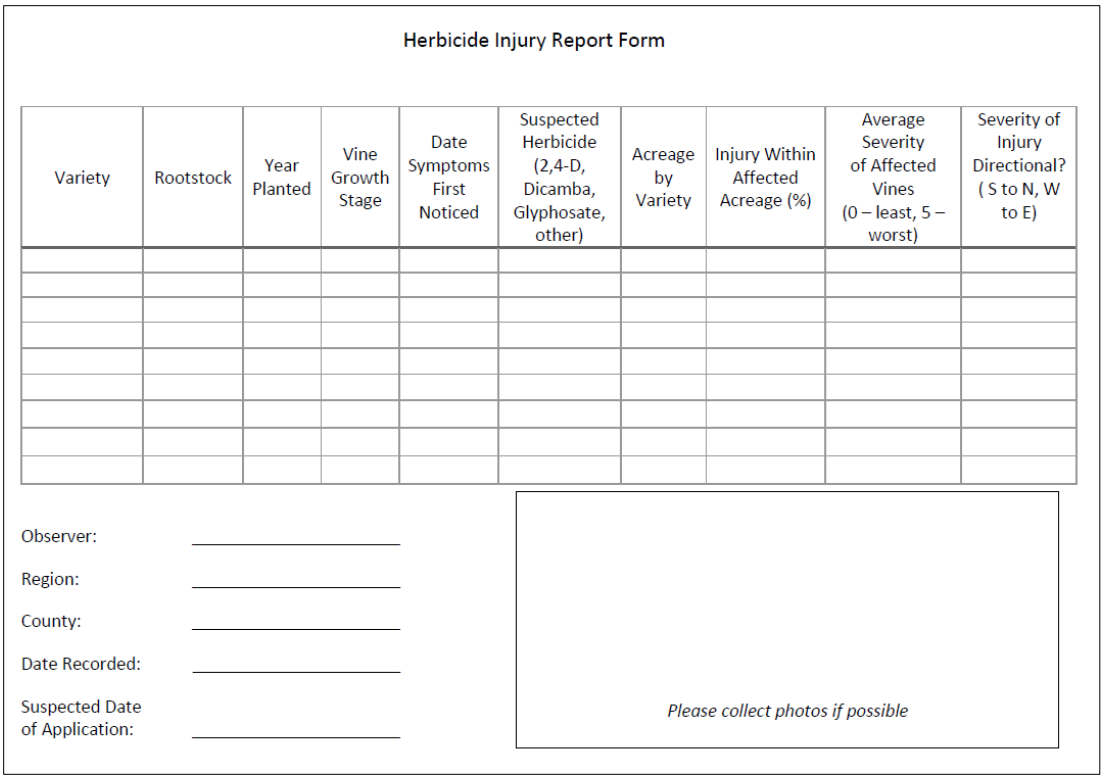


Figure 1. 2,4-D leaf damage severity index (from Washington State University).



Herbicide Injury Report Form

Variety	Rootstock	Year Planted	Vine Growth Stage	Date Symptoms First Noticed	Suspected Herbicide (2,4-D, Dicamba, Glyphosate, other)	Acreage by Variety	Injury Within Affected Acreage (%)	Average Severity of Affected Vines (0 – least, 5 – worst)	Severity of Injury Directional? (S to N, W to E)

Observer: _____

Region: _____

County: _____

Date Recorded: _____

Suspected Date of Application: _____

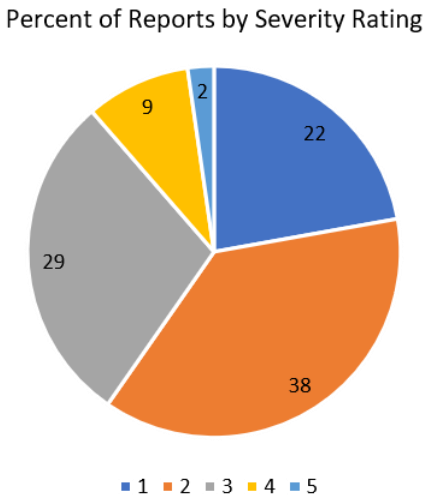
Please collect photos if possible

Figure 2. Herbicide survey information report used to gather data (Texas A&M AgriLife Extension Service).

SURVEY RESULTS

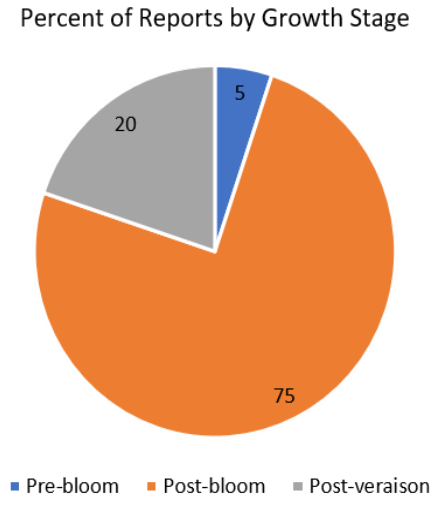
A. Severity of damage based on visual ratings of 1 (light damage) to 5 (severe damage) utilizing damage severity rating scale pictured in figure 1.

Severity	Percent of Reports by Severity Rating
1	22
2	38
3	29
4	9
5	2



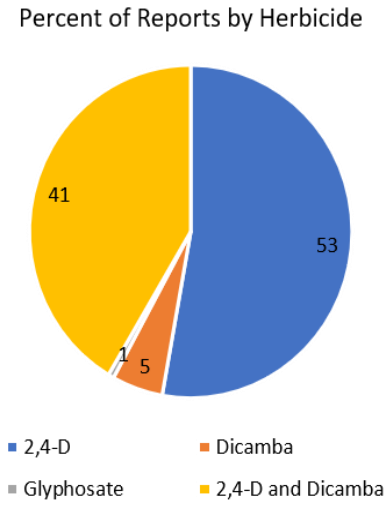
B. Grapevine growth stage recorded at time of herbicide injury utilizing the modified E-L system.

Growth Stage	Percent of Reports by Growth Stage
Pre-bloom	5
Post-bloom	75
Post-veraison	20



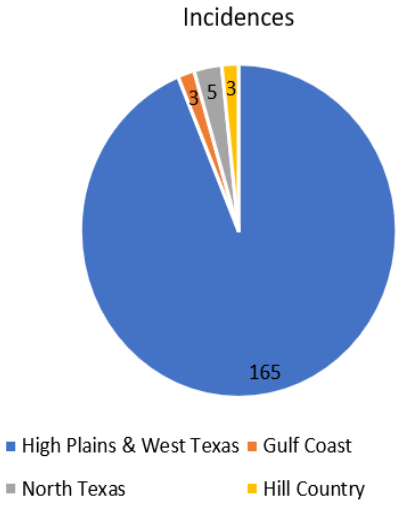
C. Suspected herbicide damage from leaf symptoms displayed as a percentage recorded during survey plot visits.

Herbicide	Percent of Reports by Herbicide
2,4-D	53
Dicamba	5
Glyphosate	1
2,4-D and Dicamba	41



D. Incidence of herbicide damage by region recorded during 2019

Region	Incidences
High Plains & West Texas	165
Gulf Coast	3
North Texas	5
Hill Country	3



SUMMARY

Early in the growing season, the most common incidents recorded were of very minor 2,4-D damage most likely from volatilization drift. Later in the growing season, around late May and early June, leaf cupping commonly associated with dicamba damage began to be observed. Damage recorded between June and August consisted mainly of a combination of both 2,4-D and dicamba.

Damage occurred across 176 different blocks covering over 575 planted acres of vineyard, affecting over 40 growers across the state.

The most widely affected variety by acreage was Cabernet-Sauvignon, followed by Merlot and Mourvèdre. Over 52 different varieties were documented to have been affected by herbicide damage.