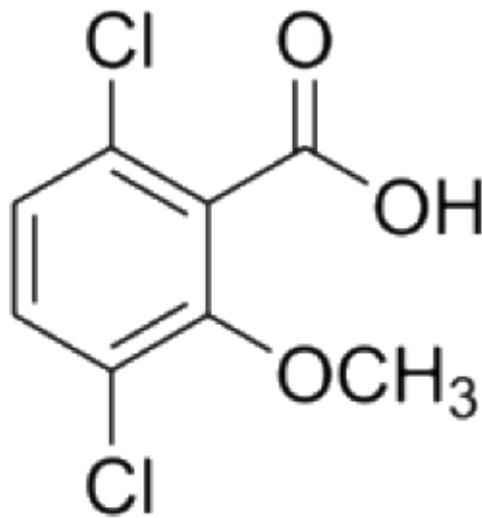


Dicamba is a Word You Should Learn



Dicamba molecule

This is biological blackmail. Use our seeds or your crop will die.

Dicamba combined with Monsanto's Xtend seed line is a relatively low-cost way of controlling weeds in soybean and cotton fields. But if your farm is next door and you don't plant Monsanto seeds, you better be upwind from the neighbor. Otherwise, dicamba will blow onto your field, severely

damaging your crops. Read on for one of the best examples of a **negative externality** I've ever heard. (There is a [good article in the St. Louis Post-Dispatch](#) that is the source for much of this article.)

The Economics

Dicamba creates a negative externality. Neighboring farms that do not plant Monsanto seeds may suffer crop damage. In principle (see the Coase Theorem) the farmers should be able to negotiate with dicamba producers for compensation. In practice, we know Coase's solution does not work when there are many entities experiencing damage. Reported damage is currently 242 farms in Arkansas alone. The farmers should get together and hire a good lawyer.

But this is even worse. The solution to averting damage is to buy and plant Monsanto seeds! This is biological blackmail. Use our seeds or your crop will die. Luckily, this also gives us a measure of damage cost: the difference between using the dicamba-Monsanto system and a competing system (LibertyLink) made by Bayer.

What Is Dicamba? How Does It Work?

Dicamba is an **herbicide** used to control weeds in crop fields. The problem is that **dicamba also kills crops**. However, [Monsanto's Xtend crop line](#) is resistant to this chemical. Thus, plant your soybeans or cotton using Monsanto's seeds, treat the fields with dicamba, and your weed control problems are solved.

But the farm next door may not be so happy. Dicamba is both volatile and drift-prone. In non-agricultural English that means it can **evaporate and redeposit on neighboring farms**. And it can also be **blown onto those fields by wind**.

This has caused a lot of damage. **Most of the reported damage**

is in Arkansas and Missouri. According to the [St. Louis Post-Dispatch](#), there have been 242 cases of dicamba misuse in Arkansas alone.

Who Is the Competition?

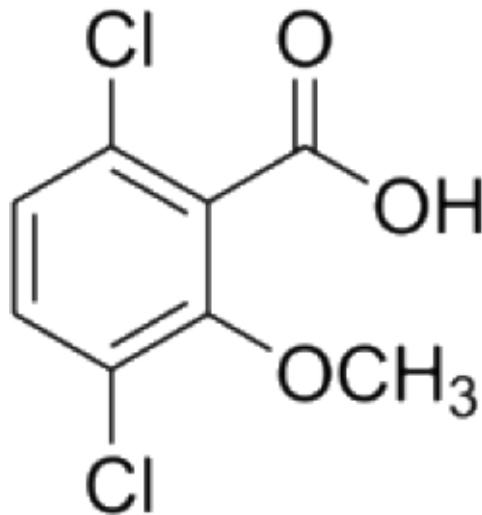
Bayer produces and markets the [LibertyLink](#) system. Using a combination of genetically-modified seeds and a different herbicide (**Liberty 280 SL**), the system also controls weeds while allowing crops to grow. The problem is that **the Bayer seeds are not resistant to dicamba**. From the [Post-Dispatch article](#):

Tom Burnham, an Arkansas grower whose farmland stretches across Mississippi County and into Missouri's Dunklin and Pemiscot counties, estimates that all of his 7,500 acres of LibertyLink soybeans have symptoms of dicamba damage. He calls off-target movement of dicamba the most serious issue he has confronted in more than three decades of farming, and thinks the problem has arisen despite correct application methods by other growers nearby.

Bayer says Liberty 280 SL is not toxic. But don't take my word for it. [Here's the official safety sheet.](#)

The Chemistry

Here's what the molecule looks like ([from Wikipedia](#)):



Dicamba molecule

Verbal description, also [from Wikipedia](#):

*Dicamba (3,6-dichloro-2-methoxybenzoic acid) is a broad-spectrum herbicide. Brand names for formulations of this herbicide include **Banvel**, **Diablo**, **Oracle** and **Vanquish**. This chemical compound is an organochloride and a derivative of benzoic acid.*

Giving equal time to Bayer, here are the active ingredients in Liberty 280 SL.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Glufosinate ammonium	77182-82-2	24.5
Alkylethersulfate, sodium salt	68891-38-3	22.1
1-Methoxy-2-propanol	107-98-2	1.0
Alkyl polysaccharide	68515-73-1	6.2

Liberty 280 SL formulation (click for larger image)