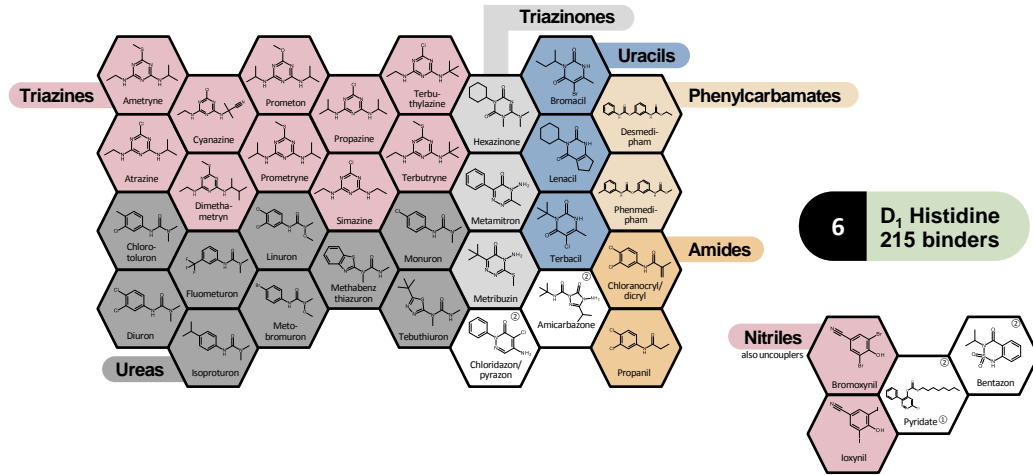


# HRAC Mode of Action Classification 2021

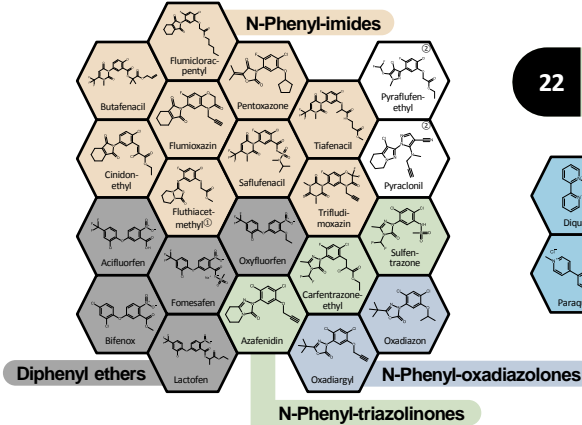
## Light Activation of ROS<sup>a</sup>

### Inhibition of Photosynthesis at PS II

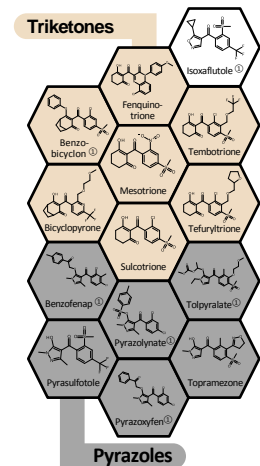
#### 5 D1 Serine 264 binders (and other non-histidine 215 binders)



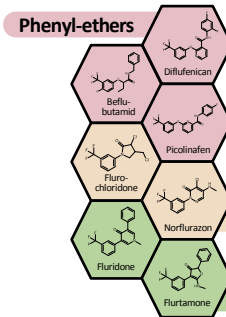
#### 14 Inhibition of Protoporphyrinogen Oxidase



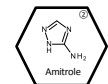
#### 27 Inhibition of Hydroxyphenyl Pyruvate Dioxygenase



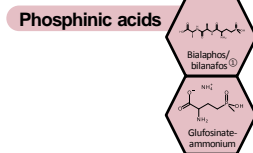
#### 12 Inhibition of Phytoene Desaturase



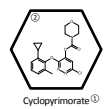
#### 34 Inhibition of Lycopene Cyclase



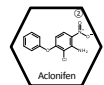
#### 10 Inhibition of Glutamine Synthetase



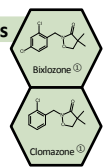
#### 33 Inhibition of Homogentisate Solaneshyltransferase



#### 32 Inhibition of Solanesyl Diphosphate Synthase

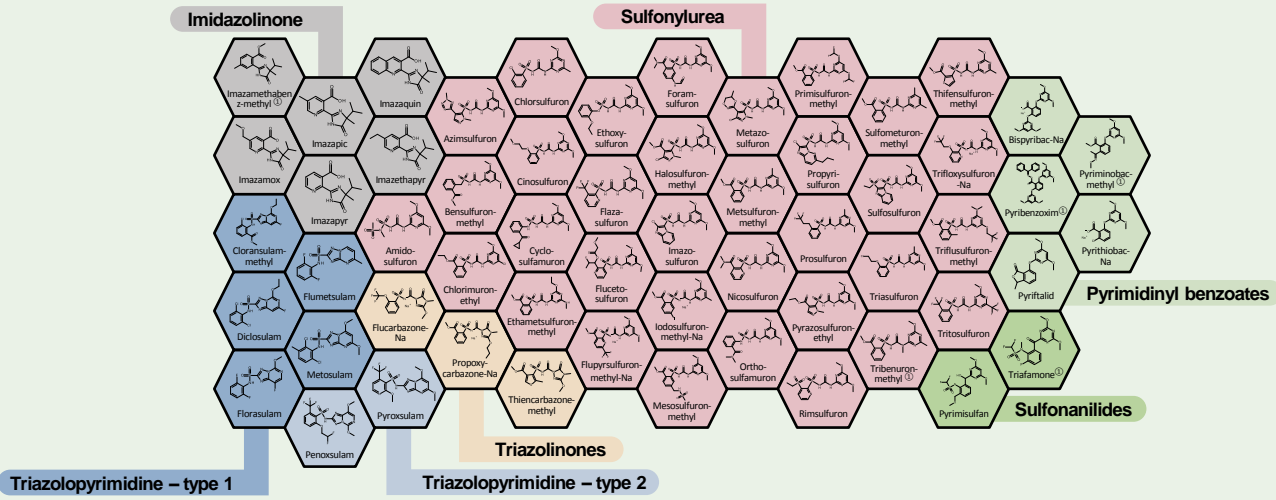


#### 13 Inhibition of Deoxy-D-Xylose Phosphate Synthase

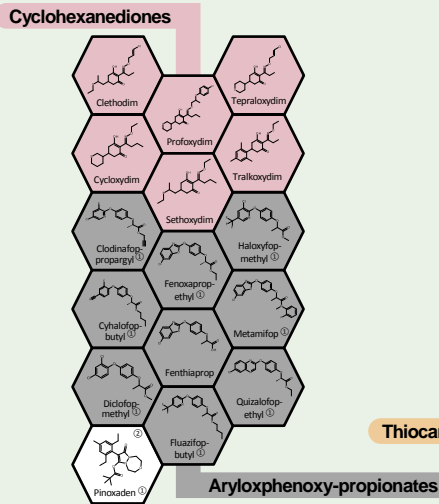


## Cellular Metabolism

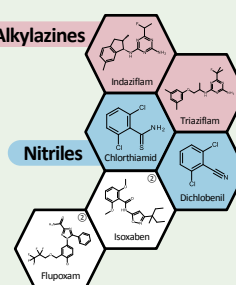
### 2 Inhibition of Acetolactate Synthase



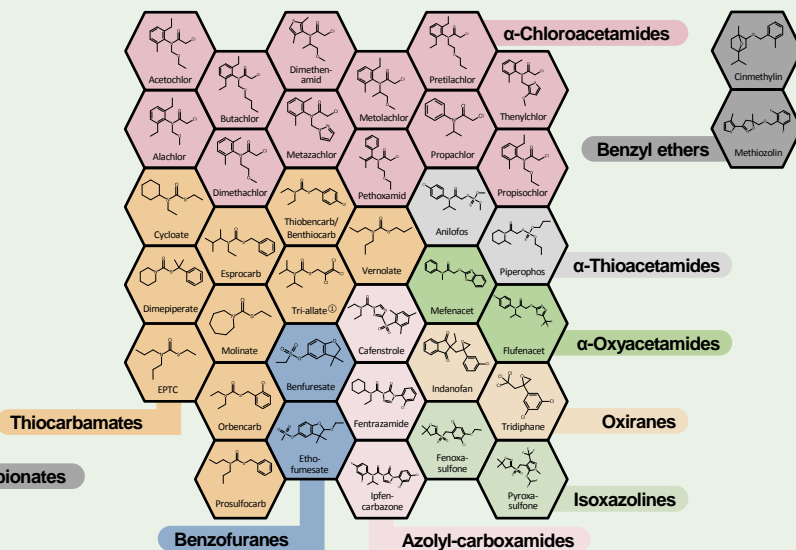
### 1 Inhibition of Acetyl CoA Carboxylase



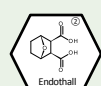
### 29 Inhibition of Cellulose Synthase



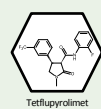
### 15 Inhibition of Very Long-Chain Fatty Acid Synthesis



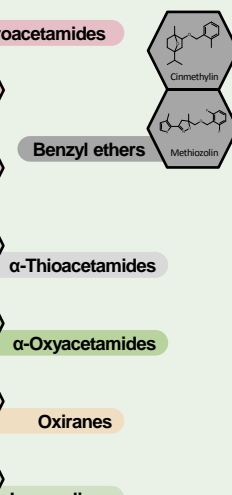
### 31 Inhibition of Serine Threonine Protein Phosphatase



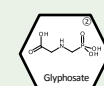
### 28 Inhibition of Dihydroorotate Dehydrogenase



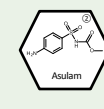
### 30 Inhibition of Fatty Acid Thioesterase



### 9 Inhibition of Enolpyruvyl Shikimate Phosphate Synthase

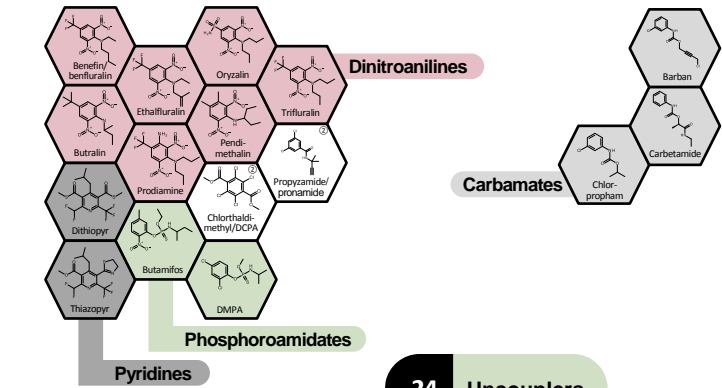


### 18 Inhibition of Dihydropteroate Synthase

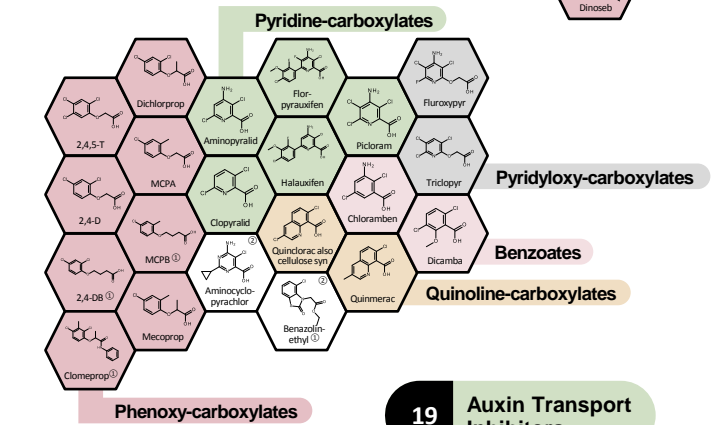


## Cell Division and Growth

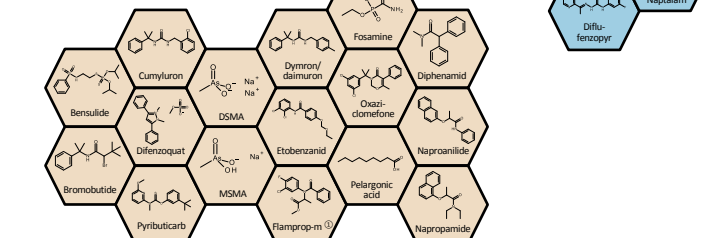
### 3 Inhibition of Microtubule Assembly



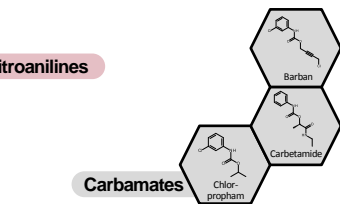
### 4 Auxin Mimics



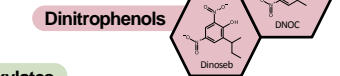
### Unknown Mode of Action



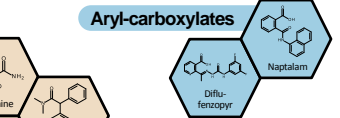
### 23 Inhibition of Microtubule Organization



### 24 Uncouplers



### 19 Auxin Transport Inhibitors



HRAC	Legacy HRAC	Mode of Action	HRAC	Legacy HRAC	Mode of Action
1	A	Inhibition of ACCase	19	P	Auxin transport inhibitors
2	B	Inhibition of ALS	22	D	PS I electron diversion
3	K1	Inhibition of microtubule assembly	23	K2	Inhibition of microtubule organization
4	O	Auxin mimics	24	M	Uncouplers
5	C1,2	Inhibition of photosynthesis PS II - Serine 264	27	F2	Inhibition of HPPD
6	C3	Inhibition of photosynthesis PS II - Histidine 215	28	none	Inhibition of dihydroorotate dehydrogenase
9	G	Inhibition of EPSP synthase	29	L	Inhibition of cellulose synthesis
10	H	Inhibition of glutamine synthetase	30	Q	Inhibition of fatty acid thioesterase
12	F1	Inhibition of PDS	31	R	Inhibition of serine threonine protein phosphatase
13	F4	Inhibition of DOXP synthase	32	S	Inhibition of solanesyl diphosphate synthase
14	E	Inhibition of PPO	33	T	Inhibition of homogentisate solaneshyltransferase
15	K3	Inhibition of VLCFAs	34	F3	Inhibition of lycopene cyclase
18	I	DHP inhibition	Ø	Z	Unknown mode of action

<sup>a</sup> Reactive oxygen species  
<sup>1</sup> Indicates pro-herbicide  
<sup>2</sup> HRAC's recommendation is not to include a chemical family name when there is one active in the family. Actives without chemical family names are indicated with a white background