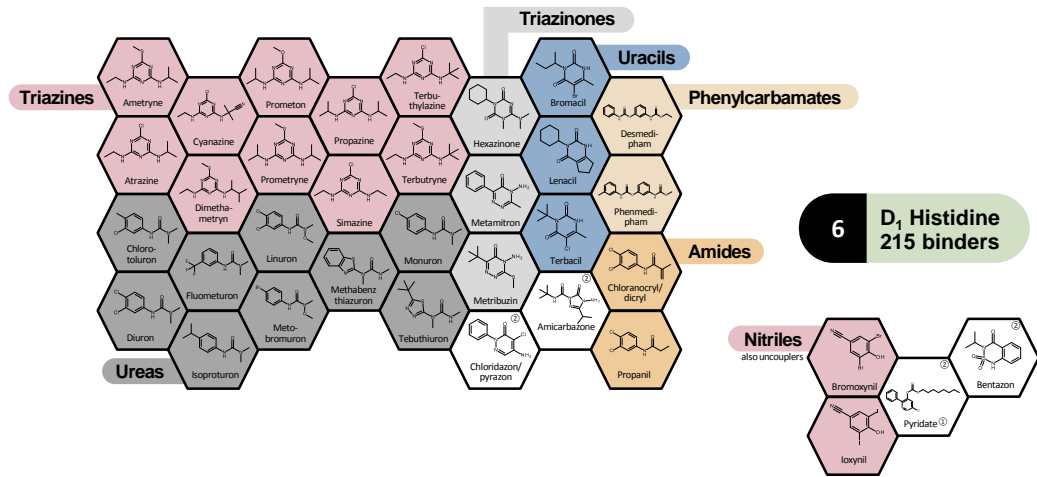


# HRAC Mode of Action Classification 2020

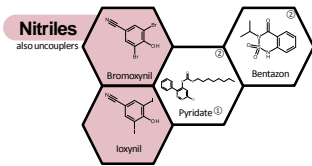
## Light Activation of ROS<sup>a</sup>

### Inhibition of Photosynthesis at PS II

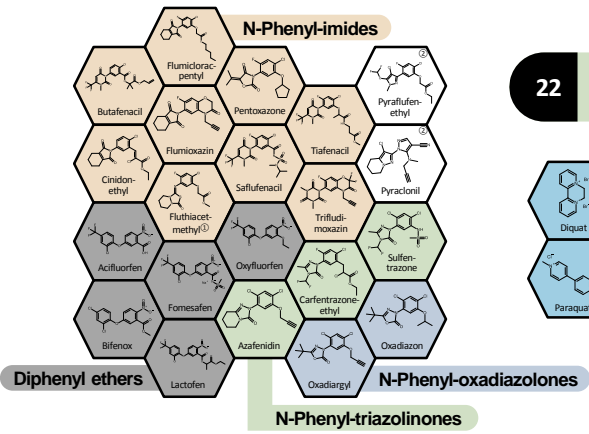
**5** D1 Serine 264 binders (and other non-histidine 215 binders)



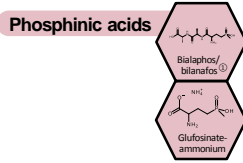
**6** D, Histidine 215 binders



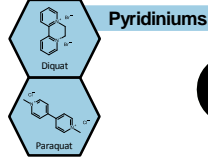
**14** Inhibition of Protoporphyrinogen Oxidase



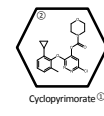
**10** Inhibition of Glutamine Synthetase



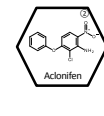
**22** PS I Electron Diversion



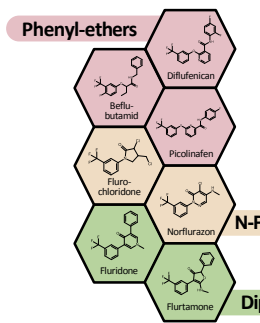
**33** Inhibition of Homogentisate Solanelyltransferase



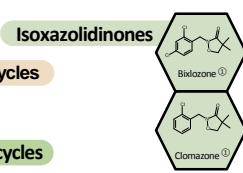
**32** Inhibition of Solanelyl Diphosphate Synthase



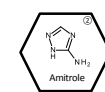
**12** Inhibition of Phytoene Desaturase



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

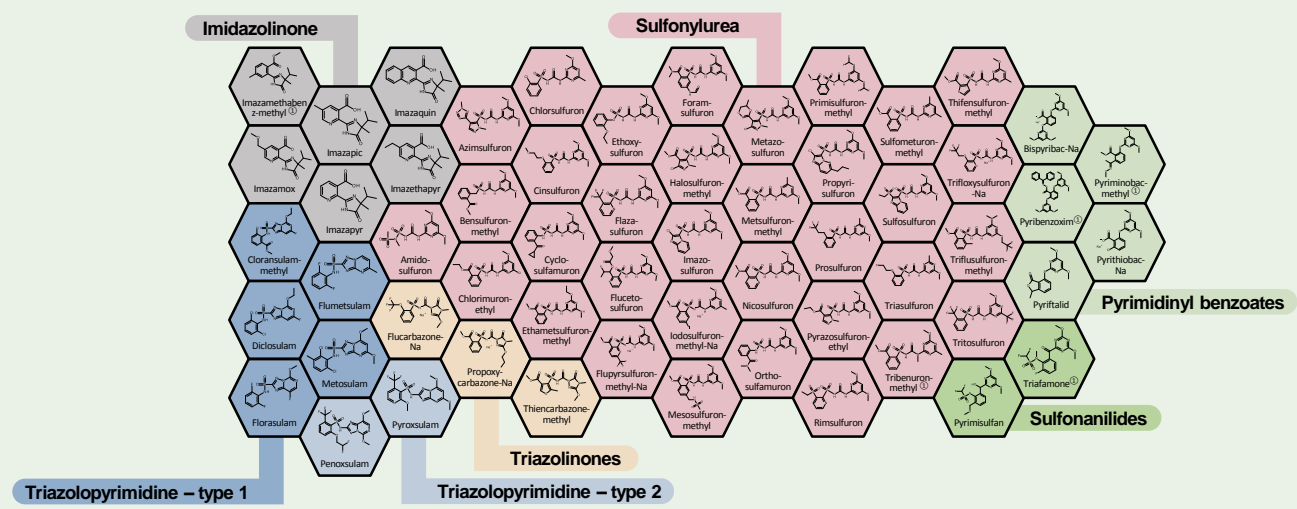


**34** Inhibition of Lycopene Cyclase

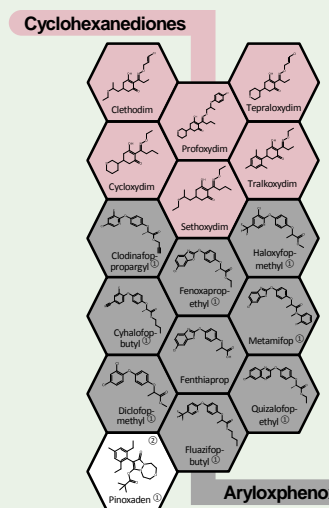


## Cellular Metabolism

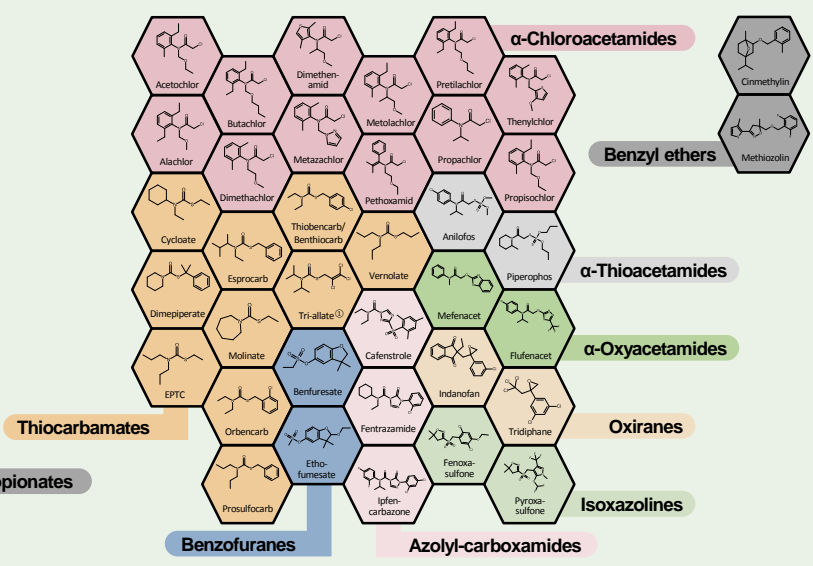
**2** Inhibition of Acetolactate Synthase



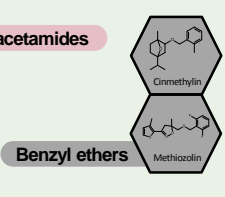
**1** Inhibition of Acetyl CoA Carboxylase



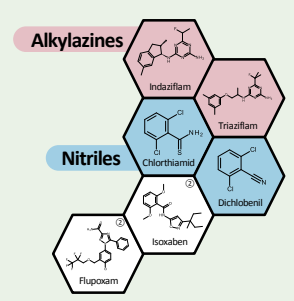
**15** Inhibition of Very Long-Chain Fatty Acid Synthesis



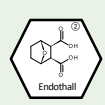
**30** Inhibition of Fatty Acid Thioesterase



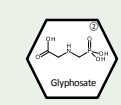
**29** Inhibition of Cellulose Synthesis



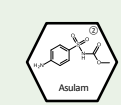
**31** Inhibition of Serine Threonine Protein Phosphatase



**9** Inhibition of Enolpyruvyl Shikimate Phosphate Synthase

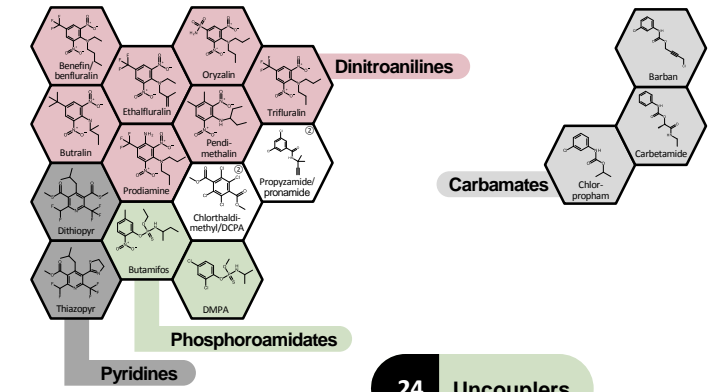


**18** Inhibition of Dihydropteroate Synthase

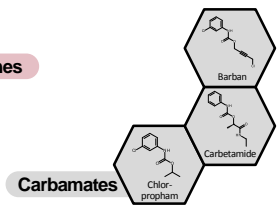


## Cell Division and Growth

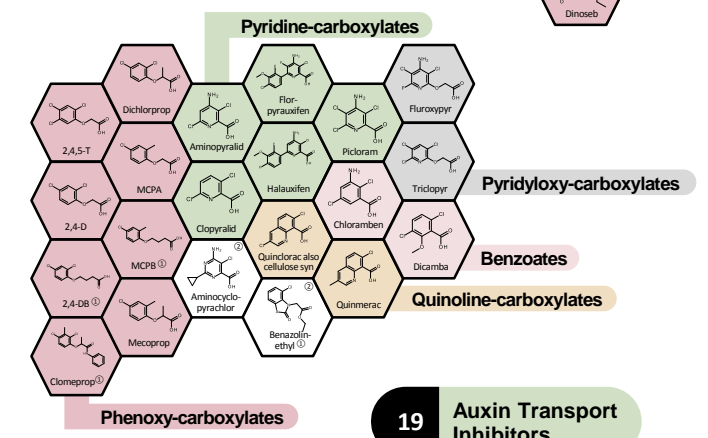
**3** Inhibition of Microtubule Assembly



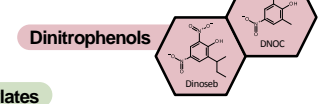
**23** Inhibition of Microtubule Organization



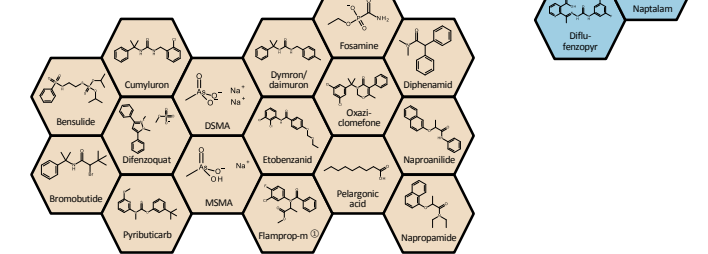
**4** Auxin Mimics



**24** Uncouplers



**0** Unknown Mode of Action



HRAC & WSSA	Legacy HRAC	Inhibition	HRAC & WSSA	Legacy HRAC	Inhibition
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 cellulose synthesis
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	29	L	Inhibition of cellulose synthesis
9	G	Inhibition of EPSP synthase	30	Q	Inhibition of fatty acid thioesterase
10	H	Inhibition of glutamine synthetase	31	R	Inhibition of serine threonine protein phosphatase
12	F1	Inhibition of PDS	32	S	Inhibition of solanelyl diphosphate synthase
13	F4	Inhibition of DOXP synthase	33	T	Inhibition of homogentisate solanelyltransferase
14	E	Inhibition of PPO	34	F3	Inhibition of lycopene cyclase
15	K3	Inhibition of VLCFAs	0	Z	Unknown mode of action
18	I	DHP inhibition			

<sup>a</sup> Reactive oxygen species  
 ① Indicates pro-herbicide  
 ② 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