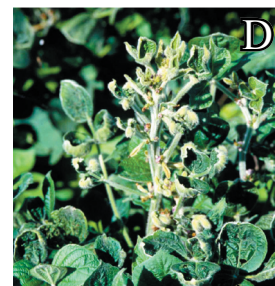
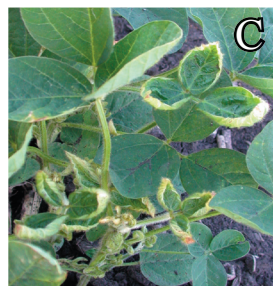


Quick Guide to Herbicide Injury on Soybean



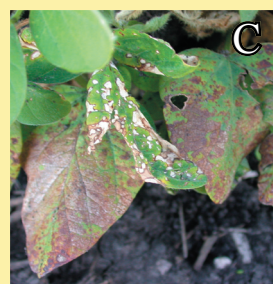
Plant Growth Regulators

Ex. dicamba, 2,4-D, 2,4-DB, and clopyralid



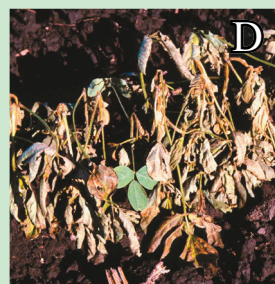
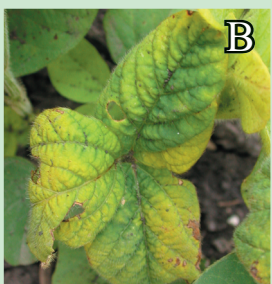
Protox (PPO) Inhibitors

Ex. lactofen, fomesafen, carfentrazone, and acifluorfen



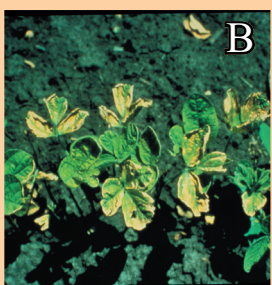
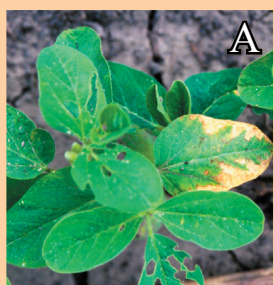
Amino Acid Synthesis Inhibitors

Ex. imazethapyr, clo-ransulam, chlorimuron, and glyphosate



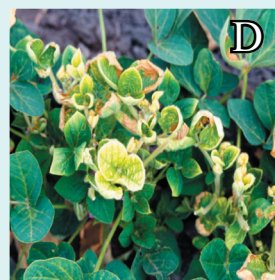
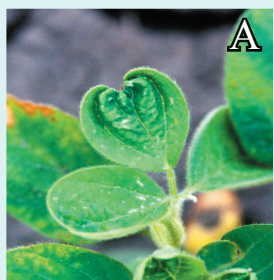
Photosystem I and II Inhibitors

Ex. atrazine, bentazon, metribuzin, and paraquat



Others

Ex. trifluralin, quiza-lofop, glufosinate, mesotrione, acetochlor, and S-metolachlor



Images are identified on the back of sheet.

Quick Guide to Herbicide Injury on Soybean

Symptoms can vary depending on the respective herbicide and the route (soil or foliar) of soybean exposure to the herbicide.



Plant Growth Regulator

Images:

- A) dicamba
- B) dicamba
- C) clopyralid
- D) severe cupping

Injury Symptoms:

Injury is first noticed on newly developed tissue or leaves.
Stunting and inhibition of roots; improper root development.
Translocated in xylem and phloem.
Stunted and cupped leaves; strapping of veins; parallel venation.
Twisting of stems and petioles (epinasty).

PPO Inhibitor

Images:

- A) fomesafen
- B) sulfentrazone
- C) carfentrazone
- D) flumioxazin

Injury Symptoms:

Little translocation following foliar application.
Contact leaf burn from foliar application.
Leaf crinkling and plant stunting.
Injury typically increased with humidity and temperature.
Stem lesions from soil-applied treatments.

Amino Acid Inhibitor

Images:

- A) thifensulfuron
- B) chlorimuron
- C) prosulfuron
- D) glyphosate

Injury Symptoms:

Translocated in xylem and phloem.
Stunted plants.
Slow development of symptoms following foliar applications.
Leaf yellowing or chlorosis of leaf margins.
Purple to dark red veination on the underside of leaf.
May resemble potassium deficiency of soybean cyst nematode.

Photosystem I and II Inhibitor

- ### Images:
- A) metribuzin
 - B) paraquat
 - C) bentazon
 - D) atrazine

Injury Symptoms:

Little (xylem) to no translocation following foliar applications.
Triazines: leaf margin burn and interveinal chlorosis; older leaves affected first.
Paraquat: Water-soaked early; chlorosis and necrosis of leaf tissue; exposure via drift occurs as speckling; symptoms develop quickly.
Others: Necrotic spots, speckled chlorosis, or bronzing.
Symptoms often increase in severity with increased humidity and air temperature.

Others

Images:

- A) S-metolachlor
- B) quizalofop
- C) isoxaflutole
- D) mesotrione

Injury Symptoms:

Pigment Inhibitors: Bleaching and whitening of plants; eventual necrosis.
Chloroacetamides: Leaf crinkling and drawstring.
Thiocarbamates: Leaf crinkling and puckering; bud-seal.
Dinitroanilines: Swollen and cracked hypocotyls; stunted plants; crinkled leaves;
Callus tissue from soil splash; may cause lodging and breakage; stubby roots.