

# Protect your wheat from herbicide resistance

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wheat

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# Herbicide resistance in cereals



Green Foxtail

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- Resistance = weeds not controlled by rate of herbicide which would normally give effective control
- 13 herbicide resistant broadleaf and grass weed species found in U.S. wheat crops
- Resistance develops through:
  - Overuse of the same herbicide mode of action (MOA)
  - Reduced herbicide rates
  - Lack of cropping diversity
  - Genetic diversity in weed populations
  - Movement of resistant weed seed through machinery, irrigation water, manure, etc.

# Managing herbicide resistance



Wild Oat

- Herbicide resistance:
  - Increases costs and management time
  - Reduces yield, land values and options for weed control
- To reduce herbicide resistance:



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# Implement best practices to combat herbicide resistance

 Axial<sup>®</sup>XL

 Discover<sup>®</sup>NG

 Sierra<sup>™</sup>

 Axial<sup>®</sup>Star

 Amber<sup>®</sup>

 Rave<sup>®</sup>

 Orion<sup>®</sup>

 Pulsar<sup>®</sup>

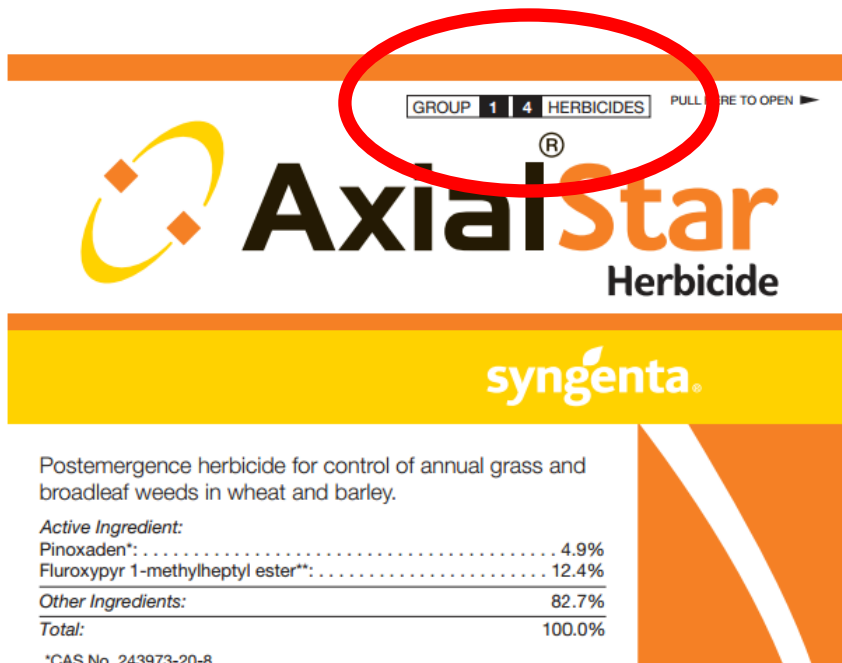
 Peak<sup>®</sup>

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- Follow label instructions and use the full recommended herbicide rate
- Diversify herbicide MOAs
- Control weeds by applying an effective herbicide



# Diversify herbicide MOAs



- Understand how MOAs are classified
- Check herbicide label for MOA
- Ensure you're alternating MOAs consistently



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# Diversify crops, herbicides to manage resistance



- Diversify crop management practices
- Rotate wheat with a broadleaf crop
- Alternate crops to allow for the use of different chemistries



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# Manage weed escapes, prevent an increase in next year's weed seed bank

 Touchdown<sup>®</sup>CT2

 Gramoxone<sup>®</sup>SL 2.0



Kochia

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- Seed bank = the natural storage of seeds, often dormant, within the soil
- Tips to manage the seed bank
  - Start with a clean field
  - Recognize the issue
  - Scout early and often
  - Clean equipment
  - Alternate tillage practices
  - Do not allow weeds to reproduce by seed or to proliferate vegetatively
  - Apply a burndown herbicide like Touchdown<sup>®</sup> CT2 or Gramoxone<sup>®</sup> SL 2.0

# Manage herbicide resistance all year long



Cheatgrass

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- Manage fields from seed to harvest
- Keep accurate field maintenance records
- Evaluate best herbicide strategies to use throughout the season





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