Dodhylex™ active

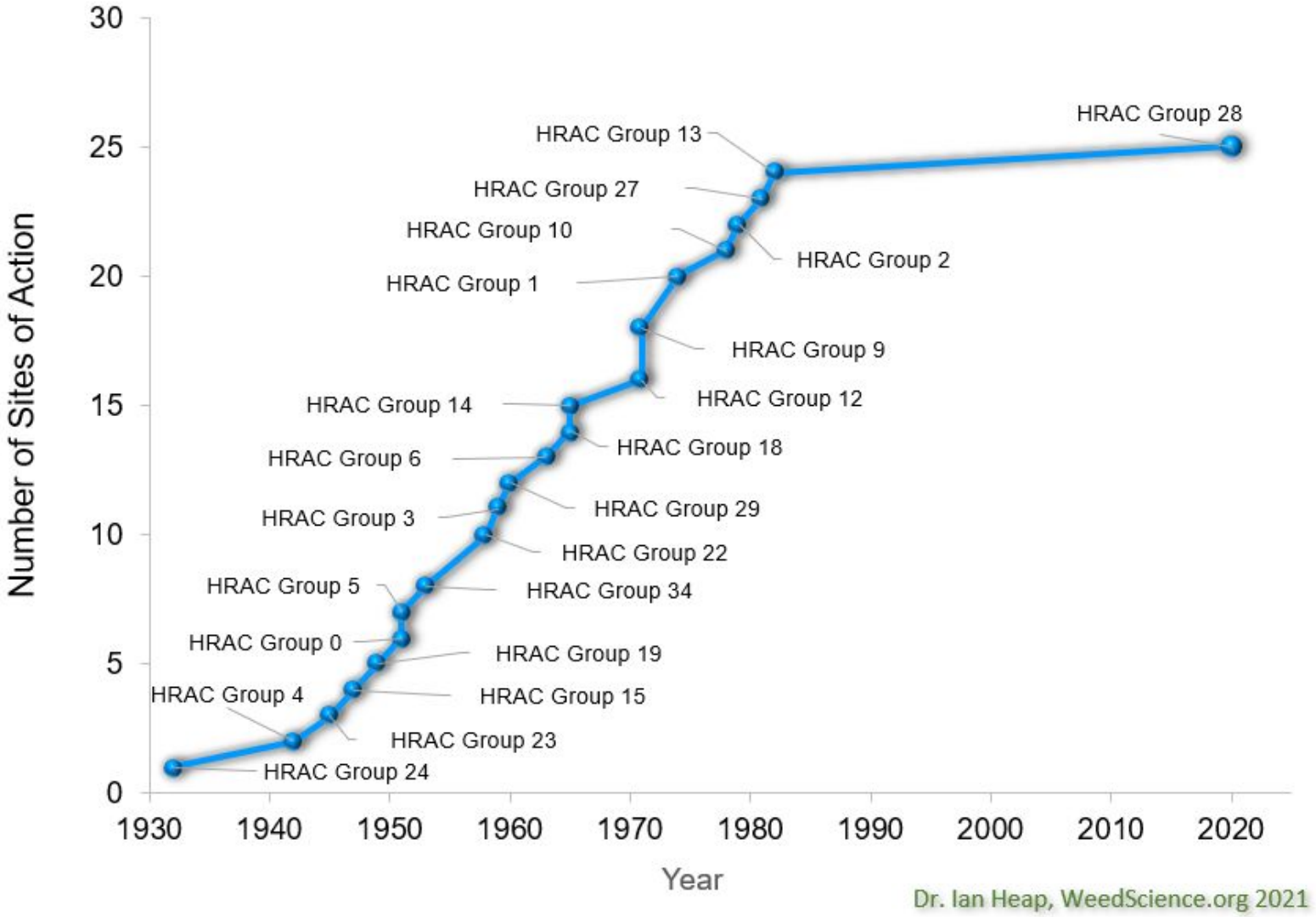
# A Novel Mode of Action Inhibiting Dihydroorotate Dehydrogenase (DHODH) Enzyme for Effective Management of Herbicide-Resistant Weeds Globally

*The first new mode of action herbicide in 30 years*

Scott Swanson, NA Product Development Mgr
scott.swanson@fmc.com
IR-4, Industry Technology Session
February 12, 2025

FMC An Agricultural Sciences Company

# Dodhylex™ active




Dodhylex™ active

# Dodhylex™ active – Features & Benefits


Richmond, CA. Early Watergrass, Late Watergrass, and Bearded Sprangletop
Photo: T. Bond

- **First new mode of action herbicide in over 3 decades**
  - **Dodhylex™ active** (common name *tetflupyrolimet*)
    - Currently no other HRAC group 28 herbicides
  - **Keenali™ Complete powered by Dodhylex™ active** – Mid-South Rice Market
  - **Keenali™ GR powered by Dodhylex™ active** – California Rice Market
- **Outstanding residual control** of key grass weeds
  - Excellent foundation for any weed management program in rice such as *echinochloa*, *leptochloa*, *setaria* and other grass species.
- **Excellent crop safety** to direct-seeded & water-seeded rice (PRE and POS)

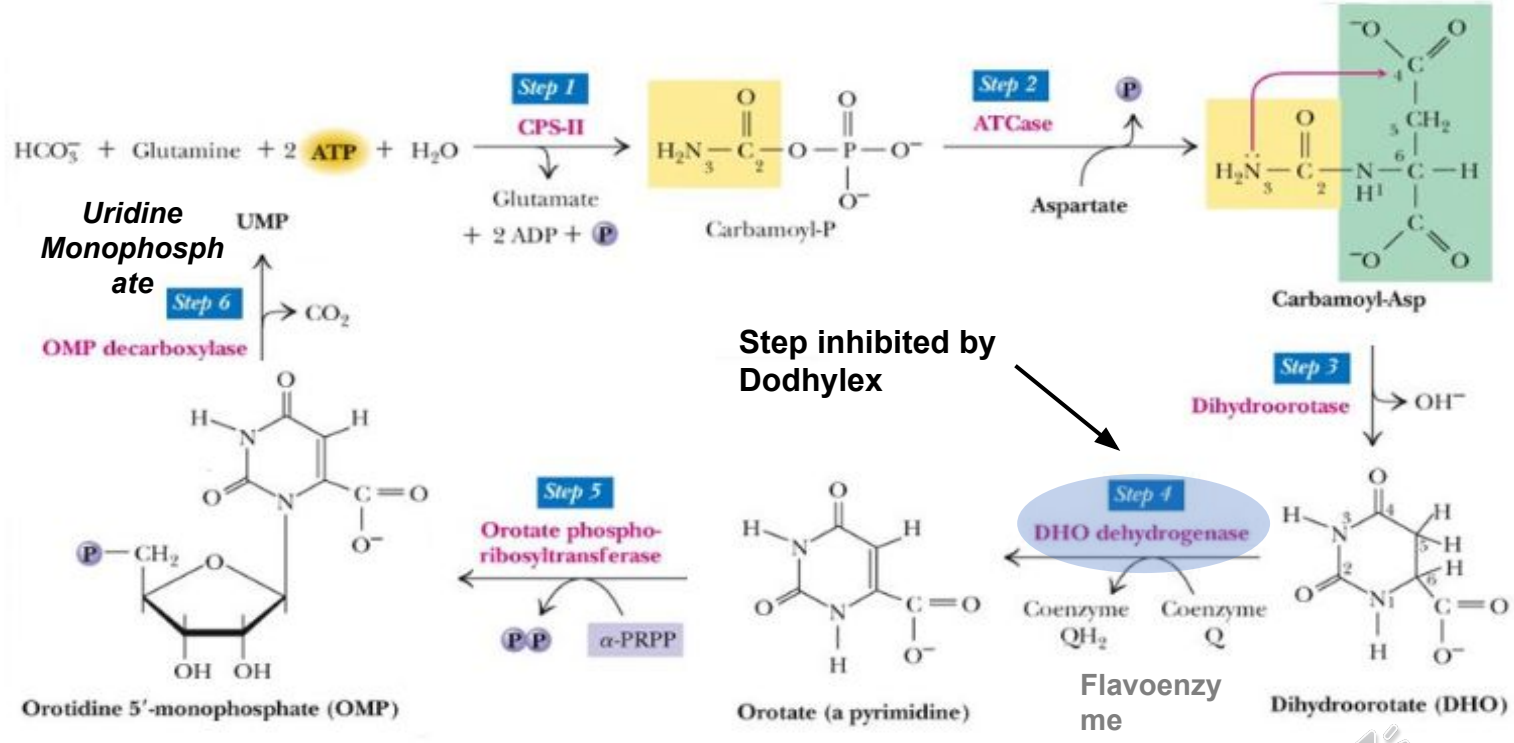
FMC An Agricultural Sciences Company

# Dodhylex™ active – A Novel Mode-of-Action

## Dihydroorotate Dehydrogenase (DHODH)

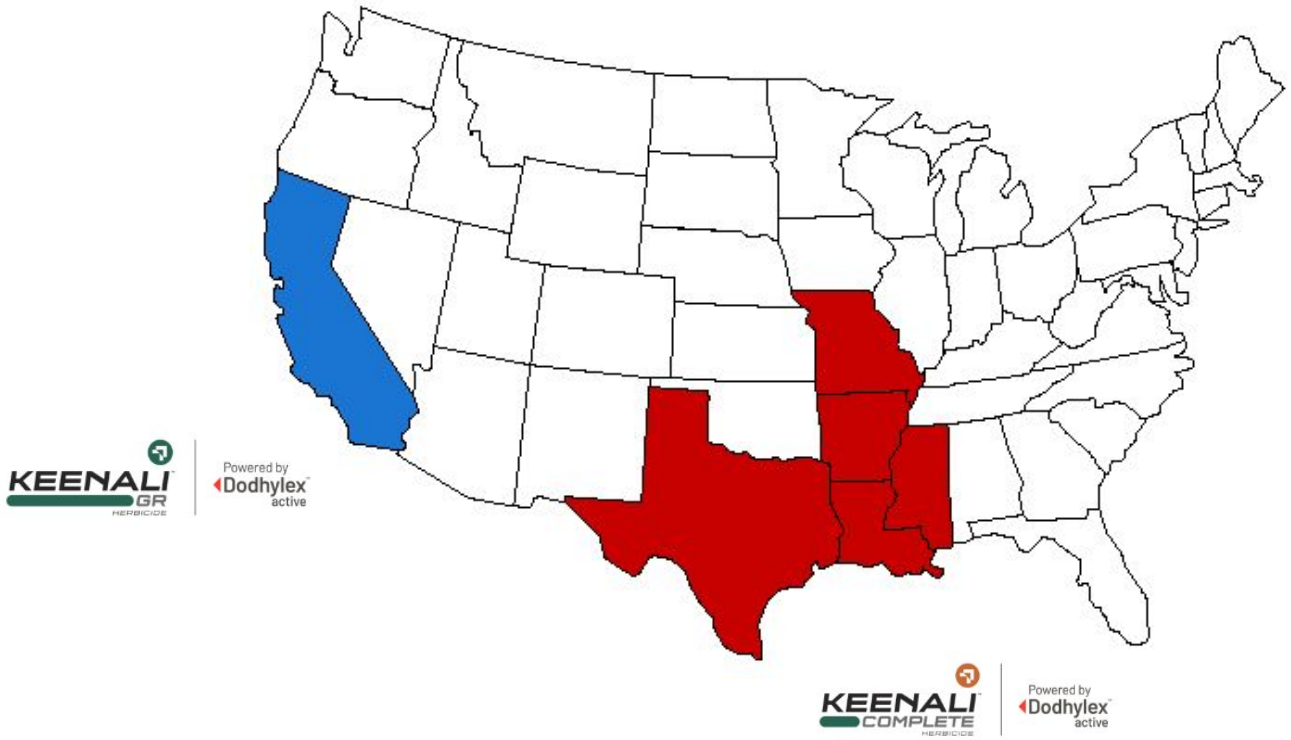
*4th Step of de Novo Pyrimidine Biosynthesis Pathway*

- Blockage of pyrimidine biosynthesis interrupts normal cellular function and results in the **cessation of plant growth/seedling emergence**
- Because the *de novo* pathway is **energetically expensive**, cells utilize it only when they are rapidly growing and dividing
- Mature cells typically meet metabolic needs by salvaging processes that do not utilize the DHODH enzyme
- **The target of Dodhylex™ active is rapid growth and cell division**




Chapter 26: The Synthesis and Degradation of Nucleotides Biochemistry (Reginald Garrett and Charles Grisham (2009)

# Dodhylex™ active – History




8 Years of trial work in California and the Mid-South including:

- FMC collaboration with University and key rice consultants
- 316 field trials evaluating efficacy, crop response, and off-target effects (2500+ Globally)
- Expected EPA approval **Q4 2026**
  - FMC working towards registration in all major rice-growing countries
  - **Not currently registered for sale in any country**
  - Other pending registrations of Dodhylex™ active in India, Brazil, Philippines, Columbia, South Korea, Peru, and Taiwan

***Label submitted to EPA in November of 2023**

***Label submitted to CADPR for Concurrent Review in November 2024**

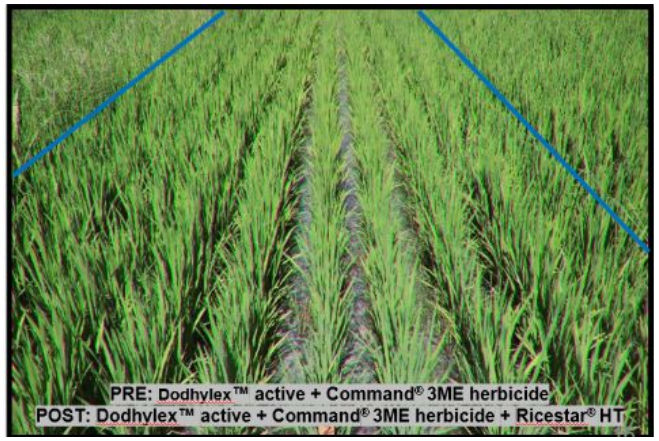
# Dodhylex™ active – Resistance Management

## FMC is committed to managing weed resistance

- **Dodhylex™ active considered a low-risk herbicide for weed resistance development**
  - Internal genomic testing
  - Novel MOA
  - Primary global target of preemergence application timing

- Dodhylex™ active will serve as an **excellent foundation** for any weed management programs
  - Robust resistance profile
  - Residual control early in crop development
  - **Controls herbicide resistant grass weeds** that have developed higher tolerance to:
    - ALS, ACCase
    - *Glyphosate, Quiniclorac, Propanil*
    - Other Commercial herbicides

- **Dodhylex™ active should be part of an integrated weed management program** incorporating cultural, biological, and other chemical management practices to maintain long-term resistance management and sustainability


# Dodhylex™ active – Summary

- **NEW mode of action –** first in over 3 decades!
  - Dihyrdoorotate Dehyrdogenase (DHODH) Inhibitor
- **Excellent residual control** of watergrass, barnyardgrass, foxtails, and sprangletops
- **Excellent crop safety**
  - **Flexible rotation -** Check label for specific intervals
  - **Minimal off-target risk** to adjacent crops
- **Label submitted to EPA** (November 2023) and **CA DPR** (November 2024) for concurrent review.
  - Registration Dates
    - Federal: 2026-2027
    - California: 2027-2028

Dunnigan, CA
63 DA Seeding
58 DA 2nd App
Species: **Bearded Sprangletop, Watergrass**

# We appreciate you!

scott.swanson@fmc.com

Dodhylex™ active (tetflupyrolimet) is not registered for sale or use in the United States or other jurisdictions. No offer for sale, sale, or use of any such products is permitted prior to issuance of the required US EPA and state registrations, or other applicable regulatory authority registrations.

FMC An Agricultural Sciences Company