

# Echo® Chlorothalonil Fungicides vs. Asian Soybean Rust

Echo® is a registered trademark of Sipcam Agro USA, Inc.

**John R. French, Ph.D.**  
**Technical Director**



**SIPCAM AGRO USA, INC.**

# Echo 720

[6 lbs a.i./gallon  
liquid SC]

# Echo Zn

[4.17 lbs a.i./gallon  
liquid SC]

# Echo 90DF

[90% water-dispersible  
granule]

PEEL BACK BOOK HERE AND RESEAL AFTER OPENING



**AGRICULTURAL FUNGICIDE**

ACTIVE INGREDIENT	2.00%
OTHER INGREDIENTS	98.00%
TOTAL	100.00%

**KEEP OUT OF REACH OF CHILDREN  
WARNING / AVISO**

Si usted o alguien que usted conoce ha sido expuesto accidentalmente a este producto, llame al número de toxicología al 1-800-527-0800.

**FIRST AID**

**IF INHALED:**

- Move person to fresh air.
- If person is not breathing, call 911 or a doctor. Administer artificial respiration. Do not use mouth-to-mouth if you are not trained to do so.
- Call a poison control center or doctor for further treatment advice.

**IF ON SKIN OR CLOTHING:**

- Wash thoroughly with soap and plenty of water.
- Call a poison control center or doctor for further treatment advice.

**IF IN EYES:**

- Wash eyes thoroughly with clean water. Hold eyelids open to allow water to reach the back of the eye.
- Call a poison control center or doctor for further treatment advice.

**IF SWALLOWED:**

- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to someone who is unconscious.

**Emergency phone numbers:**

**NOTES TO PHYSICIANS:** Fungicide may cause skin irritation. If irritation occurs, stop use of product. Wash skin with soap and water. If irritation persists, consult your physician.

**Net Contents: 2.5 gallons (8.45 liters)**

  
 SIPCAM AGRO USA, INC.  
 300 COLONIAL CENTER DRIVE, SUITE 200  
 ROSWELL, GA 30075  
 ECHO is a registered trademark of SIPCAM AGRO USA, INC.

  
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**AGRICULTURAL FUNGICIDE**

ACTIVE INGREDIENT (Chlorothalonil) (Inert ingredient) (ECHO Zn)	25.4%
OTHER INGREDIENTS	74.6%
TOTAL	100.0%

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**AGRICULTURAL FUNGICIDE**

ACTIVE INGREDIENT (Chlorothalonil)	90.0%
OTHER INGREDIENTS	10.0%
TOTAL	100.0%

**KEEP OUT OF REACH OF CHILDREN  
DANGER/PELIGRO**

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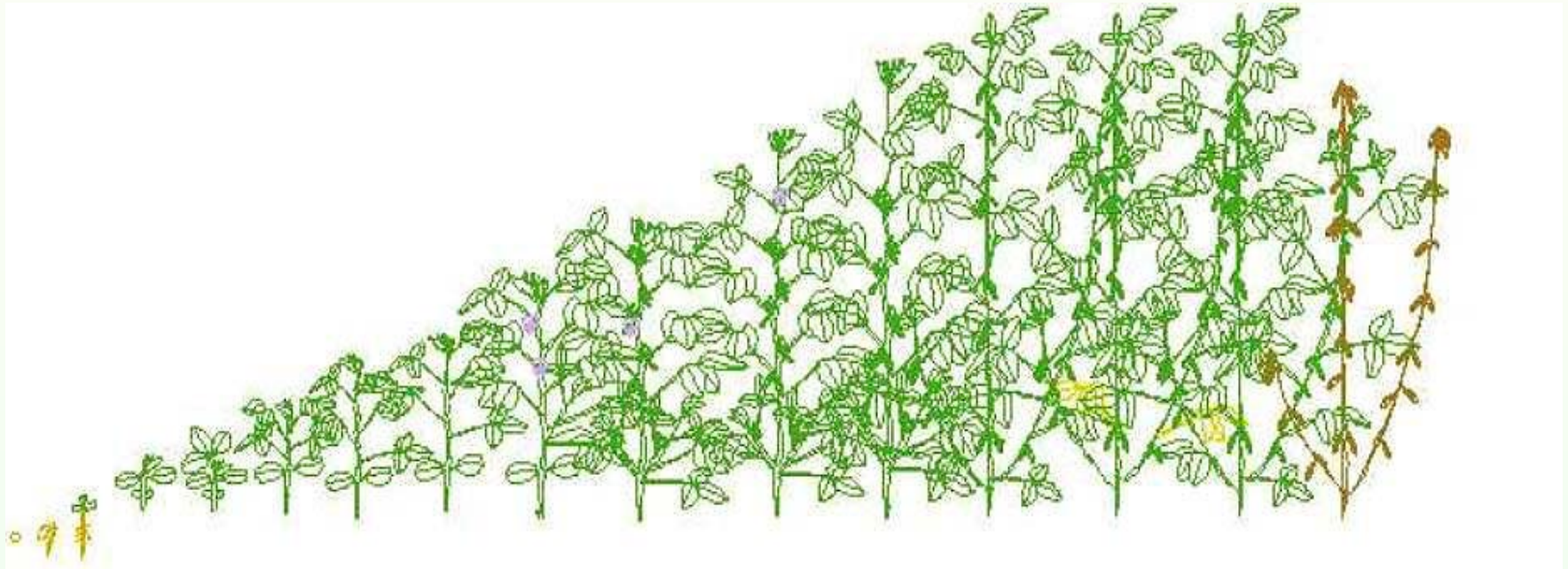
  
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# Echo Chlorothalonil Products

- Re-entry interval 12 hours
- Preharvest interval 42 days
- Echo products may be applied until R5 on most soybeans
- Application rates 0.75 to 1.88 lbs a.i./acre on soybeans
- Rate depends upon intended number of applications, disease severity



# Soybean Growth Stages



**S VE**

Vegetative

**V5**

**R1**

**R3**

**R5**

**R6**

**R8**

Early flower -- Pod set – seed fill

Seed maturation - Harvest

**Keep the following concepts in mind:**

- 1. Rust infects from the bottom up**
- 2. Rust cycles (generations) every 7-10 days**
- 3. Reduce rust impact by slowing down the epidemic**



# How to Use ECHO vs. ASR

- **Spray early –  
V5 to R1**
- **2<sup>nd</sup> application with  
an effective triazole  
fungicide per Sec. 18**
- **Get good coverage**

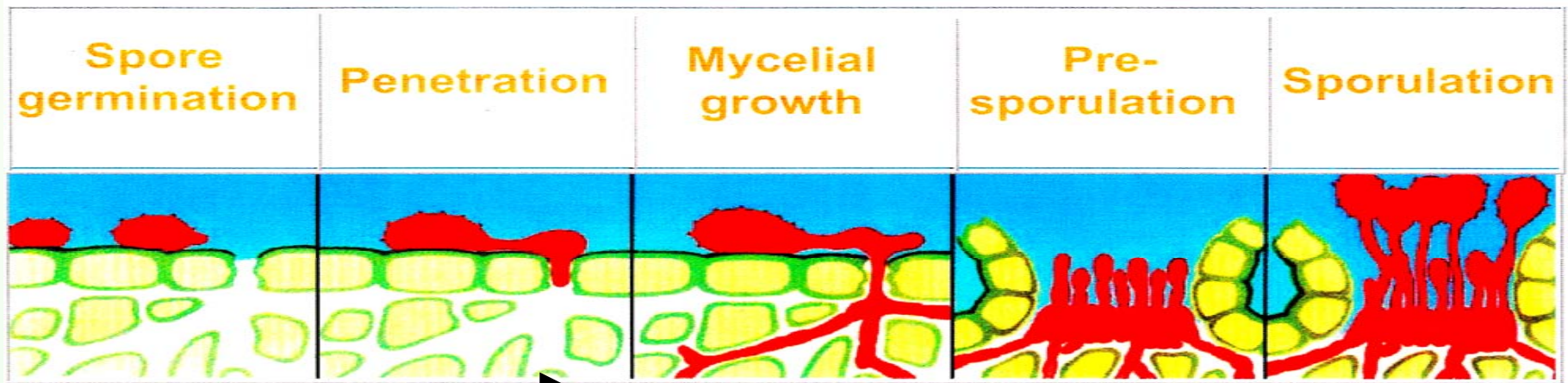


# Chlorothalonil Duration of Disease Control

- Half-life >65 days under sunlight, dry condition
- Stable in water at all ambient pH
- Degrades principally in soil, aquatic sediments
  
- Long residual activity on soybean, expected for duration of leaf & stem susceptibility
  
- Repeat application(s)
  - Protect new growth (chlorothalonil is not systemic)
  - Not for increased control on previously treated plant structures



# Chlorothalonil – Period of Fungicidal Activity



**Effective control**

# Percent Defoliation at Harvest

## Soybean Rust Trial, Gwebi, Zimbabwe 2004-05

