

Complete directions for use

# Collego™

Selective Postemergent Herbicide  
Biological Weed Control Agent

For Control of Northern Jointvetch  
(curly indigo) in Rice and Soybean



LIVING FUNGAL SPORES  
STORE AT TEMPERATURES OF 40° TO 80° F

Collego is a two component product.

- Component A: A fungal spore rehydrating agent.
- Component B

BEST DOCUMENT AVAILABLE

**ACTIVE INGREDIENT**

*Colletotrichum gloeosporioides* f. sp.  
*aeschyromene* ATCC 20358

**INERT INGREDIENTS**

15% w/w\*

85% w/w

Total 100% w/w

\*Contains at least 75.7 x 10<sup>10</sup> viable fungal spores

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

**PRECAUTIONARY STATEMENT**

**HAZARD TO HUMANS AND DOMESTIC ANIMALS.** Caution Causes slight eye irritation. Avoid contact with eyes or clothing.

**STATEMENT OF PRACTICAL TREATMENT.** If in Eyes: Flush with plenty of water. Get medical attention if irritation persists. Wash thoroughly with soap and water after handling.

**ENVIRONMENTAL HAZARDS.** Do not apply directly to water except as indicated in the directions for use. Do not contaminate water by cleaning of equipment or disposal of wastes.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**GENERAL INFORMATION**

Collego is a selective postemergent mycoherbicide which is a specific biological weed control agent. Postemergent applications of Collego will selectively control northern jointvetch (curly indigo) *Aeschynomene virginica* (L.) B.S.P. in rice (*Oryza sativa* L.) and soybean [*Glycine max* (L.) Merr]. Collego should be applied to emerged northern jointvetch plants that are from 8 to 24 inches tall and have not reached the bloom stage. Collego will cause disease lesions that will completely encircle the stems of the northern jointvetch plants. The fungus primarily infects the stems of the weed but it also infects the petioles and leaflets.

Diseased plants become limp, they may collapse. Plants not killed by Collego are stunted, unthrifty, unable to compete with the rice or soybean and will not be able to seed. Death of northern jointvetch plants may not occur for five (5) weeks after application.

Collego is a two component product. Collego Component A consists of three 1-quart bottles containing a water soluble spore rehydrating agent that allows the spores to take up water prior to germination. Collego Component B consists of three bags that contain a water suspendible dried fungal spore formulation of *Colletotrichum gloeosporioides* f. sp. *aeschyromene* ATCC 20358. Both components are packaged in a 5 gallon plastic mixing container with a lid and stirring paddle.

**APPLICATION RATE**

Collego Component A (1 quart) and Component B (1 bag) will treat 10 acres.

Acreage to be Treated	Amount Required	
	Component A	Component B
10	1 quart	1 bag
20	2 quarts	2 bags
30	3 quarts	3 bags

19

**RECOMMENDATIONS FOR CONTROL OF NORTHERN JOINTVETCH (CURLY INDIGO)**

CROP*	WHEN TO APPLY COLLEGO	REMARKS
RICE	At any vegetative stage of rice growth if the northern jointvetch is at least 8 inches tall. Rice fields should be flooded before application.	Do not apply <i>Collego</i> after rice heads emerge from the boot. Spraying at this time will not completely prevent seed production of the northern jointvetch.
SOYBEAN	After the soybean plants begin to flower if the northern jointvetch is at least 8 inches tall. Soybean fields should be irrigated just prior to application.	Do not apply <i>Collego</i> after pods form on the lower nodes of the soybean plants. Spraying at this time will not completely prevent seed production of the northern jointvetch.

\**Collego* is exempt from the requirement of a tolerance for residues in or on rice and soybean when used according to these directions for use.

**TIMING**

Apply *Collego* when the leaves of northern jointvetch are moist and can be expected to remain so for at least 12 hours. Following *Collego* application, free moisture or relative humidities above 80% and air temperatures of approximately 80° F for at least 12 hours are necessary for development of the highest degree of infection. These conditions usually prevail during the evening in rice and soybean fields. Soybean fields should be irrigated just prior to application. Rice fields should be flooded.

**CAUTION: DO NOT APPLY *Collego* DURING PERIODS WHEN RICE AND SOYBEANS ARE UNDER STRESS FOR MOISTURE OR WHEN DRYING CONDITIONS ARE LIKELY TO OCCUR. DO NOT APPLY *Collego* TO NORTHERN JOINTVETCH PLANTS PREVIOUSLY TREATED WITH PHENOXY HERBICIDES. DO NOT APPLY FUNGICIDES FOR AT LEAST THREE WEEKS FOLLOWING *Collego* APPLICATION.**

**APPLICATION EQUIPMENT**

Chemical pesticide residues that remain in the spray tank and boom may kill the live *Collego* spores. Therefore, prior to use of *Collego*, thoroughly clean the spray tank, boom, nozzles and screens with an activated charcoal water suspension. Prepare activated charcoal powder following manufacturer's recommendations for use.

Thoroughly rinse the spraying system to remove all the charcoal water suspension prior to the application of *Collego*.

Be sure the sprayer has been calibrated to deliver proper spray gallonage with a uniform spray pattern as thorough coverage of the northern jointvetch leaves and stems with *Collego* is essential. Check frequently during application for output of desired gallonage. Use proper nozzle discs and nozzle arrangements on the spray boom. Use 50-mesh or coarser screens in strainers, nozzles and suction units. Clean nozzles and screens frequently. Wind may cause uneven coverage. Do not apply when wind velocity is greater than 10 miles per hour.

**FILLING THE SPRAY TANK**

Fill the spray tank one-half full with water, add the *Collego* spore suspension (see Spore Preparation below) to the tank and rinse the mixing container, finish filling the tank to the desired spray volume. Agitate the spores and water to maintain the spore suspension. For best results, maintain continuous agitation during spraying.

**SPORE PREPARATION**

*Collego* Component B, dried fungal spores, must be rehydrated just prior to use. The sequence of the steps that must be used in rehydrating the spores for 10 acres

- Step 1 Pour the contents from the 1 quart container of *Collego* Component A into the 5 gallon mixing container.
- Step 2 Completely fill the *Collego* Component A container with water and empty into mixing container.
- Step 3 Repeat Step 2 (Final concentration is 1 part rehydrating solution and 2 parts water).
- Step 4 Vigorously stir until *Collego* Component A is completely dissolved.
- Step 5 Add one bag Component B and stir with mixing paddle until the spores are completely wet and suspended.
- Step 6 The suspension of spores may then be added to the spray tank. Rinse the mixing container to remove all of the spore suspension.
- Step 7 Dilute the spore suspension in the spray tank to the desired volume.

**SPRAY APPLICATION**

For best results, *Collego* should be applied by aerial application with fixed-wing or helicopter aircraft. Use a spray volume of at least 10 gallons of water per acre. Ground applications are not prohibited, however they may be impractical in most rice and soybean situations where northern jointvetch is

found with the exception of special areas such as levees where ground applications are practical. See Application Equipment section for instructions for preparing the ground spray rig prior to use of *Collego*. Use a spray volume of at least 15 gallons of water per acre.

**CAUTION: DO NOT ALLOW SPRAY SUSPENSION TO REMAIN IN THE SPRAY TANK FOR MORE THAN 12 HOURS OR ALLOW THE SUSPENSION TO HEAT UP.**

**COMPATIBILITY**

*Collego* contains live fungal spores, care must be exercised in the handling of the spores. *Collego* is not compatible with liquid nitrogen fertilizers, insecticides, fungicides and herbicides such as MCP, 2,4-D, 2,4-DB, 2,4,5-T and molinate (Ordran®). Germination of the spores will be reduced if combined with these materials. *Collego* is compatible with acifluorfen (Blazer®).

**CROP ROTATION**

Food, feed and forage crops may be sown in *Collego* treated fields immediately after harvest of rice or soybeans.

#### SPECIFIC PRECAUTIONS

After 7 days following application, the grower should frequently examine the northern jointvetch plants to determine if disease lesions are developing.

As with other pesticides, effectiveness of Collego may be reduced by mistakes in application, fertilization, cultivation and management practices. Results will be affected by extremes in weather, soil moisture and temperature.

If the disease lesions caused by Collego do not reach one-half (1/2) inch in diameter and do not encircle the stems of the northern jointvetch plants within 14 days after treatment, a second application of Collego should be made. See Application Rate and Recommendations Sections for Collego amounts and timing.

#### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**STORAGE:** Store Collego at temperatures of 40° to 80° F. Collego contains viable fungal spores. Germination of these spores will be reduced by temperatures below 32° F or when Collego is held for 12 hours or more at temperatures above 105° F.

**PESTICIDE DISPOSAL:** Pesticide spray mixture or rinsate that cannot be used according to label instructions must be disposed of according to Federal, State, or local procedures under the Resource Conservation and Recovery Act.

**CONTAINER DISPOSAL:** Triple rinse plastic containers (or equivalent) and offer for recycling or reconditioning, or dispose of in a sanitary landfill or by incineration if permitted by State or local authorities.

Do not reuse bag. When empty dispose of in an incinerator or according to approved Federal, State or local procedures under the Resource Conservation and Recovery Act.

#### IMPORTANT-READ BEFORE USE

By using this product, user accepts the following conditions, warranty, disclaimer of warranties and limitations of liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and should be followed carefully. However, because of extreme weather and soil conditions, manner of use and other factors beyond TUCO's control, it is impossible for TUCO to eliminate all risks associated with use of this product. As a result, crop injury or ineffectiveness is always possible.

**WARRANTY AND DISCLAIMER OF WARRANTIES:** TUCO warrants that this material conforms to the description and conditions on the label and is reasonably fit for use under the directions and conditions

of this label. TUCO AND SELLER MAKE NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS, MERCHANTABILITY OR OTHERWISE.

**LIMITATIONS OF LIABILITY:** The liability of TUCO or Seller for damages arising from the use of this product is limited to the replacement cost of the product used and shall not include any consequential damages such as loss of profits or other values.

**NO CHANGES AUTHORIZED:** No one (other than an authorized Agent of TUCO) is authorized to make any other warranty, or change the above conditions, disclaimer or limitations, and then only if in writing and with a specific reference to this label.

Ordram® Trademark of Stauffer Chemical Co  
Blazer® Trademark of Rohm and Haas Co

TUCO  
Division of The Upjohn Company  
Kalamazoo, Michigan 49001, U.S.A.

EPA Est. No. 1023-MI-2

812 245 001 •

NET CONTENTS  
1.30 litre pack

9-3249-1

LIVING FUNGAL SPORES  
STORE AT TEMPERATURES OF 40 TO 80 F

**Collego™**

SELECTIVE POSTEMERGENT HERBICIDE  
BIOLOGICAL WEED CONTROL AGENT FOR  
CONTROL OF NORTHERN JOINTVETCH (CURLY INDIGO)  
IN RICE AND SOYBEAN

**ACTIVE INGREDIENT**

*Chaetochytrium globosum* (strain 15p)  
ATCC 23358

**INERT INGREDIENTS**

15% w/w

85% w/w

Total 100% w/w

\*Contains at least 75.7 x 10<sup>11</sup> viable fungal spores

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

See Precautionary Statement on Side Panel

EPA Reg. No. 1023-63

EPA EST. NO. 1023-MI-2

Use Before

812-255-0019

**TUCO** Division of The Upjohn Company  
Kalamazoo, Michigan 49001, U.S.A.

**DIRECTIONS FOR USE**

For use on rice and soybean crops. Apply to the soil surface in the row between plants. Do not apply to the plants themselves.

**PRECAUTIONARY STATEMENT**

**HAZARD TO HUMANS AND DOMESTIC ANIMALS** Irritant to eyes.

**STATEMENT OF PRACTICAL TREATMENT** Flush with plenty of water.

**ENVIRONMENTAL HAZARDS** Do not apply to water bodies or to areas adjacent to water bodies.

**STORAGE AND DISPOSAL**

**STORAGE** Store Collego at temperatures of 40 to 80 F. Collego is stable at these temperatures for 12 months.

**PESTICIDE DISPOSAL** Do not spray or apply to water bodies.

**CONTAINER DISPOSAL** Do not reuse or burn containers.

**IMPORTANT - READ BEFORE USE**

The use of this product is restricted to the uses specified on the label. It is not to be used for any other purpose.

**CONDITIONS** This product is not to be used on crops that are not specified on the label.

**WARRANTY AND DISCLAIMER OF WARRANTIES** TUCO AND SELLER MAKE NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS, MERCHANTABILITY OR OTHERWISE.

**LIMITATIONS OF LIABILITY** The user assumes all liability for any damage or injury resulting from the use of this product.

**NO CHANGES AUTHORIZED** No changes are to be made to the label or to the product without the written approval of TUCO.

40  
10/2/82

**TUCO**

9-3243-2

**Collego™**

Component A  
FUNGAL SPORE REHYDRATING AGENT

10382  
KEEP OUT OF REACH OF CHILDREN

**CAUTION**

See side panel for  
precautionary statements

EPA Est. No. 1023 MI-2  
NET VOLUME 1 QUART

USE BEFORE NOV 1982  
LOT 999 KF

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

See Booklet for complete directions for use.

**STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by storage or disposal.

**STORAGE:**

**PESTICIDE DISPOSAL:** Pesticide sera, mixture or rinsate that cannot be used according to label instructions must be disposed of according to Federal, State or local procedures under the Resource Conservation and Recovery Act.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent) and offer for recycling or reconditioning, or dispose of in a sanitary landfill, by incineration if permitted by state or local authorities.

812 233 000

**TUCO** Division of The Upjohn Company  
Kalamazoo, Michigan 49001 U.S.A.

**TUCO**

9-3249-3

LIVING FUNGAL SPORES.  
STORE AT TEMPERATURES OF 40° TO 80° F

# Collego™

## Component B

**SELECTIVE POSTEMERGENT HERBICIDE**

**BIOLOGICAL WEED CONTROL AGENT  
FOR CONTROL OF NORTHERN JOINTVETCH (CURLY INDIGO)  
IN RICE AND SOYBEAN**

**ACTIVE INGREDIENT**

*Colletotrichum gloeosporioides* f.sp.  
*seschynomeris* ATCC 20358

15% w.w\*

**INERT INGREDIENTS**

85% w.w

Total 100% w.w

\*Contains at least  $75.7 \times 10^7$  viable fungal spores

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

See Precautionary Statement on Back Panel

NET WEIGHT

EPA Reg. No. 1023-63

EPA Est. No. 1023 MI 2

Use Before

812 235 001 ..

Lot No.

**TUCO**

Division of The Upjohn Company  
Kalamazoo, Michigan 49001 U.S.A.

9-3249-3

## Collego™ Component B

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.  
See Booklet for complete directions for use.

### PRECAUTIONARY STATEMENT

**HAZARD TO HUMANS AND DOMESTIC ANIMALS:** Caution. Causes slight eye irritation. Avoid contact with eyes or clothing.  
**STATEMENT OF PRACTICAL TREATMENT:** If in Eyes: Flush with plenty of water. Get medical attention if irritation persists. Wash thoroughly with soap and water after handling.  
**ENVIRONMENTAL HAZARDS:** Do not apply directly to water, except as indicated in the directions for use. Do not contaminate water by cleaning of equipment or disposal of wastes.

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.  
**STORAGE:** Store Collego Component B at temperatures of 40° to 80° F. Collego Component B contains viable fungal spores. Germination of these spores will be reduced by temperatures below 32° F or when Collego Component B is held for 12 hours or more at temperatures above 105° F.  
**PESTICIDE DISPOSAL:** Pesticide spray mixture or rinseate that cannot be used, according to label instructions, must be disposed of according to Federal, State or local procedures under the Resource Conservation and Recovery Act.  
**CONTAINER DISPOSAL:** Do not reuse bag. When empty, dispose of in an incinerator or according to approved Federal, State or local procedures under the Resource Conservation and Recovery Act.

### IMPORTANT—READ BEFORE USE

By using this product, user accepts the following conditions, warranty disclaimer of warranties and limitations of liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and should be followed carefully. However, because of extreme weather and soil conditions, manner of use and other factors beyond TUCO's control, it is impossible for TUCO to eliminate all risks associated with use of this product. As a result, crop injury or ineffectiveness is always possible.

**WARRANTY AND DISCLAIMER OF WARRANTIES:** TUCO warrants that this material conforms to the description and conditions on the label and is reasonably fit for use under the directions and conditions of this label. **TUCO AND SELLER MAKE NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS, MERCHANTABILITY OR OTHERWISE.**

**LIMITATIONS OF LIABILITY:** The liability of TUCO or Seller for damages arising from the use of this product is limited to the replacement cost of the product used and shall not include any consequential damages such as loss of profits or other values.

**NO CHANGES AUTHORIZED:** No one other than an authorized Agent of TUCO is authorized to make any other warranty or change the above conditions, disclaimer or limitations, and then only in writing and with specific reference to this label.



Division of The Upjohn Company  
Kalamazoo, Michigan 49001 U.S.A.

812-256-5011

Complete directions for use

# Collego™

Selective Postemergent Herbicide  
Biological Weed Control Agent

For Control of Northern Jointvetch  
(curly indigo) in Rice and Soybean

**LIVING FUNGAL SPORES**  
STORE AT TEMPERATURES OF 40° TO 80° F

Collego is a two component product

- Component A: A fungal spore rehydrating agent
- Component B:

**ACTIVE INGREDIENT**

*Colletotrichum gloeosporioides* f. sp. *aeschyromene* ATCC 20458

**INERT INGREDIENTS**

\*Contains at least 75% live viable fungal spores

15% w/w\*

85% w/w

Total 100% w/w

BEST DOCUMENT AVAILABLE

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

**PRECAUTIONARY STATEMENT**

**HAZARD TO HUMANS AND DOMESTIC ANIMALS:** Caution. Causes slight eye irritation. Avoid contact with eyes or clothing.

**STATEMENT OF PRACTICAL TREATMENT:** If in Eyes: Flush with plenty of water. Get medical attention if irritation persists. Wash face thoroughly with soap and water after handling.

**ENVIRONMENTAL HAZARDS:** Do not apply directly to water except as indicated in the directions for use. Do not contaminate water by cleaning of equipment or disposal of wastes.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**GENERAL INFORMATION**

Collego is a selective postemergent herbicide for the control of curly indigo in rice and soybean. It is a biological weed control agent.

Collego is effective against northern jointvetch and curly indigo in rice and soybean. It is also effective against other curly indigo species in soybean.

Aeschyromene is the active ingredient in Collego. It is a living fungal spore rehydrating agent.

Collego is effective against curly indigo in rice and soybean when applied to the weeds 8 to 24 inches tall and have not reached the bloom stage.

Collego is a biological weed control agent. It is not a chemical herbicide.

Collego is a selective postemergent herbicide. It is not a preemergent herbicide.

Collego is a biological weed control agent. It is not a chemical herbicide.

Collego is a selective postemergent herbicide. It is not a preemergent herbicide.

Collego is a two component product. Collego is composed of Component A and Component B.

Collego is a biological weed control agent. It is not a chemical herbicide.

Collego is a selective postemergent herbicide. It is not a preemergent herbicide.

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### RECOMMENDATIONS FOR CONTROL OF NORTHERN JOINTVETCH (CURLY INDIGO)

CROP*	WHEN TO APPLY COLLEGO	REMARKS
RICE	At any vegetative stage of rice growth if the northern jointvetch is at least 8 inches tall. Rice fields should be flooded before application.	Do not apply <b>Collego</b> after rice heads emerge from the field. Spraying at this time will not completely prevent seed production of the northern jointvetch.
SOYBEAN	After the soybean plants begin to flower if the northern jointvetch is at least 8 inches tall. Soybean fields should be irrigated just prior to application.	Do not apply <b>Collego</b> after pods form on the lower nodes of the soybean plants. Spraying at this time will not completely prevent seed production of the northern jointvetch.

\***Collego** is exempt from the requirement of a tolerance for residues in cotton, rice and soybean when used according to these directions for use.

#### TIMING

Apply **Collego** when the leaves of northern jointvetch are moist and can be expected to remain so for at least 12 hours. Following **Collego** application, there must be a period of humidities above 80% and air temperatures of approximately 60°F for at least 12 hours are necessary for development of the highest degree of infection. These conditions usually prevail during the evening in rice and soybean fields. Soybean fields should be irrigated just prior to application; rice fields should be flooded.

**CAUTION: DO NOT APPLY Collego DURING PERIODS WHEN RICE AND SOYBEANS ARE UNDER STRESS FOR MOISTURE OR WHEN DRYING CONDITIONS ARE LIKELY TO OCCUR. DO NOT APPLY Collego TO NORTHERN JOINTVETCH PLANTS PREVIOUSLY TREATED WITH PHENOXY HERBICIDES. DO NOT APPLY FUNGICIDES FOR AT LEAST THREE WEEKS FOLLOWING Collego APPLICATION.**

#### APPLICATION EQUIPMENT

Chemical pesticide residues that remain in the spray tank and nozzle may kill the **Collego** spores. Therefore, prior to use of **Collego** thoroughly clean the spray tank, nozzle and screens with an activated charcoal water suspension. Prepare activated charcoal powder following manufacturer's recommendations for use.

Thoroughly clean the spraying system to remove all the charcoal water suspension prior to the application of **Collego**. Be sure the sprayer has been calibrated to deliver proper spray gallonage with a uniform spray pattern as thorough coverage of the northern jointvetch leaves and stems with **Collego** is essential. Check frequently during application for output of desired gallonage. Use proper nozzle discs and nozzle arrangements on the spray boom. Use 50 mesh or coarser screens in strainers, nozzles and nozzle units. Clean nozzles and screens frequently. Wind may cause uneven coverage. Do not apply when wind velocity is greater than 10 miles per hour.

#### FILLING THE SPRAY TANK

Fill the spray tank one half full with water, add the **Collego** spore suspension (see Spore Preparation below) to the tank and raise the mixing container. Finish filling the tank to the desired spray volume. Agitate the spores and water to maintain the spore suspension. For best results, maintain continuous agitation during spraying.

#### SPORE PREPARATION

**Collego** Component B, dried fungal spores, must be rehydrated just prior to use. The sequence of the steps that must be used in rehydrating the spores for 10 acres:

- Step 1: Pour the contents from the 1 quart container of **Collego** Component A into the 1 gallon mixing container.
- Step 2: Completely fill the **Collego** Component A container with water and empty into mixing container.
- Step 3: Repeat Step 2. Final concentration is 1 part rehydrating solution and 2 parts water.
- Step 4: Vigorously stir until **Collego** Component A is completely dissolved.
- Step 5: Add the bag Component B and stir with mixing paddle until the spores are completely wet and suspended.
- Step 6: The suspension of spores may then be added to the spray tank. Raise the mixing container to remove all of the spore suspension.
- Step 7: Dilute the spore suspension in the spray tank to the desired volume.

#### SPRAY APPLICATION

For best results, **Collego** should be applied by aerial application with a low wing or helicopter at a spray volume of at least 10 gallons of water per acre.

Do not apply **Collego** to rice fields where there is a heavy infestation of northern jointvetch.

found, with the exception of special areas such as levees where ground applications are practical. See Application Equipment section for instructions for preparing the ground spray rig prior to use of **Collego**. Use a spray volume of at least 15 gallons of water per acre.

**CAUTION: DO NOT ALLOW SPRAY SUSPENSION TO REMAIN IN THE SPRAY TANK FOR MORE THAN 12 HOURS OR ALLOW THE SUSPENSION TO HEAT UP.**

#### COMPATIBILITY

**Collego** contains live fungal spores. Care must be exercised in the handling of the spores. **Collego** is not compatible with liquid nitrogen fertilizers, insecticides, fungicides, and herbicides such as MCP, 2,4-D, 2,4-DB, 2,4,5-T and imidazole. Germination of the spores will be retarded if combined with these materials. **Collego** is compatible with althiofurfen (Blazer®).

#### CROP ROTATION

Do not plant with soybean or rice with **Collego** treated immediately after harvest of rice or soybeans.

**QUAT S** provides sanitizing, disinfecting and deodorizing in Hospitals, Food Processing Plants, Hotels, Restaurants, Bars and other institutions. When used as recommended, it is effective as a sanitizer against *Escherichia coli* and *Staphylococcus aureus*, and as a disinfectant against *Staphylococcus aureus*, *Salmonella choleraesuis* and *Pseudomonas aeruginosa*. **QUAT S** is authorized under the Food Additive Amendment of the Federal Food, Drug and Cosmetic Act for use as a sanitizing solution at 200ppm active level without requiring a final potable water rinse.

**DISINFECTION** At 3 ounces per 5 gallon dilution, **QUAT S** exhibits effective disinfectant activity against the organisms *Salmonella choleraesuis* and *Staphylococcus aureus*.

At 3 ounces per 5 gallons dilution, **QUAT S** is an acceptable hospital disinfectant and demonstrates disinfectant activity against *Pseudomonas aeruginosa*.

**VIRUCIDAL ACTIVITY\***

This product when used on environmental, inanimate hard surfaces at 3 ounces per 5 gallons of water is effective against Influenza A (representative of the flu virus), Herpesvirus (causative agent of blisters and mononucleosis), Adenovirus Type 2 (causative agent of upper respiratory infections) and Variola Virus (representative of the pox virus group).

Efficacy tests have demonstrated that **QUAT S** is an effective disinfectant against the bacteria *Escherichia coli* and *Staphylococcus aureus*.

**DEODORIZATION** **QUAT S** deodorizes those areas which generally are hard to keep fresh, such as garbage storage areas, empty garbage bins and cans, pet areas and laundry areas which are soiled with odors caused by microorganisms.

**MOLD AND MILDEW** **QUAT S** prevents and controls mold and mildew on the surface of porous inanimate surfaces.

**SANITIZATION** When used for sanitization of previously cleaned hard surfaces, use 3 ounces per 5 gallons of water diluted to 200ppm. At this level, NO POTABLE WATER RINSE is required.

**QUAT S** is an effective sanitizer when diluted in water up to 200ppm and is safe to use.

**STORAGE AND DISPOSAL**

DO NOT CONTAMINATE WATER, FOOD OR FEED BY STORAGE OR DISPOSAL.  
OPEN DUMPING IS PROHIBITED.  
DO NOT REUSE EMPTY CONTAINER.

**PESTICIDE DISPOSAL** Pesticides that cannot be used or chemically reprocessed should be placed in a landfill approved for pesticide or buried in a safe place.

**CONTAINER DISPOSAL** Empty containers should be cleaned and disposed of in a landfill approved for pesticide containers or buried in a safe place.

**SPECIFIC PRECAUTIONS**

Apply this fungicide according to the directions and frequently examine the northern, leafy plants to determine disease lesions. As with the previous application of *Collego* have indicated, mistakes may be made if the application is not made in a timely manner. Results will be affected by weather, soil moisture and temperature.

The disease caused by *Collego* will reach one half of the plants in the field. The amount of the disease will depend on the amount of the disease in the field. The amount of *Collego* should be determined by the Rate and Recommendation Sections for *Collego* at each application.

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

**STORAGE:** Store *Collego* at temperatures of 40° to 80° F. *Collego* contains viable fungal spores. Germination of these spores can be delayed by temperatures below 32° F. or when *Collego* is held for 12 hours or more at temperatures above 105° F.

**PESTICIDE DISPOSAL:** Pesticide spray mixture or residue that cannot be used according to label instructions should be disposed of according to Federal, State, or local procedures under the Resource Conservation and Recovery Act.

**CONTAINER DISPOSAL:** Triple-rinse plastic containers for equivalents and offer for recycling or reconditioning, or dispose of in a sanitary landfill, or by incineration if permitted by State or local authorities.

Do not re-use this container for any other use or according to approved Federal, State or local procedures under the Resource Conservation and Recovery Act.

**IMPORTANT-READ BEFORE USE**

By using this product, user accepts the following conditions, warranties, limitations of warranties and limitations of liability.

**CONDITIONS:** The directions for use of this product are believed to be accurate and should be followed carefully. However, because of extreme weather and soil conditions, manner of use and other factors beyond TUCO's control, it is impossible for TUCO to eliminate all risks associated with use of this product. As a result, crop injury or other damage may result.

**WARRANTY AND DISCLAIMER OF WARRANTIES:** TUCO warrants that this material conforms to the description and conditions on the label and is reasonably fit for use under the directions and conditions

of this label. TUCO AND SELLER MAKE NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS, MERCHANTABILITY OR OTHERWISE.

**LIMITATIONS OF LIABILITY:** The liability of TUCO or Seller for damages arising from the use of this product is limited to the replacement cost of the product used and shall not include any consequential damages such as loss of profits or other values.

**NO CHANGES AUTHORIZED:** No one other than an authorized Agent of TUCO is authorized to make any other warranty or change the above conditions, disclaimer or limitations, and then only in writing and with a specific reference to this label.

Order of Trademark: TUCO, Blaze, and Hax. Blaze is a trademark of Hax and Hax Co.

TUCO  
Division of The Upjohn Company  
Kalamazoo, Michigan 49001 U.S.A.

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Complete directions for use

# Collego™

Selective Postemergent Herbicide  
 Biological Weed Control Agent

For Control of Northern Jointvetch  
 (curly indigo) in Rice and Soybean



LIVING FUNGAL SPORES  
 STORE AT TEMPERATURES OF 40° TO 80° F

Collego is a two component product

- Component A A fungal spore rehydrating agent.
- Component B

BEST DOCUMENT AVAILABLE

**ACTIVE INGREDIENT**

*Colletotrichum gloeosporioides* 1 sp  
*aeschyromene* ATCC 20358

**INERT INGREDIENTS**

15% w/w\*  
 85% w/w  
 Total 100% w/w

\*Contains at least 75.7 x 10<sup>10</sup> viable fungal spores

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

**PRECAUTIONARY STATEMENT**

**HAZARD TO HUMANS AND DOMESTIC ANIMALS.** Caution Causes slight eye irritation. Avoid contact with eyes or clothing.

**STATEMENT OF PRACTICAL TREATMENT.** If In Eyes Flush with plenty of water. Get medical attention if irritation persists. Wash thoroughly with soap and water after handling.

**ENVIRONMENTAL HAZARDS.** Do not apply directly to water except as indicated in the directions for use. Do not contaminate water by cleaning of equipment or disposal of wastes.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**GENERAL INFORMATION**

Collego is a selective postemergent mycoherbicide which is a specific biological weed control agent. Postemergent applications of Collego will selectively control northern jointvetch (curly, indigo) *Aeschynomene virginica* (L.) B.S.P. in rice (*Oryza sativa* L.) and soybean (*Glycine max* (L.) Merr.) Collego should be applied to emerged northern jointvetch plants that are from 0 to 24 inches tall and have not reached the bloom stage. Collego will cause disease lesions that will completely encircle the stems of the northern jointvetch plants. The fungus primarily infects the stems of the weed but it also infects the petioles and leaflets.

Disease plants become limp, they may collapse. Plants not killed by Collego are stunted, unthrifty, unable to compete with the rice or soybean and will not be able to seed. Death of northern jointvetch plants may not occur for five (5) weeks after application.

Collego is a two component product. Collego Component A consists of three 1 quart bottles containing a water soluble spore rehydrating agent that allows the spores to take up water prior to germination. Collego Component B consists of three bags that contain a water suspendible dried fungal spore formulation of *Colletotrichum gloeosporioides* 1 sp. *aeschyromene* ATCC 20358. Both components are packaged in a 5 gallon plastic mixing container with a lid and stirring paddle.

**APPLICATION RATE**

Collego Component A (1 quart) and Component B (1 bag) will treat 10 acres.

Acreage to be Treated	Amount Required	
	Component A	Component B
10	1 quart	1 bag
20	2 quarts	2 bags
30	3 quarts	3 bags

RECOMMENDATIONS FOR CONTROL OF NORTHERN JOINTVETCH (CURLY INDIGO)

CROP*	WHEN TO APPLY COLLEGO	REMARKS
RICE	At any vegetative stage of rice growth if the northern jointvetch is at least 6 inches tall. Rice fields should be flooded before application.	Do not apply Collego after rice heads emerge from the boot; spraying at this time will not completely prevent seed production of the northern jointvetch.
SOYBEAN	After the soybean plants begin to flower if the northern jointvetch is at least 6 inches tall. Soybean fields should be irrigated just prior to application.	Do not apply Collego after pods form on the lower nodes of the soybean plants; spraying at this time will not completely prevent seed production of the northern jointvetch.

\*Collego is exempt from the requirement of a tolerance for residues in or on rice and soybean when used according to these directions for use.

THINGS

Apply Collego when the leaves of northern jointvetch are moist and can be expected to remain so for at least 12 hours. Following Collego application, free moisture or relative humidities above 80% and air temperatures of approximately 80° F for at least 12 hours are necessary for development of the highest degree of infection. These conditions usually prevail during the evening in rice and soybean fields. Soybean fields should be irrigated just prior to application, rice fields should be flooded.

CAUTION: DO NOT APPLY Collego DURING PERIODS WHEN RICE AND SOYBEANS ARE UNDER STRESS FOR MOISTURE OR WHEN DRYING CONDITIONS ARE LIKELY TO OCCUR. DO NOT APPLY Collego TO NORTHERN JOINTVETCH PLANTS PREVIOUSLY TREATED WITH PHENOXY HERBICIDES. DO NOT APPLY FUNGICIDES FOR AT LEAST THREE WEEKS FOLLOWING Collego APPLICATION.

APPLICATION EQUIPMENT

Chemical pesticide residues that remain in the spray tank and boom may kill the live Collego spores. Therefore, prior to use of Collego, thoroughly clean the spray tank, boom, nozzles and screens with an activated charcoal water suspension. Prepare activated charcoal powder following manufacturer's recommendations for use.

Thoroughly rinse the spraying system to remove all the charcoal water suspension prior to the application of Collego.

Be sure the sprayer has been calibrated to deliver proper spray gallonage with a uniform spray pattern as thorough coverage of the northern jointvetch leaves and stems with Collego is essential. Check frequently during application for output of desired gallonage. Use proper nozzle discs and nozzle arrangements on the spray boom. Use 50-mesh or coarser screens in strainers, nozzles and suction units. Clean nozzles and screens frequently. Wind may cause uneven coverage. Do not apply when wind velocity is greater than 10 miles per hour.

FILLING THE SPRAY TANK

Fill the spray tank one-half full with water; add the Collego spore suspension (see Spore Preparation below) to the tank and raise the mixing container, finish filling the tank to the desired spray volume. Agitate the spores and water to maintain the spore suspension. For best results, maintain continuous agitation during spraying.

SPORE PREPARATION

Collego Component B, dried fungal spores, must be rehydrated just prior to use. The sequence of the steps that must be used in rehydrating the spores for 90 acres

- Step 1. Pour the contents from the 1 quart container of Collego Component A into the 5 gallon mixing container.
- Step 2. Completely fill the Collego Component A container with water and empty into mixing container.
- Step 3. Repeat Step 2 (Final concentration is 1 part rehydrating solution and 2 parts water).
- Step 4. Vigorously stir until Collego Component A is completely dissolved.
- Step 5. Add one bag Component B and stir with mixing paddle until the spores are completely wet and suspended.
- Step 6. The suspension of spores may then be added to the spray tank. Rinse the mixing container to remove all of the spore suspension.
- Step 7. Dilute the spore suspension in the spray tank to the desired volume.

found with the exception of special areas such as levees where ground applications are practical. See Application Equipment section for instructions for preparing the ground spray rig prior to use of Collego. Use a spray volume of at least 15 gallons of water per acre.

CAUTION: DO NOT ALLOW SPRAY SUSPENSION TO REMAIN IN THE SPRAY TANK FOR MORE THAN 12 HOURS OR ALLOW THE SUSPENSION TO HEAT UP.

COMPATIBILITY

Collego contains live fungal spores; care must be exercised in the handling of the spores. Collego is not compatible with liquid nitrogen fertilizers, insecticides, fungicides, and herbicides such as MCP, 2,4-D, 2,4-DB, 2,4,5-T and malinate (Ordran®). Germination of the spores will be reduced if combined with these materials. Collego is compatible with acifluorfen (Blatt®).

CROP ROTATION

Feed, feed and forage crops may be sown in Collego treated fields immediately after harvest of rice or soybeans.

SPRAY APPLICATION

For best results, Collego should be applied by aerial application with fixed-wing or helicopter aircraft. Use a spray volume of at least 10 gallons of water per acre.

Ground applications are not prohibited; however they may be impractical in most rice and soybean situations where northern jointvetch is

3 of 3

1023-67

3

**SPECIFIC PRECAUTIONS**

After 7 days following application, the grower should frequently examine the northern jointvetch plants to determine if disease lesions are developing.

As with other pesticides, effectiveness of College may be reduced by mistakes in application, fertilization, cultivation and management practices. Results will be affected by extremes in weather, soil moisture and temperature.

If the disease lesions caused by College do not reach one-half (1/2) inch in diameter and do not encircle the stems of the northern jointvetch plants within 14 days after treatment, a second application of College should be made. See Application Rate and Recommendations Sections for College amounts and timing.

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

**STORAGE:** Store College at temperatures of 40° to 80° F. College contains viable fungal spores. Germination of these spores will be reduced by temperatures below 32° F or when College is held for 12 hours or more at temperatures above 105° F.

**WASTE DISPOSAL:** Pesticide spray mixture or rinsate that cannot be used according to label instructions must be disposed of according to Federal, State, or local procedures under the Resource Conservation and Recovery Act.

**CONTAINER DISPOSAL:** Triple rinse plastic containers (or equivalent) and offer for recycling or reconditioning, or dispose of in a sanitary landfill or by incineration if permitted by State or local authorities.

Do not reuse bag. When empty dispose of in an incinerator or according to approved Federal, State or local procedures under the Resource Conservation and Recovery Act.

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