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## Antibiotics for Tobacco Disease Control

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Control Plant Diseases

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# PLANT DISEASES

Mimeo BP 9-8  
March 1958



on the farm

## Antibiotics for Tobacco Disease Control

In 1942, the new chemicals known as "antibiotics" were almost unknown and their use was confined to the control of a few human diseases. In the short space of 13 years, antibiotics have become almost household words and are now widely used for prevention of human ailments, as food supplements for livestock and poultry, and now, as modern methods of combating tobacco plant bed diseases.

What are antibiotics? Since 1942, more than 3,000 chemicals have been tested, but only a few of them have proven successful. The antibiotic suggested for tobacco disease control is "streptomycin," a by-product of the growth of the mold Streptomyces griseus. In 1956, several formulations of streptomycin will be available for use by tobacco growers, as follows:

<u>Name of Product</u>	<u>Manufacturer</u>	<u>Formulation</u>	
AGRI-MYCIN 100	Chas. Pfizer & Co. Inc.	15% Streptomycin Sulfate	2.4 oz. bottle
		Terramycin	9.34 oz. bottle
Phytomycin	Olin Mathieson Chem. Corp.	20% Streptomycin Nitrate	$\frac{1}{2}$ pint (6.4 oz) bottle 1 qt. (25.6 oz) bottle
AGRI-Strep	Merck & Co. Inc.	37% Streptomycin Sulfate	4.48 oz. bottle

What is streptomycin good for? Streptomycin was first tested in 1954 for the control of tobacco plant bed diseases. In 1955, streptomycin was applied to tobacco plant beds in several locations in Ohio, Jefferson and Switzerland counties. In all of the 1955 tests in Indiana, streptomycin gave excellent control of wildfire and of blue mold. Limited observations suggest it may have curative value when applied to beds showing early symptoms of blue mold. In all of the 1955 trials in Indiana, plants sprayed with streptomycin appeared to be more vigorous and greener in color than plants receiving standard fungicides. Observations in Virginia, Carolina, Kentucky and by the USDA, support these observations. Streptomycin is suggested for use by Indiana tobacco growers for plant bed treatment to prevent wildfire, blackfire and blue mold.

How to mix streptomycin. Place the required amount of powder (Agri-mycin 100 or Agri-strep) or liquid (Phytomycin) in a quart fruit jar. Add water (not over two-thirds full), screw on the lid and shake vigorously. Pour the mixture into the sprayer, add enough water to fill the sprayer and shake the sprayer frequently when applying the spray to the plant bed. Streptomycin may be safely mixed with DDT or other insecticides recommended for the control of tobacco insects.

How much streptomycin to use. For the control of wildfire, streptomycin should be used at a strength of 200 ppm. (parts per million). 100 Ppm. will give protection against blue mold.

The amounts of the different formulations of streptomycin, required to give 200 ppm. and 100 ppm., are summarized below:

Commercial Product	Concentration (ppm.)	Amount Needed		
		5 gals.	For 25 gals.	50 gals.
Agri-mycin 100	200	5 tsp.	$\frac{1}{2}$ LB.	1 LB.
Agri-strep		2 TBS.	$\frac{1}{2}$ B	1 B
Phytomycin		4 tsp.	3.2 oz.	6.4 ozs.
Agri-mycin 100	100	$2\frac{1}{2}$ tsp.	$\frac{1}{4}$ LB.	$\frac{1}{2}$ LB.
Agri-strep		1 TBS.	$\frac{1}{4}$ B	$\frac{1}{2}$ B
Phytomycin		2 tsp.	1.6 ozs.	3.2 ozs.
tsp. = rounded teaspoonful		B = bottle Phytomycin 6.4 oz.		
TBS. = rounded tablespoonful		25.6 oz.		
LB. = large bottle		Agristrep 4.48 oz.		
Agri-mycin 100		9.34 ozs		

How to spray with streptomycin. Always remove the plant bed cover and spray the plants thoroughly. It will require 5 gallons of spray per 100 feet of bed (100 square yards) when the plants are small. Ten gallons will be required per 100 feet of bed when the plants are 4 to 6 inches high. Always use a pressure sprayer. Never apply with a sprinkling can. Apply as a very fine mist but do not soak the plants to the point of runoff. Sprays should not be applied during the heat of the day and are more effective when applied in late afternoon or early evening. If heavy rains occur within 8 hours after application, the beds should be resprayed the following day.

When to spray with Streptomycin. Streptomycin should be used according to the following schedule:

Disease	Plant Growth Stage	Concentration of streptomycin (ppm.)
(1) Wildfire & Blackfire	2 leaf stage	200
(2) Wildfire & Blackfire	7 days later	200
(3) Blud Mold	when plants are 2" high	100
(4) Blue Mold	7 days later	100

Apply 100 ppm. at weekly intervals during blue mold weather. If blue mold appears, increase dosage of streptomycin to 200 ppm.