

**National Organic Standards Board  
Crops Committee  
2012 Sunset Recommendation  
Streptomycin**

**March 3, 2011**

**List: §205.601 Synthetic substances allowed for use in organic crop production.**

(i) As plant disease control.

(10) Streptomycin, for fire blight control in apples and pears only.

### **Summary**

The Crops Committee requested, but did not receive, prior to adopting its recommendation on streptomycin, an updated Technical Review (TR), noting deficiencies in the previous reviews. The committee has a 2006 TR and a 1995 Technical Advisory Panel (TAP) for streptomycin. The committee proceeded based on its own research, pending the receipt of the new TR, which will be reviewed when it is received.

The antibiotic streptomycin was first approved in November 1995. Streptomycin and another antibiotic, tetracycline, were each listed with a split vote. The issue of engendering antibiotic resistance in human pathogens and in workers was raised in the 1995 TAP review. The annotation that permitted use for “fire blight control in apples and pears only” was adopted. Streptomycin antibiotics were to be reviewed again in two years, and there was to be a task force to further explore antibiotic use in fruit production.

The 1998 proposed rule would have allowed “antibiotics as pesticides.” There was public opposition to the use of antibiotics as pesticides. When the USDA published the next draft rule in early 2000, it removed the NOSB recommendations allowing streptomycin and tetracycline in order to be consistent with the prohibition of antibiotics in livestock. The two antibiotics were reinstated in the December 2000 final rule in response to comments from growers.

Thus, from the very beginning, there has been controversy over allowing these chemicals to be used in organic agriculture. The board discussion regarding the 2006 sunset included concerns about:

- Promotion of resistance in human pathogens
- Natural substitutes
- Inconsistency with the prohibition of antibiotics in livestock
- Inconsistency with organic principles
- Disagreement with the prophylactic use of antibiotics
- The Centers for Disease Control and Prevention (CDC) opposition to the use of streptomycin and tetracycline in crop production
- Failing to give an incentive for alternatives
- Reaction against organic fruit by consumers
- Possibility that antibiotics might be taken up by fruit trees

- Need for more research
- Restrictions on sales of fruit in Europe
- Disruption of the organic system.

And on the other hand,

- Lack of data showing impact on resistance in human pathogens
- Dependency of growers on the materials

Ultimately, after expressing concern and the wish that someone might petition to remove them sooner than the next sunset, the two antibiotics were renewed with a vote of 7 yes, 4 no, 1 abstention, and 2 absent.

Now, the two antibiotics have come to board again—streptomycin as a sunset 2012 material and tetracycline as a petition to remove the annotation (the 2012 expiration date). Although the committee does not have an updated TR on streptomycin, it has found that the case against streptomycin has grown stronger and that removal from 601 should be delayed no longer.

The Crops Committee was presented with evidence that streptomycin can contribute to antibiotic resistance in human pathogens when used as pesticides on plants. At the same time, additional products are available for use against fire blight. Serenade Max, Bloomtime Biological FD, BlightBan C9-1 and Blightban A506 are relatively new biological controls. Surround is a kaolin clay product that has had some success in controlling fire blight.

However, most importantly, the majority of the committee believes that the first line of defense is the choice of resistant varieties and rootstocks, a concept that the committee majority believes is a critical organic principle, essential to disease or pest prevention in organic systems. Despite this, the pattern of growth in organic apple and pear varieties in certain areas of the country has been skewed toward those varieties most susceptible to fire blight. In 2010, the leading organic apple varieties grown in Washington state were Fuji, Gala, and Granny Smith and accounted for approximately 54% of organic apple acreage—all highly susceptible to fire blight. (Some other widely-planted varieties are also highly susceptible.) The leading varieties in organic pear production were Bartlett, D'Anjou, and Bosc—80% of organic pear acreage—again among the most susceptible to fire blight. On the other hand, there are numerous apple and pear varieties that are not susceptible to fire blight.

Given the public health threat associated with antibiotic resistant, the committee majority believes that organic production should not contribute in a small or large way to antibiotic resistance. The options for new antibiotics with efficacy are eluding us as resistance continues to increase.

Similarly, the committee has been told that fire blight resistance to streptomycin in some apple production is found widely. Therefore, streptomycin's efficacy and, as a result, essentiality cannot be established.

### **Committee Recommendation**

The majority of the Crops Committee recommends against the continued listing of streptomycin, for fire blight control in apples and pears only. The motion was to continue the listing of streptomycin, for fire blight control in apples and pears only.

### **Committee Vote**

Motion: To relist streptomycin on § 205.601, for fire blight control in apples and pears only.

Motion: Jay Feldman      Second: Tina Ellor

Yes: 0      No: 5      Absent: 2      Abstain: 0      Recuse: 0