



Current Status of PCNB

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A stop sale order was issued on August 12th by the United States Environmental Protection Agency on 95% technical grade PCNB. The order was issued because there are impurities in the product that have toxicological significance. The company that manufactures the technical grade product (American Vanguard) challenged the order in a court of law and the motion was denied on September 3, 2010. Consequently, PCNB cannot be sold by the manufacturer and is going to be very difficult to find this year. This order is different from a registration cancellation, so if the manufacturer cleans up the impurities PCNB sales could resume in the future. That being said, we do think it is very wise to start looking for alternatives.

It is rather unfortunate that this predicament developed after the summer we experienced. Due to the extremely warm, humid summer experienced throughout Wisconsin, we know many fungicide budgets were exceeded. Taking PCNB out of the equation for this year's snow mold applications just pours more salt over the wounds of summer. There are many alternatives to PCNB, but few of those alternatives are as affordable.

If PCNB was a stalwart in your snow mold program, it is important to pick a mixture of fungicides that combat the diseases experienced at your course. It is also important to pick a mixture that is affordable for your budget. Nothing is similar in cost to PCNB, nor is there single product that performs as well as PCNB when considering cost. We have tried to take this into account when we developed the following program suggestions, but we are uncertain of pricing points for this year. Our suggestion is to use these as a guide when you sit down with your local soft goods sales representative to find an effective mixture within the constraints of your budget.

Remember that PCNB is a contact fungicide and worked well as a late or extremely late application. Most the alternatives presented in this article incorporate a systemic fungicide, which should be applied when the plant is still metabolically active. Do not wait until two days before snowfall to apply these mixtures!



Table 1. Active ingredients, FRAC groupings and strengths against snow mold fungi of fungicide that have traditionally performed well in UW-Madison snow mold trials.

Active Ingredient	FRAC Group	Strengths Against Snow Mold Diseases
1. Thiophanate methyl	Benzimidazole	<i>Microdochium</i> , <i>T. incarnata</i>
2. Chlorothalonil	Morpoline	<i>Microdochium</i> , <i>T. incarnata</i>
3. Iprodione	Dicarboximide	<i>Microdochium</i>
4. Propiconazole	DMI	<i>T. ishikariensis</i> , <i>T. incarnata</i>
5. Myclobutanil	DMI	<i>T. ishikariensis</i> , <i>T. incarnata</i>
6. Triticonazole	DMI	<i>T. ishikariensis</i> , <i>T. incarnata</i>
7. Metconazole	DMI	<i>T. ishikariensis</i> , <i>T. incarnata</i>
8. Tebuconazole	DMI	<i>T. ishikariensis</i> , <i>T. incarnata</i>
9. Fludioxonil	Phenylpyrrole	<i>T. ishikariensis</i> , <i>T. incarnata</i> ,
10. Trifloxystrobin	Strobilurin	<i>Microdochium</i> , <i>T. incarnata</i>



Table 2. PCNB-less snow mold program suggestions for 2010. Suggestions are divided into categories of good, better, best and supreme. Good and better target primarily *Microdochium nivale* (Pink snow mold or Microdochium Patch and *Typhula incarnata*). Best and Supreme suggestions target *Microdochium nivale* (Pink snow mold or Microdochium patch), *Typhula incarnata* and *Typhula ishikariensis*.

Good	Better	Best	Supreme
2 to 4 oz thiophanate methyl + 5.5 oz chlorothalonil	4 oz iprodione + 5.5 oz chlorothalonil	4 oz iprodione + 5.5 oz chlorothalonil+ 0.72 oz propiconazole ^x	7 to 9 oz Instrata
	0.37 oz Tourney + 4 fl oz iprodione	4 oz iprodione + 5.5 oz chlorothalonil+ 2 oz propiconazole ^y	Two 5.5 oz Instrata applications
	1 fl oz Trinity + 4 fl oz iprodione	3 fl oz propiconazole ^y + 0.3 to 0.5 oz Medallion	4 to 6 oz Interface + 2 fl oz propiconazole ^y
		0.9 fl oz tebuconazole + 4 fl oz 26/36	4 oz Interface + 0.85 fl oz Triton FLO

^xconcentrated EC formulation (i.e. AmTide 41.3 EC)

^ymicroemulsion formulation (i.e. Banner MAXX)