

## Resistance management recommendations and proposals for Fungicides not included in current working groups as requested by manufacturers

<b>Compound</b>	Cyazofamid, Amisulbrom
<b>GROUP NAME</b>	Qil fungicides (Quinone inside Inhibitors)
<b>FRAC MoA Code</b>	21
<b>TAREGT SITE AND CODE</b>	C4 - Quinone 'inside' (Qi) binding site of the cytochrome bc1 (ubiquinone reductase)
<b>Uses</b>	Oomycete diseases control in potatoes, grapevines, fruiting vegetables, leafy vegetables etc.
<b>Resistance Status</b>	<ul style="list-style-type: none"> <li>• Medium to high risk.</li> <li>• Specific resistance have been detected in <i>Plasmopara viticola</i> in France.</li> <li>• No specific resistance identified in <i>Phytophthora infestans</i>.</li> <li>• Resistance management required.</li> <li>• Active resistance monitoring program for <i>Plasmopara viticola</i> and <i>Phytophthora infestans</i>.</li> </ul>
<b>Resistance Mechanism</b>	<ul style="list-style-type: none"> <li>• Specific resistance in <i>Plasmopara viticola</i> which harbors the insertion of E203-DE-V204 and substitution of L201S in cytochrome b.</li> </ul>
<b>Recommendations</b>	<p><b>Recommendations for grapevines</b></p> <ul style="list-style-type: none"> <li>• Always apply Qil fungicides in mixture with effective partners such as multi-site or other non-cross resistant fungicides in high risk countries.</li> <li>• Apply Qil fungicides preferably in a preventive manner.</li> <li>• Apply a maximum of 50 % of the total number of intended applications for disease control not exceeding a total of 4 Qil fungicides sprays during one crop cycle. In areas of high resistance the total number should not exceed a maximum of 3 applications during one crop cycle.</li> <li>• Alternation with fungicides having other modes of action is recommended in spray programs.</li> <li>• Apply Qil fungicides according to manufacturers' instructions</li> </ul> <p><b>Recommendations for potatos</b></p> <ul style="list-style-type: none"> <li>• Apply Qil fungicides preferably in a preventive manner.</li> </ul>

	<ul style="list-style-type: none"> <li>• Apply a maximum of 50 % of the total number of intended applications for late blight control during one crop cycle.</li> <li>• Alternation with fungicides having other modes of action is recommended in spray programs.</li> <li>• Apply Qil fungicides according to manufacturers' instructions.</li> </ul>
<b>Requested by / date</b>	Ishihara Sangyo Kaisha LTD and Nissan Chemical Corporation, January 2021
<b>FRAC SC approval / date</b>	February 12 <sup>th</sup> 2021