

Merit Analysis for top 45 Global Minor Use Priorities Summer 2020

Use 1 form per crop/pest priority

(To be conducted by a committee of global proponents for the priority)

Temperate Crops					
Green Onion Downy Mildew (Field) 62 (Sum of 2 forms)					
Kathryn Homa, USA, homa@njaes.rutgers.edu Merit Analysis Team Lead					
Criteria*	Points				
Is the crop-pest combination a situation with no available products? 2 points	0				
	Solution 1	Solution 2	Solution 3	Solution 4	Solution 5
Are there potential solutions?	fluoxapiprolin	Oxathiapiprolin (Orondis or Zorvec) (not sure if green onion is covered (Syngenta?))	3% thyme oil Guarda (Aka. Forticept EP # 1)	Theia – <i>Bacillus subtilis</i> strain AFS032321	Howler Fungicide® (AB747)
Company name	Bayer CropScience	Syngenta Crop Protection (green onion) and Corteva (dry bulb onion)???	BioSafe Systems, LLC	AgBiome International	AgBiome International
Company contact name and e-mail	Jessica Fernandez jessica.fernandez@bayer.com	Gordon Vail (US) gordon.vail@syngenta.com Craig Dunlop (Global) craig.dunlop@syngenta.com Brian Bret brian.bret@corteva.com	Vijay K. Choppakatta; vijayc@biosafesystems.com	Scott Walker swalker@agbiome.com	Jim Spadafora (jspadafora@agbiome.com)
Level of registrant support globally – list of countries registrant is willing to supply GLP test substance, standards and pursue a label (A)	Registrant supports Green onion: Austria, Estonia, Sweden, Germany, Slovenia, Ireland	Registrants support Corteva and Syngenta have projects underway to add onion to the following countries highlighted in green font: <u>For green onion</u> (field): Austria, Estonia , Sweden, Slovenia (need confirmation from Syngenta about what EU countries will be registered for green onion)	Registrant supports Austria, Estonia, Sweden, Germany, Slovenia, Ireland, United States	Registrant Supports United States, Canada, Sweden, Spain, Estonia, Slovenia, Austria, Poland, Norway, Belgium, United Kingdom and Germany	Registrant Supports Austria, Estonia, Sweden, Germany, Slovenia, Ireland, US, Canada
List of countries having field and analytical ability and willing to conduct trials (B)	Germany	Germany	Germany	Germany	Germany
<i>Insert 1 point for each match between</i>	1	1	1	1	1

<i>countries that registrant supports, and countries willing (A + B)</i>					
Is efficacy already established against the target pest or can it be bridged via rationale from other labeled uses? <i>Insert Ipoint</i>	129 trials total, 3 US and 3 CAN (1) For Canada- need to determine if there is enough existing efficacy data for the Part 10; IR-4/minor use stakeholders may have to develop more efficacy data	For bulb onion, the N zone countries efficacy data would be required for registration, the only data we currently have does not cover the required EPPO zones (0) No IR-4 data; PMC Canada has no supportive data efficacy has been established on dry bulb onions but not green onions (from Corteva) Reasonable bridge(1)	Yes for onion; Can be bridged via rationale from other labeled uses (1)	Yes for onion (1)	1 (Related downy mildews)
Are there any residue data already available for the crop/pest combination and if so, from where?	Bayer will be pursuing registration of onion in North America and New Zealand. 1	Yes; dry bulb and green onion in US and Canada For spring onions EU data would be required, for the 4 countries listed only NEU residue zone data would be needed. Syngenta may be able to comment further <u>For green onion</u> (field): Estonia, Slovenia Currently, there is no EU registration on green/spring/welsh onions, however an IT value will be set soon (it has been voted and is awaiting parliamentary scrutiny process to complete) based on data generated in US by Syngenta.	Exempt from tolerance Product is US EPA approved. Any residual information submitted/reviewed as part of EPA registration process may be shared as needed	Exempt from tolerance	0 Not applicable for biologicals
Are project champions	Kathryn Homa (1)	Kathryn Homa (1)	Kathryn Homa (1)	Kathryn Homa (1)	Kathryn Homa (1)

identified?(Insert names) <i>Insert Ipoint</i>					
Will a uniform GAP (rate, application pattern, PHI, formulation, premix be able to be established across all countries? <i>Yes = Insert Ipoint ; No = 0</i>	Not sure (0) US use pattern: 3 X 20 g ai/ha (1 day PHI).	US and Canada: 0.83 lb ai/gal rate; 4.8 fl oz/A, 5 day retreatment interval, 4 applications, 0 day PHI Syngenta would need to respond to GAP questions for green onion ??? (0)	Yes (1) Already registered in US for onion downy mildew; not registered in Canada US Label: Foliar; 1 gal per 29-159 gal water (0.625% to 3.3% v/v dilution); apply at 15-25 GPA; apply preventatively every 7-14 days	??? Not registered in US yet (0)	1
Does the product replace old technology with reduced risk technology? (<i>1 point per old product replaced with reduced risk defined as a more favorable environmental or human health risk assessment</i>)	Yes Mefenoxam (1) Mancozeb (1) Chlorothalonil (1) Azoxystrobin (1) Copper (1) Captan (1) Fosetyl-Al (1) Folpet (1)	Yes Mefenoxam (1) Mancozeb (1) Chlorothalonil (1) Azoxystrobin (1) Copper (1) Captan (1) Fosetyl-Al (1) Folpet (1)	Not sure; since efficacy cannot be compared equally to conventional products (0)	Not sure; since efficacy cannot be compared equally to conventional products (0)	1
Does the potential solution fit into IPM systems, i.e. low risk to beneficials <i>Insert Ipoint</i>	Yes (low use rate), new mode of action (1)	Yes (low use rate); new mode of action (1)	Yes; low risk to beneficials; exempt from tolerance; (1) a reduced risk chemistry that is safe to human health and environment BioSafe Systems is in process of completing Honey Bee toxicity assay in order to remove Bee caution statement on the US EPA Label	Yes; exempt from tolerance (1)	1

Does the project complement current technologies to address pesticide resistance and/or control resistant pest/disease/weed or provide an alternative mode of action? <i>Insert Ipoint</i>	Yes (allows for flexibility of tank mixing with another FRAC group) (1)	Yes; OXTP used in tank mix with other downy mildew fungicides from Syngenta to prevent resistance (1)	Yes; another mode of action; can be used in alternation with conventional chemistries (1) Guarda is tank mix compatible with most bactericides and fungicides and can be safely used in conjunction/rotation with other crop protection chemicals in pest resistant management programs.	Yes; another mode of action; can be used in alternation with conventional chemistries (1)	1
Are there any crop grouping MRL opportunities? <i>(1 point per crop group)</i>	Yes; 3-07 (1) (Dry bulb and green onion)	Yes; 3-07 (1) (Dry bulb and green onion)	Yes; 3-07 (1) (Dry bulb and green onion)	Yes; 3-07 (1) (Dry bulb and green onion)	1
Comments (Please use this space to make a memo of any other information that might be points of consideration such as JMPR cycle, CODEX, EPA, EU registration/MRL status, ability of a product to control multiple pest priorities, can be used across multiple crops, one formulation or premix combination used in one part of the world, regulatory needs, etc.	The product is in FRAC Group 49 with oxathiapiprolin, so care should be taken to use in a tank mix; very efficacious for control of downy mildew; not registered yet in US	Corteva has just recently received registration of Zorvec Endavia on bulb onion in Austria (now marked green above). We also hope to submit in the future for all countries highlighted in black (Sweden, Denmark) for registration on bulb onion. No Corteva plans for registration on green onion. Questions on green onion would need to be directed/answered by Syngenta. For resistance management, Zorvec/Orondis require an appropriate partner active with sufficient activity and the required residue data, or agreement to generate the partner residue data and apply for MRL.	Already on U.S. label; may be issues with registering in Canada; Bi-product may be problematic in Canada. Registrant would need to need to demonstrate that the bi-product is safe. Guarda (Aka. Forticept EP # 1) is a broad spectrum Bactericide/Fungicide registered with US EPA (Reg. No. 92144-2). Product label currently has broad list of field crops and diseases (Foliar and soil; Bacterial and Fungal diseases). All the ingredients in the product are low risk and EPA tolerance exempt	Product is new and not registered yet in US or other countries	Being biologicals exempt from tolerance, this is not applicable. So we placed 1 point where relevant. The product has broad use across crops/diseases/and use patterns Registered and exempt from tolerance in the USA, official efficacy trials in progress in Canada and several European countries

No specific points, but useful information					
TOTAL POINTS	16	15	6	6	8
GRAND TOTAL					51

*if not specified otherwise in the 'criteria' box, assign 1 point per solution in gray boxes only.

Temperate Crops		
Green Onion Downy Mildew (Field) 62 (Sum of 2 forms)		
Kathryn Homa, USA, homa@njaes.rutgers.edu Merit Analysis Team Lead		
Criteria*	Points	
Is the crop-pest combination a situation with no available products? <i>2 points</i>	0	
	Solution 6	Solution 7
Are there potential solutions?	<i>Bacillus amyloliquefaciens</i> F727 (Stargus)	Rhamnolipid Biosurfactant Source organism: <i>Pseudomonas aeruginosa</i> (Zonix)
Company name	Marrone Bio Innovations	Stepan Chemical
Company contact name and e-mail	Andre Trepanier atrepanier@marronebio.com Maryna Serdani mserdani@marronebio.com	David Allen DAllen@stepan.com
Level of registrant support globally – list of countries registrant is willing to supply GLP test substance, standards and pursue a label (A)	Registrant supports ; currently registered in all 50 U.S. states, Puerto Rico, Canada and Mexico. MRL exempt in these countries, and registrant anticipates residue exemption in countries it is yet to be registered.	Registrant supports *willing to support provided sufficient efficacy shown during trials Green onion: Austria, Estonia, Sweden, Germany, Slovenia, Ireland, United States
List of countries having field and analytical ability and willing to conduct trials (B)	Germany	Germany
<i>Insert 1 point for each match between countries that registrant supports, and countries willing (A + B)</i>	1	1
Is efficacy already established against the target pest or can it be bridged via rationale from other labeled uses? <i>Insert 1 point</i>	Yes (1) Michigan State University. 2012 study, disease severity (from downy mildew, bacterial blight, <i>Stemphylium</i> and <i>Colletotrichum</i> grouped together) was significantly less for Stargus (2 qt/acre) compared to the untreated control. There is also data for Stargus showing good efficacy against downy mildew on	Specific data for downy mildew of onion not available (0)

	other crops, e.g. leafy greens, cucurbits and grapes (US data).	
Are there any residue data already available for the crop/pest combination and if so, from where?	Exempt from tolerance	Exempt from tolerance
Are project champions identified?(Insert names) <i>Insert 1point</i>	David Courcelles (1)	Kathryn Homa (1)
Will a uniform GAP (rate, application pattern, PHI, formulation, premix be able to be established across all countries? <i>Yes = Insert 1point ; No = 0</i>	<p>??? (0)</p> <p>US Label: 1 - 4 quarts per 100 gallons of water (0.25 – 1.0% v/v dilution). When tank mixed with another fungicide, the use rate for STARGUS® BIOFUNGICIDE is 0.5 – 4 quarts in 100 gallons of water; 0 day PHI</p> <p>CANADA LABEL DOES NOT LIST ONIONS</p> <p>Canada would try to use comparable rates as what is registered in the US CG</p>	<p>??? (0)</p> <p>Use for onions already on Zonix label in US (previously owned by another registrant)</p> <p>US label: Apply at a concentration of 300 to 500 ppm. Make applications in the early stages of plant growth for initial control. Reapply at 5-day intervals or as needed throughout the growing season for preventative control. Early treatment prevents diseases from developing. ZONIX Biofungicide is a contact biofungicide that controls disease upon contact with zoospores</p>
Does the product replace old technology with reduced risk technology? (<i>1 point per old product replaced with reduced risk defined as a more favorable environmental or human health risk assessment</i>)	Not sure; since efficacy cannot be compared equally to conventional products (0)	Not sure; since efficacy cannot be compared equally to conventional products (0)
Does the potential solution fit into IPM systems, i.e. low risk to beneficials	Yes; low risk to beneficials; exempt from tolerance; minimal PPE; 4 hour REI; OMRI; 0-day PHI (1)	Yes; biodegradable, all-natural (1)

<i>Insert 1point</i>		
Does the project complement current technologies to address pesticide resistance and/or control resistant pest/disease/weed or provide an alternative mode of action? <i>Insert 1point</i>	Yes; another mode of action; can be used in alternation with conventional chemistries (1)	Yes; another mode of action; can be used in alternation with conventional chemistries (1)
Are there any crop grouping MRL opportunities? (<i>1 point per crop group</i>)	Yes; 3-07 (1) (Dry bulb and green onion)	Yes; 3-07 (1) (Dry bulb and green onion)
Comments (Please use this space to make a memo of any other information that might be points of consideration such as JMPR cycle, CODEX, EPA, EU registration/MRL status, ability of a product to control multiple pest priorities, can be used across multiple crops, one formulation or premix combination used in one part of the world, regulatory needs, etc.	Would only need efficacy work; need registrant to respond	Would only need efficacy work; need registrant to respond; already on US label but need more efficacy data to support Registration in Canada may be problematic. It is unclear if the data requirements would be met for registration in Canada. The registrant would need to request a PSCR with PMRA.

No specific points, but useful information		
TOTAL POINTS	6	5
GRAND TOTAL		11
		51+11=62

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