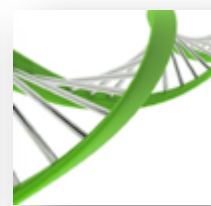
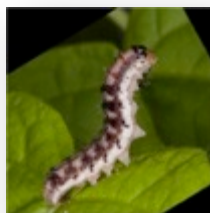




Insecticide Resistance Action Committee

SMART GOALS & OBJECTIVES 2017 - 2018



SMART Goals & Objectives

Specific Measurable Achievable Realistic (Resourced) and Time Bound

IRAC International

The IRAC Network is made up of a series of inter-company Committees dedicated to prolonging the effectiveness of insecticides and acaricides by countering the development of resistance. The Committees operate at a global level (IRAC Executive) and at a regional or country level (IRAC Country Groups) and the whole network is termed IRAC International (abbreviated to IRAC).

The IRAC Executive Committee provides technical information, coordination and support for IRAC through a series of international Teams and Working Groups. Annual goals and SMART objectives for each of the teams are set in accordance with the overall IRAC Mission and should be reviewed periodically during the year within the teams to evaluate progress.

The IRAC International Mission

- Facilitate communication and education on insecticide and traits resistance
- Promote the development and facilitate the implementation of insecticide resistance management strategies to maintain efficacy and support sustainable agriculture and improved public health

IRAC Executive Goals 2017-18

IRAC Executive – Goals

- Coordinate and facilitate the work of IRAC in accordance with the IRAC Mission
- Facilitate communication on the agronomic risks associated with insecticide resistance and the best practice for its management including insecticidal traits & public health pests.
- Prioritise insecticide resistance threats and develop an IRAC strategy aimed at minimising the impact of resistance either through IRAC international, IRAC country groups or organisational partnerships.
- Encourage and participate in the development and use of practical IRM recommendations which are communicated to individuals and organisations who make and influence pesticide application strategy.
- Assure alignment and mutual co-operation between the IRAC and CropLife organisations.
- Continue to promote IRAC as premier technical body for expertise in insecticide resistance.
- Seek opportunities to further attract new member companies to IRAC, based on their potential to actively contribute to resistance management globally.

Operational

- Approve and submit the IRAC annual budget to the CropLife Stewardship Committee
- Promote membership of IRAC at a country, regional and international level
- Strengthen links with the IRAC Country Groups, CropLife associations and other relevant partnerships.
- Encourage WGs to hold 4-6 audios and at least one F2F each year to review activities
- Emphasis to all IRAC members the importance of following the IRAC Constitution including the Code of Conduct and Guidelines on Antitrust.

IRAC Executive Deliverables 2017-18

IRAC Executive – Deliverables

- Facilitate the completion of the *Tuta absoluta* and Puerto Rico Task Teams established in 2016 and form at least one further new task team aimed at developing a strategy for delivering practical IRM recommendations to a defined target audience.
- Complete agreement with IRAC member companies on MoA icon adoption
- Enhance available information on pest resistance on the the IRAC website
- Develop IRM classification scheme for biological and non-chemical insecticides
- Develop a strategy to address the impact of secondary standards on insecticide resistance following the rejection of EU funding for the proposed SMART project.
- Find long term solution for a resistance record database
- Provide an IRAC guidance document on IRM modelling
- Confirm interest in the development of an IRM training tool for company sales and marketing individuals
- Develop a proposal with the other RACs for the generation of EU regulatory data and engage with the pesticide regulators in Europe
- Work with local company representatives to provide direction to the newly re-establish IRAC India Country WG.

IRAC Steering Team Objectives 2017-18

Goals	Objectives	Target Completion Date
Update and maintain the IRAC administrative documentation and propose strategies for the effective management of IRAC	<ul style="list-style-type: none"> Review and update as necessary the IRAC management documentation for 2017/18 (Constitution, Guides, Goals etc.). Develop strategies and proposals for the Executive Committee on how IRAC should evolve as an effective organisation, communicating, educating and advising on IRM. Allocate time on at least two calls or meetings during the year on how best to achieve this objective. Lobby CLI Stewardship Committee to improve engagement and support of the work of IRAC. An IRAC representative should attend at least one CLI Stewardship meeting during the year. Propose to the IRAC Executive, suggestions on format, duration, venue and location for the IRAC Spring Meeting and work with the various teams developing the meeting sessions and agenda. 	<p>Oct 2017</p> <p>Oct & Mar 2017/18</p> <p>Mar 2018 Oct 2017 & ongoing</p>
In conjunction with CropLife, manage the IRAC finances and budget process	<ul style="list-style-type: none"> Monitor and provide a detailed report on the status of the IRAC finances to the Executive and Steering Groups on at least two occasions, (spread out during the year) to each group. Develop the IRAC budget in conjunction with CLI for the coming year along with a long term 5 year forecast. Initial budget is required by CLI mid-June and finalised in September. 	<p>Sept & Mar 2017/18</p> <p>May & Sep 2017</p>
Maintain, develop and manage the IRAC Network and other stakeholder relations	<ul style="list-style-type: none"> Promote and facilitate membership of IRAC International by companies not currently members. List potential target companies and approach at least 2 during the year to determine interest; ISHIHARA, NISSAN, PHILAGRO, ARYSTA, SIPCAM, NISSO. Encourage and facilitate the formation of new IRAC Country Groups, where appropriate this should be through the conversion of the Lep/Diamide CG into full IRAC CG. Strengthen the links between the CGs with IRAC International and the local CropLife Associations to ensure good communication and that the groups follow the IRAC Constitution including the Code of Conduct and Antitrust Guidelines. Each group should be contacted during the year to ensure that they are aware of these requirements and have access to the available IRAC administrative documents. Engage with stakeholders at a national, regional and global level to promote the work of IRAC and the importance of inter-company cooperation in the development of IRM strategies. To be covered by the crop IRM recommendations 	<p>Sept & Mar 2017/18</p> <p>Sept & Mar 2017/18</p> <p>Ongoing</p>
Maintain oversight of goals, objectives and activities of WG/ CGs to ensure effective/ efficient coordination of local/ global IRM	<ul style="list-style-type: none"> Coordinate with CropLife on IPM educational material to ensure inclusion of relevant IRAC approved IRM content. Monitor the activities of the WGs and CGs and advise where possible on efficiencies and potential overlap of activities. In conjunction with the Executive Committee, work through member companies and CropLife to increase the number of countries adopting MoA and IRM information on the product labels. 	<p>Sept & Dec 2017 on-going to March 2018</p>

IRAC Outreach Team Objectives 2017-18

Goals	Objectives	Target Completion Date
<p>Prioritization, development, and delivery of IRAC IRM outreach material taking account of but not necessarily being restricted by the IRAC budget. Leverage Outreach through the IRAC & CropLife network</p>	<ul style="list-style-type: none"> • Prioritize IRAC IRM advice for our target audiences. This should include but not be limited to growers, grower advisors and extension workers etc. Information, messaging and the best method of delivery (e.g. SMS, leaflets, videos etc.) should be appropriate for the target audience. • Coordinate with the Steering/Executive Teams as well as with the other IRAC WGs and CropLife to develop educational material: <ul style="list-style-type: none"> ○ Request WGs to review/update any poster more than 4 years old ○ Coordinate with the Methods WG to publish at least 1 methods video during 2017/18 ○ Organise printing/re-printing of outreach material as this becomes available from the WGs ○ Inclusion of IRAC IRM information within CLI Stewardship IPM training modules • Finalise the Outreach 2017/18 budget. Approach CropLife for additional support where and when required. 	<p>Ongoing Ongoing</p> <p>Sept 2017</p>
<p>Maintain and improve the website as main IRAC Outreach vehicle for resistance and IRM information</p>	<ul style="list-style-type: none"> • Continue the technical upgrade of the IRAC website: <ul style="list-style-type: none"> ○ Resolve any bugs that arise ○ Build in new enhancements and additions as required ○ Optimise the site for newer browser versions ○ Review and report on site visitor traffic as required • Continue to add and improve on the website content and linked documents <ul style="list-style-type: none"> ○ Information added directly into the web pages e.g. Team, Pest, Method MoA pages etc. ○ New documents, posters, publications etc. and updates to Events, News and Contacts • Ensure IRAC documents are marked Copyright IRAC • Redesign the Pest Pages and enhance available information on pest resistance Stage 1: Update information for existing listed pests. Stage 2: Add further pests identified by the WGs as having resistance issues 	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing Oct 2017 March 2018</p>
<p>Communicate IRM & IRAC news through the circulation of newsletters.</p>	<ul style="list-style-type: none"> • Find and/or prepare appropriate articles and resistance alerts and distribute as the IRAC eConnection at least 1-2 issues a year. • Continue to manage distribution of newsletters via the MailChimp system: <ul style="list-style-type: none"> ○ Monitor and maintain subscribers, track user statistics on deliveries and openings • Continue to add content to the IRAC YouTube Channel as this becomes available 	<p>Q3/4 2017 & Q1/2 2018</p> <p>Ongoing</p>
<p>Maintain and improve the MoA Mobile App.</p>	<ul style="list-style-type: none"> • Maintain the MoA App. for both Apple and Android devices such that it is aligned with the MoA Classification and the interactive searchable MoA page on the website. 	<p>Ongoing</p>
<p>Continue to upgrade, update and maintain the MSU Database</p>	<ul style="list-style-type: none"> • Work with the MSU IRAC focal point: <ul style="list-style-type: none"> ○ To monitor and ensure the MSU technical upgrade continues as proposed ○ Ensure that data from new resistance reports is added in a timely manner ○ Present annual reports from MSU of progress achieved during the year • Work with the IRAC Executive and CropLife to determine longer term proposals for a resistance database 	<p>Ongoing</p> <p>Q1, 2018</p>

IRAC Coleoptera WG Objectives 2017-18

Goals	Objectives	Target Completion Date
Strengthen the WG and expand its remit by increasing membership and adding a wider range of coleopteran pests, respectively	• Seek for new (recent) WG member companies and representatives actively contributing to WG goals	Ongoing
	• Constantly monitor situation on coleopteran pest resistance outside OSR and decide on actions	Ongoing
	• Provide input on Pest Pages for stored product coleopteran pests according to priority list	Q4 2017
	• Align priority list with regional IRAC groups (incl. EU RAG's)	Q4 2017
Provide and validate methods for measuring the susceptibility of coleopteran pests	• Validation of insecticide sensitivity testing method of CRW larvae based on Russell's draft proposal	Q4 2017
	• Validation of adult vial test (AVT) for <i>Anthonomus grandis</i> (pyrethroids) in collaboration with IRAC Brazil	Q4 2017
	• Continuously monitor for weaknesses in OSR pest susceptibility testing methods	Ongoing
Provide summarised information on IRM strategies for key coleoptera pests	• Draft scientific paper on pollen beetle pyrethroid resistance monitoring results and impact 2010-2017 – a WG summary	Q1 2018
	• Active participation in EPPO OSR Integrated Pest Management Workshop in Berlin (Organising Committee & IRAC Coleoptera WG presentation)	Q3 2017
	• Draft summary poster on IRM data for non- <i>Meligethes</i> OSR pests	Q1 2018
Coordinate oilseed rape coleopteran pest sensitivity monitoring in EU	• Collaborate with public labs, regulators and other bodies involved in resistance monitoring of pollen beetle to prepare, share and interpret a joint set of monitoring data for 2017 season.	Q1 2018
	• Provide AVT test kits to support resistance monitoring activities	Q2 2017
Provide information to all stakeholders for coleoptera pest control in an IRM context	<ul style="list-style-type: none"> • Review and incorporate new learning's from OSR pest research, including 2017 and recent resistance monitoring, into IRAC IRM recommendations for oilseed rape. • Provide summary poster of learning's from 2017 pollen beetle susceptibility monitoring. • Update Coleoptera WG website content • Provide information on coleopteran pests for IRAC pest pages on website 	Ongoing Q4 2017 Ongoing Q4 2017

IRAC Sucking Pest WG Objectives 2017-18

Goals	Objectives	Target Completion Date
<p>Hot issues management</p> <p>Actions to minimise spread of resistant pests, monitoring resistance issues</p>	<ul style="list-style-type: none"> • <i>Myzus persicae</i> Follow-up with “implementation” of IRM Guidelines across Europe <ul style="list-style-type: none"> • Monitor vegetable crops and new areas in Europe • Monitor complaints globally and report liaise with researchers • <i>Bemisia tabaci</i> monitoring program (PROMIP/IRAC-BRA): Design IRM strategy in Brasil. • <i>Bemisia tabaci</i> (<i>T. vaporariorum</i>) updated poster version, incl. new MOAs • <i>Sitobium avenae</i> Follow-up with “implementation” of IRM Guidelines across Europe <ul style="list-style-type: none"> • Write local warnings in farmer papers • <i>Aphis gossypii</i> (neonicotinoid target site resistance) <ul style="list-style-type: none"> ▪ Monitor complaints globally and report liaise with researchers ▪ Develop IRM recommendations for Korea as template for future use ▪ Finalize / review poster: globally & local Korean language version 	<p>Ongoing</p> <p>2017</p> <p>Q2 2017</p> <p>Ongoing</p> <p>Ongoing 2017</p>
<p>Mid term issue managemnt</p> <p>Prepare IRM guidelines and test methods for pests with, or at risk of developing resistance</p>	<ul style="list-style-type: none"> ▪ <i>Euschistus heros</i>, check on MOA IRAC 01, 03, 04, with PROMIP/IRAC-BRA <ul style="list-style-type: none"> ▪ Follow up with monitoring efforts; Design IRM strategy ▪ Method validation and implementation (review vial test to IRAC approved methods) • <i>Bathycoelia distincta</i> Support research efforts in RSA (suspected PYR-resistance) • <i>Diaphorina citri</i> Validate & publish a Flush tube systemic test for IRAC Groups 23&28 • <i>Bactericera cockerelli</i> Activate monitoring, validate and publish a method, notably for IRAC 04 • Fruit fly species (pyrethroids-resistant olive fly suspected, Greece): Exchange about methodology and Pro-actively release recommendations (highlight value of current options / prevent use restrictions) • Identify missing IRAC materials addressing resistance issues and supply them to website 	<p>2017</p> <p>Q3 2017</p> <p>2017</p> <p>2017</p> <p>2017</p> <p>Observer</p> <p>Ongoing</p>
<p>Prepare for future Sucking Pest problems long term (avoidance)</p>	<ul style="list-style-type: none"> ▪ Establish a list of future problematic sucking pests, identify new tragets for IRAC SP WG work <ul style="list-style-type: none"> ▪ Collect reports on monitoring studies and publications, follow up field failures ▪ Create educational materials, test methods, IRM recommendations if needed ▪ Follow the monitoring of high risk species such as <i>Frankliniella occidentalis</i> (thrips), <i>Tetranychus sp.</i> (mites), <i>Nilaparvata lugens</i> (stinkbugs) <ul style="list-style-type: none"> ▪ Collect reports on monitoring studies and publications, follow up field failures 	<p>Q2 2017</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>

IRAC Lepidoptera WG Objectives 2017-18

Goals	Objectives	Target Completion Date
1. Maintain currency of the global IRM guidelines based on new experiences, new active ingredients, and app methods.	<ul style="list-style-type: none"> Ensure that country teams incorporate IRM guidelines into IRM training items. 	
2. Continue compliance process to align IRM recommendations among company product labels.	<ul style="list-style-type: none"> Compare country labels of different companies to discuss learnings, experiences and challenges. Conduct joint session of IRAC International Lep WG and country team(s) to discuss label examples. 	
3. Improve Lepidopteran educational and communication tools	<ul style="list-style-type: none"> Move country IRM recommendations to IRAC website. Complete a slide set using new insecticide IRM guidelines with examples and visuals. 	
4. Support country resistance action groups	<ul style="list-style-type: none"> Choose new global liaisons to communicate to country teams. Lep team companies identify country reps to participate in mtgs. Identify initiatives to improve International IRAC interactions with country teams Standardize IRAC country group names Update country resistance action group membership and emails 	
5. Develop methods for gap species.	<ul style="list-style-type: none"> Prioritize species Engage the Methods team to address the methods gap 	
6. Tuta task team	<ul style="list-style-type: none"> Audit and foster interactions among countries Update IRAC Tuta booklet and poster 	

IRAC Public Health WG Objectives 2017-18

Goals	Objectives	Date
Identify potential, new or existing resistance issues. Set up Team Working Groups or Focal Points as necessary	<ul style="list-style-type: none"> • Monitor and report to the Executive on any potential, new or existing national, regional or global resistance issues relating to Vectors and Hygiene pests, that could require action by IRAC • Investigate the viability of a US Public Health IRAC country group (possibly focused on <i>Aedes spp.</i> mosquitoes), support such a group if sufficient interest is found to create it 	Ongoing Q2 2018
Provide expert input into IRM initiatives with identified partners, interact with groups working in the same field and participate/organise relevant meetings.	<ul style="list-style-type: none"> • Set up a schedule of IRAC PH Team conference calls, meetings for 2017/18. Identify and invite relevant experts and observers from groups interested in Public Health IRM e.g. vectors, hygiene pests (WHO, BMGF, IVCC, etc.) to participate and promote IRAC as an expert technical group with such third parties • Lobby the WHO, VCAG, etc., in support of pragmatic IRM activities • Actively support and promote the RBM VCWG's "IRM MOOC" (Massive Open Online Course) <ul style="list-style-type: none"> • Produce and deliver relevant material • Review and provide the IRAC view of IRM 	Ongoing Ongoing Q1 2018
Formulate the IRAC position on ongoing questions and issues as these arise	<ul style="list-style-type: none"> • Promote the rational use of mixtures/combinations and synergists in VC • Actively engage with third parties to identify and promote best practice insecticide resistance monitoring, and results interpretation 	Ongoing Ongoing
Preparation of Public Health communication material	<ul style="list-style-type: none"> • Review and update IRAC educational material to reflect new products that have entered the VC market • Review and update IRAC educational material to reflect relevant new control paradigms, e.g. self-limiting traits, eave tubes, etc. • Seek opportunities to give IRM related presentations on behalf of IRAC at appropriate trade and scientific meetings • Seek opportunities to produce articles on IRM for trade journals, etc. • Investigate the opportunity to create a team communications rep, with the aim of improving and coordinating proactive team communications with third parties 	Q2 2018 Q2 2018 Ongoing Ongoing Q1 2018

IRAC Crop Biotechnology WG Objectives 2017-18

Goals	Objectives	Date
Drive Continued Latin America IRM Implementation	1) Work with Latin American countries to achieve advancements in IRM and refuge implementation <ul style="list-style-type: none"> • IRM workshop with appropriate participation • Pursue regulatory framework in Brazil/Argentina • Continue Argentina IRM coordinated implementation activities 	Ongoing
Enhance ETS IRM global modules	1) Work with ETS to improve IRM modules that ensures industry transparency on critical IRM framework success factors	Q2, 2018
Drive the coordination of integrated initiatives between trait & chemistry organizations	1) Develop criteria with Lepidoptera WG on what minimum standards we should hold companies accountable for regarding IRM and use of best management practices (IPM) 2) Develop ideas on how IRAC can help influence successful implementation of IRM through the business and field sales.	Q2, 2018
Ensure appropriate IRM and BMPs are developed in Asia and African countries	1) Technical alignment and implementation plans secured for SE Asia and India/Pakistan 2) Assisting IRAC-South Africa with IRM guidance for FAW in S. Africa	Q2, 2018
IRAC International Initiatives	1) Enhance IRAC web site 2) Develop cross-industry IRM educational training module	Ongoing

IRAC MoA WG Objectives 2017-18

Goals	Objectives	Target Completion Date
Review and update MoA Classification Scheme as required.	<ul style="list-style-type: none"> Evaluate classification of etoxazole as chitin synthase inhibitor Reassess classification of Group 10 - Mite growth inhibitors. 	Q4 2017
Classification process for non-traditional insecticides	<ul style="list-style-type: none"> Review registered non-traditional insecticides/miticides Prepare parallel classification scheme for non-traditional insecticides/miticides 	Q2 -Q4 2017
Enhance clarification for sub-grouping process	<ul style="list-style-type: none"> Establish detailed criteria & wording for distinguishing between subgroups prepare protocol and documentation Evaluate chemical fingerprint analysis on Group 1 and Group 3 insecticides 	Q2 -Q3 2017
Expand communication of MoA Classification Scheme changes	<ul style="list-style-type: none"> Generate list of key industry contacts for distribution of proposed MoA classification changes Establish 4-week comment period before finalizing and approval of suggested changes 	Q2 -Q4 2017
Develop MoA training presentation	<ul style="list-style-type: none"> Modify BASF slides MoA slide deck for IRAC use Develop a general MoA presentation (organized into broad categories: nerve & muscle, growth & development, respiration, midgut) that can be used at scientific meetings 	Q4 2017

IRAC Methods WG Objectives 2017-18

Goals	Objectives	Target Completion Date
Establish single contact point for insecticide and acaricide monitoring methods (core activities)	<ul style="list-style-type: none"> • Develop and validate bioassay methods, used to establish susceptibility baselines and monitor resistance, for key agricultural, horticultural, and public health pests. • Expand reference database of non-approved methodologies from the literature. • Continue to maintain and improve confirmed methods. 	Q1-Q4, 2017
To provide IRAC approved methods, so that data generated by independent researchers can be directly compared	<ul style="list-style-type: none"> • Deliver 2 new IRAC approved methods <ul style="list-style-type: none"> ○ Validate cockroach and bedbug topical methods 	Q4, 2017 Q4, 2017
Improve communication to our target audience (promotional activities)	<ul style="list-style-type: none"> • Initiate new methods video (<i>Bemisia</i> method # 16) • Complete filming and begin editing. 	Q3, 2017 Q4, 2017