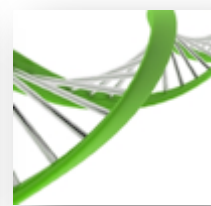
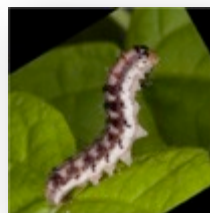




Insecticide Resistance Action Committee

SMART GOALS & OBJECTIVES 2014 - 2015



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 2014-15

IRAC Executive – Goals

- Coordinate and facilitate the work of IRAC in accordance with the IRAC Mission
- Facilitate cooperation and communication on insecticide resistance and IRM including insecticidal traits
- Encourage formation of IRAC Task Teams to address key resistance threats
- Leverage IRAC through the CropLife network
- Encourage formation of new Country Groups to address local IRM issues; take advantage of existing Diamide WGs

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 and local CropLife associations
- Encourage WGs to hold 4-6 audios and at least one F2F each year to review activities
- Emphasis to all IRAC members of the importance of following the IRAC Constitution including the Code of Conduct and Guidelines on Antitrust.

IRAC Executive Deliverables 2014-15

IRAC Executive – Deliverables - 2014

- New ways of working are established within key country groups which allows collaborative work between IRAC representatives from Biotech and Crop protection alongside key regional experts (ext. services, crop advisors, universities)
- Joint IRM recommendations for Traits & Chemicals are in place where relevant (BR, AR, US).
- Deliver a basic IRM training module to fit CLI training program (non scientific language; e.g.. Cartoon like messages or video); Focus on one or two programs a pilots in 2014.
- Guidelines for use of IRAC logo & documents – copyrights
- Attract New company members; invite ISHIHARA, NISSAN, PHILAGRO, MITSUI, ARYSTA, SIPCAM, NISSO, BELCHIN, CHEMTURA

IRAC Steering Team Objectives 2014-15

Goals	Objectives	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 2014/15 (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>Sept 2014</p> <p>Sept & Mar 2014/15</p> <p>Mar 2014</p> <p>Sept 2014 & 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. Investigate the option of developing joint baseline/monitoring programs to support dossiers as a way of providing cost synergies and benefits for new IRAC members – Pending on confirmation from CLI. 	<p>Sept & Mar 2014/15</p> <p>May & Sep 2014</p> <p>June/Sept 2014</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, MITSUI, ARYSTA, SIPCAM, NISSO, BELCHIN, CHEMTURA. 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 2014/15</p> <p>Sept & Mar 2014/15</p> <p>Ongoing</p>
Maintain oversight of the goals, objectives and activities of the WGs/ CGs to ensure effective and efficient coordination of local and 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 2014</p> <p>ongoing to March 2015</p>

IRAC Crop Protection Objectives 2014-15

Goals	Objectives	Date
Identify potential, new or existing resistance issues. Set up, re-establish or disband Crop Working Groups as necessary	<ul style="list-style-type: none"> • Monitor and report to the Executive any potential, new or existing national, regional or global resistance issues that may require action by IRAC. Research the issues and report to the Executive with a recommended plan of action including the extent of the problem and whether a Country/Regional Group or a Crop Protection WG should be established. • Set up, re-establish (or disband) pest, crop pest complex or other WGs as required for 2014/15. 	On-going
Increase IRAC footprint	<ul style="list-style-type: none"> • As much as possible work with the respective teams to convert Lep/Diamide country groups into IRAC Country Groups. Establish likely contenders 	On-going
Develop IRM guidelines	<ul style="list-style-type: none"> • Work with the Country Groups and WGs to develop IRM guidelines for 1-2 key crop/pest complexes where there are resistance problems e.g. Soya Leps in BR, AR. Aim to publish one example during each 6-month period • Develop agreed principles of IRM using insecticide chemistry and insect traits 	Sept 2014 March 2015 Q4 2014
Development of joint baseline/monitoring programs	<ul style="list-style-type: none"> • Investigate the interest by member companies of the development of joint baseline/monitoring programs to support dossiers (as per a Task Group). Explore costs and synergies that would potentially add value to new members 	Dec 2014
Investigate and make recommendations on the extent that IRAC should be involved in other IPM activities that impact IRM	<ul style="list-style-type: none"> • Topics include but not limited to: <ul style="list-style-type: none"> ○ Should the use of beneficial insects for IRM be considered by IRAC ○ Development of a poster for alternative control methods e.g. biologicals 	Q4 2014 Q4 2014
Continue to produce high quality educational material and IRM educational tools	<ul style="list-style-type: none"> • Work with the respective Crop WGs, C&E Team and where possible CropLife to develop IRM educational material e.g. the new IRM mini-booklet 	On-going

IRAC Coleoptera WG Objectives 2014-15

Goals	Objectives	Date
To expand the remit of the team to include prioritised activities against a wider range of coleoptera pests.	<ul style="list-style-type: none"> To provide information (resistance monitoring, literature review, information posters, etc.) on key coleopteran pests other than OSR pest species. To encourage projects and information to be shared on other resistance concerns involving Coleopteran pests. 	CPB Poster Q4, 2014 MOA poster Q4, 2014
To provide researchers, validated methods for measuring the susceptibility of coleopteran pests.	<ul style="list-style-type: none"> To finalise the insecticide sensitivity of CRW larvae and adults to a range of insecticides used for their control. Update the IRAC n°27 on indoxacarb with regards to test kit storage 	Larvae Q2, 2014 Adults Q2, 2014 Q4, 2014
To provide summarised information to growers and influencers on control options and strategies for controlling key coleoptera pests.	<ul style="list-style-type: none"> To review current status on resistance flea beetle and seed weevil in European OSR To produce a electronic version of a tri-fold which provides information on resistance, IRM advice and susceptibility monitoring assays for European oilseed rape pests. 	Q4 2014 Q4 2014
To co-ordinate oilseed rape coleoptera sensitivity monitoring in European oilseed rape crops, using validated methodologies.	<ul style="list-style-type: none"> Collaborate as member team companies and cooperate with public labs, regulators and other bodies involved in resistance monitoring of pollen beetle in to assemble, share and interpret coordinated set of monitoring data for 2014 season. To Validate and publish IRAC test method on flea beetle and seed weevil 	Q1, 2014 Q2, 2014
To provide oilseed rape pest sensitivity information to growers and regulators, so that informed decisions on oilseed rape pest control and resistance management can be made.	<ul style="list-style-type: none"> Review and incorporate new learning's from OSR pest research, including 2014 resistance monitoring, into IRAC IRM recommendations for oilseed rape. Provide summary poster of learning's from 2014 pollen beetle susceptibility monitoring. Update summary poster of OSR pest resistance management recommendations. Only after receiving the results on the 2014 PB monitoring, study from 2007 to 2014 the matching between the change the susceptibility of pollen beetle populations to pyrethroids and that of field practice in controlling PB. This could be done in UK, FR, DE and PL 	Q4, 2014 Q4 2014 Q4, 2014 Q2-2015

IRAC Lepidoptera WG Objectives 2014-15

Goals	Objectives	Timeline
Maintain currency of the global IRM guidelines based on new experiences and new active ingredients.	<ul style="list-style-type: none"> Lepidoptera WG companies check on internal acceptance of current guidelines Review and update our global IRM guidelines (label language, poster) 	Q3, 2014
Re focus support of country IRAC Lepidoptera working groups to reach higher IRM levels	<ul style="list-style-type: none"> Open Lepidoptera/diamide WG actively to all companies interested, all companies nominate members for the 22 country WGs Focus on with lower diamide IRM level: Australia, Italy, Japan, Korea, Malaysia, Mexico, Morocco, ... IRM labels harmonization among the companies has priority 	Q3, 2014
Hasten company participation and compliance within country Lepidoptera working groups to communicate MoA, implement IRM strategies, and align IRM label language.	<ul style="list-style-type: none"> Move the existing WGs from planning stage (develop recommendations) to action stage (implementation of IRM recommendations and educational plans) Review of country WG focus (pest, crops, etc.) Increase participation of Global Lepidoptera WG members in Country WG meetings Improve compliance of the labels with the IRM guidelines As soon as resistance is confirmed in a country: Global Lepidoptera WG will propose a mitigation plan containing options of reducing the resistance pressure Create global IRM communication/content targeting internal and external customers 	Q4, 2014
Create baseline insect susceptibility data for future data comparisons.	Prior to a new active ingredient launch it is important to establish the baseline susceptibility level of the most important pests of selected crops. The main objectives of this effort are product stewardship, creating the capacity to respond to performance issues, and complying with regulatory requirements, if applicable. The Lepidoptera WG recommends that bioassays be conducted according to the methods approved by IRAC. When IRAC approved methods are not available for specific pests, the companies should work to generate new methods through IRAC's Methods WG.	Q4, 2014
Influence registration/government authorities	Define topics to transfer to registration/government authorities	Q4, 2014
Educational program	Complete Lobesia poster	Q4, 2014

IRAC Sucking Pest WG Objectives 2014-15

Goals	Objectives	Timeline
Short term actions to minimise spread of resistant pests	<ul style="list-style-type: none"> • <i>Myzus persicae</i> Support with analyses for R81T. Update recommendations as required. Check German populations • <i>Bemisia tabaci</i> propose new solutions for Entomological Congress Sept 14-18 • <i>Sitobium avenae</i>. Prepare alert for NEU in view of few MOAs 	2014 Q1 2014 Q3 2014
Prepare IRM guidelines for pests with, or at risk of developing resistance in the mid term	<ul style="list-style-type: none"> ▪ <i>Euschistus heros</i>, (neonicotinoids, pyrethroids, OP's Brazil) <ul style="list-style-type: none"> ▪ Support monitoring efforts in Brazil eg PROMIP/IRAC-BR, ▪ Assist Brazil in validating and implementation of vial test (add vial test to IRAC approved methods) • <i>Myzus persicae</i> finalise poster to reflect new MOAs • <i>Diaphorina citri</i>, Asian Citrus Psyllid – update global poster with new MOA <ul style="list-style-type: none"> ▪ Validate the ACP method in BR (BASF) and USA (Syngenta) ▪ Consider Imidacloprid, Lambdacyhalothrin, Chlorpyrifos as key MOAs • <i>Bemisia tabaci</i> update poster with new MOA guidelines • <i>Aphis gossypii</i> (neonicotinoid target site resistance) <ul style="list-style-type: none"> ▪ Develop IRM recommendations for Korea as template for future use • <i>Lygus sp</i>, USA Cotton engage with IRAC US to assess need for action • <i>Nilaparvata lugens</i>. Monitor reports on BPH resistance in APAC to different MOAs. • Neonicotinoid Guidelines – update global document in view of new subgroupings 	Q3 2014 Q2 2014 Q3 2014 Q3 2014 Q1 2014 2014 2014 1Q 2014 3Q 2014 2014 2014 2014
Prepare for future Sucking Pest problems long term (avoiding resistance development)	<ul style="list-style-type: none"> ▪ <i>Diaphorina citri</i> (ACP) <ul style="list-style-type: none"> ▪ Collect reports on monitoring studies and publications, follow up field failures ▪ Check in South Asia region IN, PK, CN for reports of field failures on ACP ▪ <i>Aphis gossypii</i> (neonicotinoid target site resistance) <ul style="list-style-type: none"> ▪ Monitor complaints globally and report liaise with researchers ▪ <i>Dichelops melacanthus</i> (neonicotinoids, pyrethroids, OPs) <ul style="list-style-type: none"> ▪ Establish baselines using Euschistus methods 	2014 2014 1Q2014 2014 Q4 2014

IRAC Public Health WG Objectives 2014-15

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 that could require action by IRAC e.g. Vectors and Hygiene Pests. Research the issues and report to the Executive on a recommended plan of action including the extent of the problem and whether and how it should be best tackled. Set up appropriate PH Team WGs as deemed appropriate for the 2014/15 year. • Investigate the viability of a US “Specialty” IRAC country group (PH/PPM plus other non-ag insecticide uses), support such a group if sufficient interest is found to create it 	On-going Q4 2014
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 2014/15. Identify and invite relevant experts and observers from groups interested in Public Health IRM e.g. vectors, hygiene pests (WHO, Gates Foundation, IVCC) to participate and ensure that IRAC as an expert group provided input into relevant IRM initiatives. • Develop routes of communication with third parties, to disseminate IRM information, e.g. LinkedIn group • Coordinate activities more closely with CLI VCPT • Support WHO, VCAG, etc., with IRM activities, in liaison with CLI VCPT as appropriate 	On-going
Formulate the IRAC position on ongoing questions and issues as these arise	<ul style="list-style-type: none"> • Consider insecticide resistance risk assessment approach for VC interventions • Promote the rational use of mixtures/combinations and synergists in VC 	Q4 2014 Ongoing
Preparation of Public Health communication material	<ul style="list-style-type: none"> • Update posters, with particular emphasis on hygiene pests and larvicides • Production of educational presentations, based on VM, that can be used by third parties • Develop training modules that can be used for continual education credits in PPM industry • Produce articles on IRM for trade journals, etc. • Present PPM IRM paper at ICUP 2014 	Q3 2014 Q4 2014 Q4 2014 On-going Q2 2014

IRAC Crop Biotechnology WG Objectives 2014-15

Goals	Objectives	Date
Successfully launch CLI Integrated Biotech IRM Strategy	<ol style="list-style-type: none"> 1) Incorporate the membership from key IRAC committees (stewardship, communication, regulatory, biotech, and ETS) to build a harmonized, consistent framework for developing local integrated IRM solutions around the globe. 2) Develop a work plan (including needed resources) and define the role of a global, integrated approach to IRM 3) Through ETS Develop global frameworks for implementing IRM at local level which take into account technical, cultural, training, and regulatory needs 	<p>Q1 2014</p> <p>Q3 2014</p> <p>Q1 2015</p>
Enhance/build IRM infrastructure in key tropical environments (Brazil & Argentina)	<ol style="list-style-type: none"> 1) Design a Brazilian IRM framework that provides the foundation for sustaining current and future insect control traits in these tropical environments. 2) Enhance the comprehensive set of “Best Management Practices” to include IRM- and IPM-based considerations 3) Guide Argentine Seed Association (ASA) to develop country technical recommendations and IRM infrastructure 	<p>Q2 2014</p> <p>Q3 2014</p> <p>Q4 2014</p>
Support adoption of IRM program by tech providers and regulators in Vietnam and Indonesia	<ol style="list-style-type: none"> 1) Establish IRM guidelines to regulators in Vietnam and Indonesia following over-arching principles developed for southern Asia through CropLife Asia 	<p>Q2 2014</p>
Support Global IRM Workshops	<ol style="list-style-type: none"> 1) Central America workshop occurred in 2013; need to continue to establish IRM working framework 2) Work with Africa BIO to develop an IRM workshop next to the ISBGMO conference in November, 2014 	<p>On-going</p> <p>Q4 2014</p>
Work collaboratively with IRAC Crop Protection team to integrate IRM for traits & chemistry	<ol style="list-style-type: none"> 1) Finalize an IRAC position paper on use of insecticides with traits 2) Create task force to define IRM-based BMPs for tropical environments in Brazil that include the members of multiple key sub-committees 	<p>Q3 2014</p> <p>Q3 2014</p>

IRAC Methods WG Objectives 2014-15

Goals	Objectives	Date
Establish single contact point for insecticide and acaricide monitoring methods (core activities)	<ul style="list-style-type: none"> • Populate eMethods tool with a range of methods used to measure insecticide susceptibility against key agricultural, horticultural, and public health pests. • Methods sourced from literatures, companies, and external contacts. • Continue to maintain and improve confirmed methods. Review older methods for suitability. • Populate eMethods with additional references. 	Q1-Q4, 2014
To provide IRAC approved methods, so that data generated by independent researchers can be directly compared	<ul style="list-style-type: none"> • Deliver 3 new IRAC approved methods. • Improve access to methods on IRAC website (e.g. links on pest pages) • Initiate 1 new eVideo (TBD: stink bugs or Asian citrus psyllid) 	Q4, 2014 Q2, 2014 Q4, 2014
Improve communication to our target audience (promotional activities)	<ul style="list-style-type: none"> • Promote Methods WG resources through posters and presentations at professional meetings. • Begin preparing eVideos for JoVE publication (if proposal/ funding is approved by Executive Committee) 	Q4, 2014 Q2, 2014

IRAC MoA WG Objectives 2014-15

Goals	Objectives	Date
Continue to review and update the MoA scheme as required	<ul style="list-style-type: none"> Update as needed the current version 7.3 to include any changes and/or new actives. Update the MoA booklet to correspond to the latest version of the classification 	<p>Q2 2014 Q2 2014</p>
Develop new versions of the MoA structure poster as needed	<ul style="list-style-type: none"> Simplify the structure poster (English and other language versions) and post on the website 	Q3 2014
Target site mutation table	<ul style="list-style-type: none"> Complete table (Excel Format) and post on the website 	Q2 2014
Develop new MoA posters and update existing posters as required	<ul style="list-style-type: none"> Work with the C&E Team to incorporate any updates from new versions of the MoA scheme into the general and pest MoA posters Complete the Coleoptera MoA poster Complete the resistance mechanisms presentation 	<p>Q2 2014 Q2 2014 Q3 2014</p>
Develop MoA training slides	<ul style="list-style-type: none"> Provide MoA diagrams for the different broad MoAs (IGR vs. neural vs. respiration) for use in MoA publications and presentations Develop a general MoA oral presentation that can be used for training and as a resource for explaining MoA groups. 	<p>Q1 2015 Q1 2015</p>
MoA page -IRAC website	<ul style="list-style-type: none"> Work with C&E team to update e-classification on IRAC website Work with C&E team to Update MoA WG page 	<p>Q3 2014 Q3 2014</p>
Provide additional information on topics important to MoA and IRM	<ul style="list-style-type: none"> Listing of key references for each MoA group <ul style="list-style-type: none"> - Objective is to have key MoA studies - not necessarily exhaustive - Use of reviews for older chemistries 	Q3 2014
Update of MoA charter	<ul style="list-style-type: none"> Objective is to include MoA Team's responsibility for developing tools and communicating the classification scheme 	Q2 2014
Address DIY Issue	<ul style="list-style-type: none"> Add prominent "IRAC Mode of Action Classification" link to home page Add prominent "Obtain classification of new insecticide" link to classification page Other controls to prevent DIY classification 	<p>Q2 2014 Q2 2014 Q2 2014</p>
Implement MoA Classification update notification list	<ul style="list-style-type: none"> Compile list of people who need to be notified of updates to MoA classification Provide link for people to sign up for MoA classification updated notification 	<p>Q2 2014 Q2 2014</p>

