

The **International Consortium for PPE for Pesticide Operators and Re-entry Workers** is a neutral entity that enables stakeholders to work together on PPE related issues. Resources and expertise provided by stakeholders that represent federal agencies, the PPP industry, and research/testing institutions in several countries provide the synergy required to address issues that are of mutual interest. The leadership for the Consortium is provided by a Management Committee that consists of individuals with varied perspectives, experiences, and education.

- The kick-off meeting was hosted by the French Ministry of Agriculture in Paris in July 2014.
- The 2015 Annual Meeting was hosted by BASF France in Ecully, France in June.
- The 2016 Annual Meeting will be hosted by Centro Nacional de Medios de Protección in Seville, Spain in October.

The Consortium has been focusing on international PPE standards that provide a simplified system of PPE selection that balances comfort and protection. This simplified system can be adopted by regulatory agencies to effectively communicate requirements to users.

- Research in 2014-15 focused primarily on methodology-based studies required for development of international standards.
- In 2015-16, in addition to research initiatives, Consortium members worked with stakeholders in France to plan implementation of protective clothing performance standard ISO 27065. The standard is currently being balloted as a harmonized EN/ISO standard.

Highlights of 2015-16 activities as well as future plans are presented in this newsletter.



Members and Invited Guests at the Consortium Annual Meeting in Ecully, France.

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- Implementation of New PPE Requirements
- Garments for Re-entry Studies
- Comfort Studies
- ICPPE - Consortium Coordination

2016 Annual Meeting - Networking to Find Solutions

The 2016 Annual Meeting will be held on October 27th and 28th in Seville, Spain. The annual meeting will focus on EN/ISO 27065, a performance-based standard to communicate protective clothing requirements on pesticide labels. Small group discussions during the meeting will provide stakeholders from seven to eight countries an the opportunity to discuss the relevance of the standard in their respective countries. The meeting will also include:

- Consortium reorganization
- Standards update
- Why ISO 27065: Perspectives from Brazil and France
- Presentation on the re-entry study conducted in France

Future Plans

- Generic databases for penetration and permeation
- Decontamination studies
- Thermo-physiological comfort

Standards Updates

International standards provide the means to test and certify PPE. The following standards are being balloted as ISO/EN standards.

EN ISO DIS 27065 Protective clothing — Performance requirements for protective clothing worn by operators applying liquid pesticides and for re-entry workers

- In June, EN ISO 27065 was submitted for the 3rd DIS ballot. Enquiry (DIS) ballot is expected to open in August and be published in September.

EN ISO DIS 19918 Protection against chemicals — Measurement of cumulative permeation of chemicals with low vapour pressure through materials

- This standard will be used to measure the permeation of test chemical through Level 3 garments and Level 1 and 2 glove materials.
- Enquiry (DIS) ballot is scheduled to open on 2016-08-16 and close on 2016-11-08.

EN ISO DIS 18889 Protective gloves for pesticide operators— Performance requirements

- The draft will be discussed once more at the WG8 meeting to be held in November in Kettering (UK).

The Consortium has been conducting studies to support development/revision of standards used to measure pesticide penetration and permeation. Findings of the studies have been presented at the ISO, CEN, and PPE conferences.

Test Chemical

ISO 27065 requires Prowl® 3.3 EC, a BASF product registered in the US, for penetration and permeation testing. BASF France worked closely with BASF USA and the ISO Project Leader to reserve sufficient quantity of Prowl® 3.3 EC for laboratory testing. BASF France serves as the point of contact for laboratories to obtain the test chemical. They worked with colleagues in countries with stringent requirements for the import of pesticides, even in small quantities. Plans are to work with the PPP industry to develop a surrogate product in the next two years.

Interlaboratory Study

An interlaboratory study was conducted for the new permeation test method. The data were used to calculate the repeatability and reliability. The information was included in the EN ISO DIS 19918 draft. The Consortium was responsible for the coordination.

Spray Test

ISO 17491-4, the spray test used to determine the performance of garments, is used for ISO 27065 as well as other standards. Issues with spray distribution were observed during testing at IAC in Brazil. The Consortium is now working with other colleagues to conduct studies that would be used as the basis for the revision of the standard.

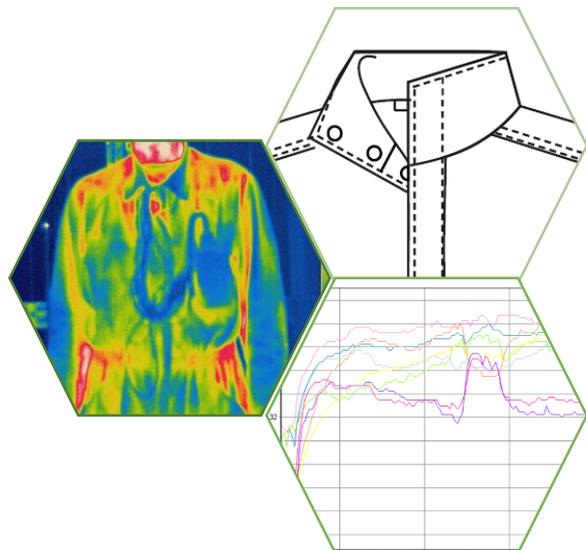
CONSORTIUM CONNECTION: Tests for PPE certification will be demonstrated at the 2016 Annual Meeting.

Research on Thermo-Physiological Comfort

The balance between comfort and protection is important. Therefore, as a Consortium research activity, a study is being conducted to measure the thermo-physiological comfort of PPE. Preliminary tests were conducted in an environmentally controlled chamber using the protocol established for the study. Test subjects accustomed to agricultural activities were selected. A baseline study is being conducted using garments representative of those worn by operators in the US. Testing includes a questionnaire completed by the test subject.

Subject to availability of funds, the following research will be conducted:

- Comparison of certified Level 1 and 2 garments.
- Comparison of garments made with the same fabric but different garment design.
- Comparison of field and laboratory studies using the same garments.



Planning for Implementation of Performance-based Requirements

In the last year, French officials decided to use revised ISO 27065 Level 1 as the base protective clothing requirements for pesticide operators and re-entry workers. A master plan was developed by key stakeholders in France and members of the International Consortium for the implementation of performance-based requirements.

Validation of ISO 22608 Method A (pipette test) for Testing and Certification

Fabrics from studies in the late 2000s were tested with Prowl® 3.3 EC by two laboratories in Brazil and France. Test results for the “old Mauser coverall fabric” were compared with the fabric that is being produced now. Test results from the 2000s were similar to those from tests conducted in 2015. Data validated that percent penetration of 5% Prowl® 3.3 EC through the Mauser coverall fabric (used as the representative fabric) is the same as in tests conducted in the 2000s. Note: The Mauser coverall was widely used in Europe for operator exposure studies.

Development of a Generic Database for Risk Assessment

Prowl® 3.3 EC was chosen as the test chemical representative of the worst case scenario based on studies conducted in the early 2000s in the US. The decision was made to validate this test chemical with formulations used in Europe. The stakeholders in France agreed to:

- Test the “Mauser coverall” with 46 PPP formulations (including six pendimethalin)
- Test four fabrics with 10 formulations similar to those with higher percent penetration.

The product name and active ingredient of formulations provided to members of UIPP were coded to ensure confidentiality. A process has been established to ensure the integrity of the data in the database.

Availability of Certified PPE

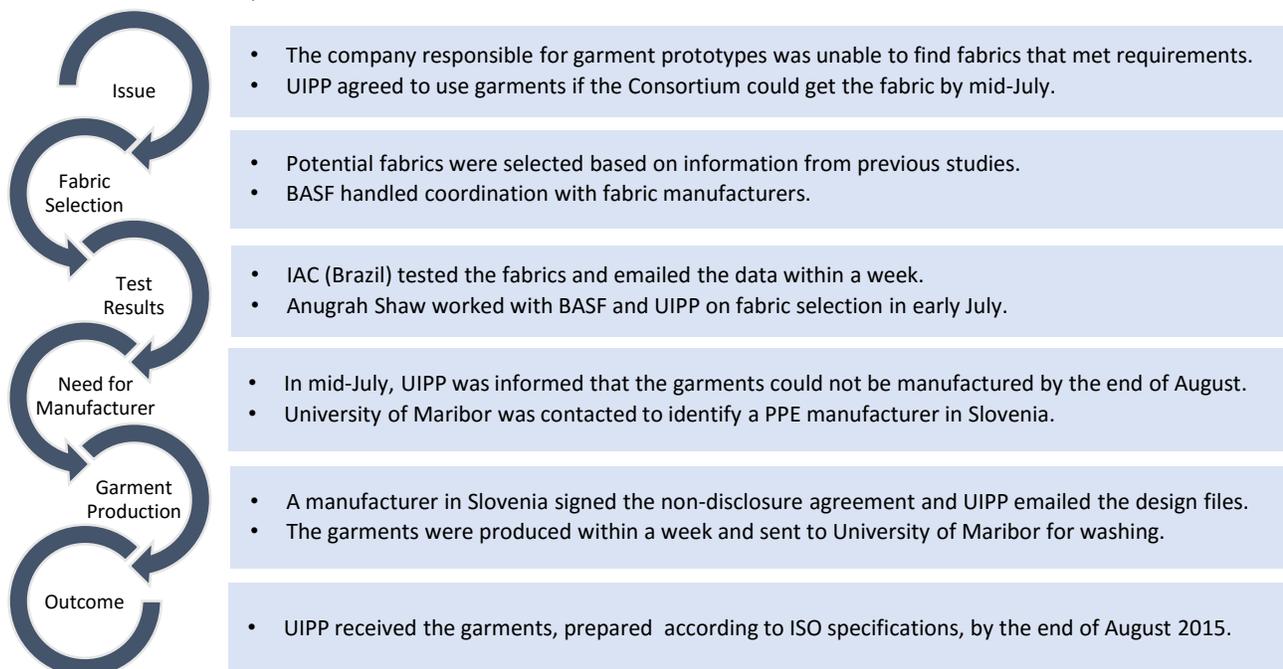
The French authorities and some of the PPE manufacturers are working closely with fabric and garment manufacturers to ensure availability of certified PPE. For example:

- An October meeting was held in Paris to inform fabric and garment manufacturers of the testing requirements and the process for certification of PPE.
- Fabrics available in France/Europe have been tested to identify those that meet requirements.

CONSORTIUM CONNECTION: The 2016 Annual Meeting will include discussion about compliance with PPP and PPE Directives in Europe, use of a generic database for risk assessment, and PPE information on PPP product labels.

Networking to Find Solutions: Garments for a Re-entry Study in France

Prior to the Consortium meeting in June 2015, the decision was made by Union de l'Industrie de la Protection des Plantes (UIPP) to use garments that did not meet the Level 1 requirements as the company responsible for providing the garments informed UIPP that they were unable to find fabric that met the ISO 27065 Level 1 requirements. The example below demonstrates how the Consortium used its international network to provide solutions.



CONSORTIUM CONNECTION: The 2016 Annual Meeting will include a presentation on the results of the re-entry study.

Future Plans

The scope of the International Consortium is being expanded to include research as well as coordination required for the implementation of performance-based standards. The Management Committee will continue to provide leadership for Consortium activities. Annual meetings will be used for members to discuss the topics, prioritize issues, and identify teams of experts and stakeholders to support initiatives.

The coordination of Consortium activities will be provided by the International Center for PPE for Pesticide Operators and Re-entry Workers (ICPPE). Funds received from sponsors will be used for activities identified by the sponsors. European Crop Protection Association and UIPP have agreed to provide funds to support ongoing activities in France and protective clothing initiatives that are of importance in Europe.

ICPPE will be responsible for:

- Development and coordination of collaborative research projects.
- Development and support for harmonized international standards.
- Facilitation of national and international dialogue among stakeholders.
- Development and maintenance of an interactive website for easy access to information. Password protected sections to allow internal communication.
- Administrative support including planning of annual meetings.
- Identification of potential collaborations to expand the network.

Future Plans

International Standards

- Development of a surrogate test chemical
- Implementation of 27065
- Revision of ISO 17491-4, "the spray test"
- Interlaboratory studies

Research

- Decontamination studies
- Comfort studies

Consortium Connection: The scope of the Consortium is being expanded to include coordination in implementation of standards. Changes proposed by the Consortium Management Committee will be discussed at the 2016 Annual Meeting.

About ICPPE

The International Center for PPE for Pesticide Operators and Re-entry Workers (ICPPE) was established at the University of Maryland Eastern Shore (UMES) in 2015. Research on protective clothing for pesticide applicators was initiated at UMES in the late 1980s. The Center builds upon the research conducted at UMES as well as collaborative research and leadership provided by Dr. Anugrah Shaw in the development of international standards. The Center enables UMES to leverage ongoing collaborative research and planned outreach activities, funded through the US Department of Agriculture, with expertise and an international network to contribute to the health and safety of pesticide operators.

Do you think you could contribute to our goal of networking to find solutions?

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