Dear Stéphane,

As you may have gathered from the previous communications, I have been involved in operator safety in general, and PPE for pesticide operators in particular, for over three decades. I take great pride in the accomplishments achieved with the research and standards development initiatives.

Research: I am a Professor with expertise in Textiles (Professor of Textiles) who has been involved in research on PPE for pesticide operators at the University of Maryland Eastern Shore (UMES) since mid-1980's. Since then, I have been a member of the multi-state research project for PPE that was initially established before I joined the group. The researchers from universities in the US, with interest in PPE research, work collectively to develop a project proposal (5-year cycle). My research is funded as part of the multi-state research by the UMES Agriculture Experiment Station with funds received from USDA. Research for the two articles published in 2016 was fully funded as part of this multi-state project; the co-author is a statistician who conducted the statistical analysis and thus served as the co-author. Other methodology development research, to support development and validation of penetration and permeation test methods, has been via collaborative projects for which each institution/organization was responsible for covering their cost.

Standards: The new work item proposals for the performance specification standards were approved by ASTM and ISO (submitted by ANSI) in 2006. The draft was submitted to ASTM and ISO committees at about the same time. ISO has already provided you the additional information for 2017 version as well as the process standards have to follow for approval as ISO standards.

Project Coordination: A multidisciplinary approach that includes stakeholders from PPE and PPP sectors is necessary to move the needle on operator safety. PPE standards is the "common language" to communicate the requirements. During my tenure I have worked with several entities to move towards a common goal: operator safety. Graphical representation of the network in the 2016 presentation mentioned in one of your questions, illustrates the wide range of stakeholders that have been in some way engaged or impact operator safety. As can be seen from the slide, it is important to engage stakeholders and relevant organizations to improve operator safety. For example, international standards do not serve any purpose if they are not used. Risk assessors and risk managers play an important role in addressing risk mitigations that are accepted by the operators. When stakeholders work in silos, they often view issues through their "filters" rather than a more balanced holistic view. As a result, there is a higher possibility that the outcome may not achieve the desired goal – operator safety.

Having worked with many of the entities, the need for collaborations was evident. Discussions among stakeholders in two international symposia led to the establishment of the International Consortium for PPE for Pesticide Operators and re-entry workers in 2014 to work on operator safety in general, and PPE in particular. In the subsequent year, approval was granted by UMES for the establishment of the International Center for PPE for Pesticide Operators (ICPPE). The Center has been responsible for the coordination of the International Consortium for PPE for Pesticide Operator and Re-entry Workers. ICPPE is a neutral entity established to advance research, outreach, and other PPE related activities through partnerships with other institutions and organizations. ICPPE connects **Policy Makers, Risk Assessors, Private Industry, Scientists, Educators** and other **Stakeholders** to promote the health and safety of pesticide operators and re-entry workers. Needless to say that each stakeholder has their own lens through which they view operator safety. The mission for their respective organization is vastly

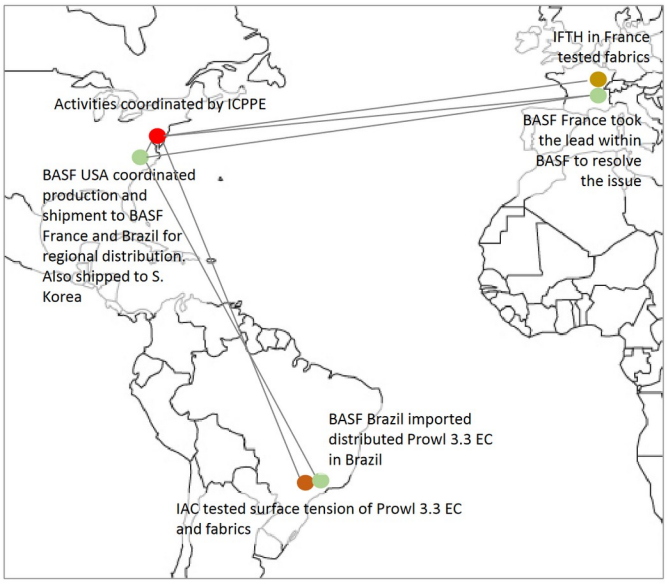
different. However, interest in addressing operator safety and PPE for mitigation is what we can work on collectively. The checks and balances are in place by focusing on the issues that need to be addressed and then work collectively towards achieving the goal. For projects (consortium and other projects) coordinated by ICPPE, the stakeholders decide collectively the issues and then we decide who can do what to find solution. In other words, projects are outcome driven rather than funding driven.

I will use the following question you have to explain how stakeholders work collectively. **Your question " A presentation you made in 2016 indicates: "UMES worked with BASF and the labs in Brazil and France to resolve the issue" and "I worked with BASF and UIPP on fabric selection in early July."**

The two quotes you have used are from two separate slides on initiatives that were not connected.

"UMES worked with BASF and the labs in Brazil and France to resolve the issue" is taken from the following slide that illustrates how we were able work collaboratively; validation and availability of test chemical was achieved through networking. BASF provided the test chemical and worked internally to make it available to the labs in various countries. UIPP had no role in this. Testing in Brazil was done by IAC, and funds for testing in France was provided by Ministry of Agriculture.

Interconnectedness through Networking

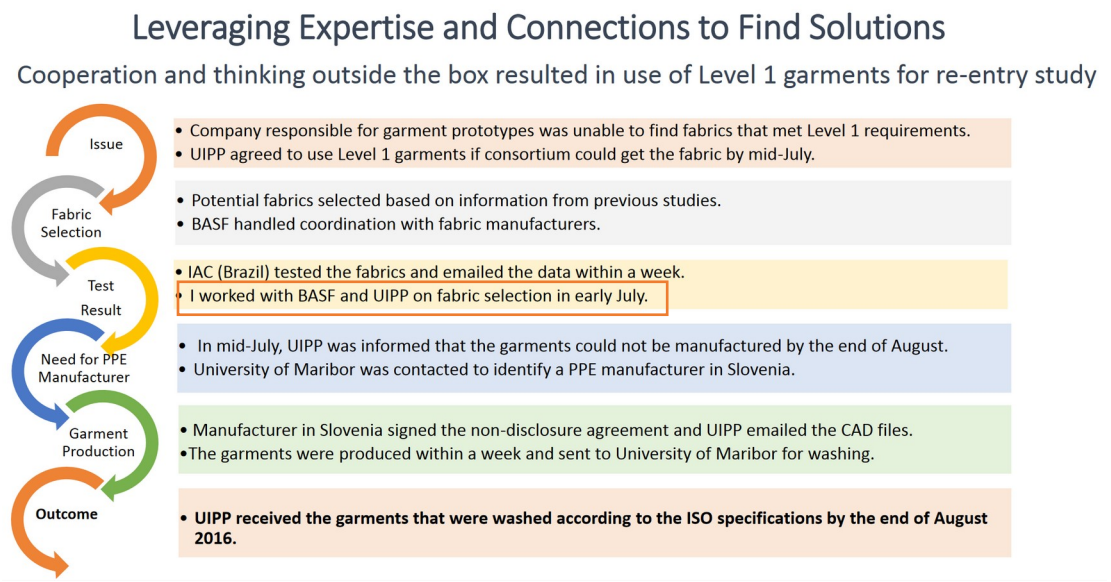


Test Chemical for ISO standards

- Prowl® 3.3 EC selected based on studies in 2000s
- Prowl® 3.3 EC availability and consistency issues raised by ISO and CEN members
- BASF France worked with BASF USA to secure sufficient products to support testing for 2 years
- BASF France distributed in EU; BASF Brazil in Brazil; BASF USA in other countries
- The surface tension measured in Brazil and data compared with 2003 US data
- Fabric from studies in 2000s were sent to Brazil and France for validation of ISO 27065 requirement
- UMES worked with BASF and the labs in Brazil and France to resolve the issue

Outcome: Integrity of the standard maintained through validation and the availability concerns expressed by notified bodies were addressed

"I worked with BASF and UIPP on fabric selection in early July" was text for a different initiative for re-entry worker safety. Given the time constraints, at that time, it seemed an impossible task to meet the deadline. This is a great example to illustrate networking to find solutions with no additional funds.



The synergy yielded outcomes that have resulted in many different achievements: development of the permeation cell with no copyright claims, development of a surrogate test chemical addressing test chemical concerns, validation of the test method through interlaboratory testing.

Hopefully the article you write will communicate to the readers the need for us to work together to address operator safety. I firmly believe that if we want to make a difference in improving operator safety, it has to be done collectively.