



IAPPS NEWSLETTER

Number XII December, 2005

A RESOURCE FOR CURRENT GLOBAL IPM INFORMATION

An agreement between the International Association for the Plant Protection Sciences (IAPPS) and the Consortium for International Crop Protection (CICP) provides Association members with no-cost subscriptions to the IPMnet NEWS, a periodic electronic newsletter published by the Consortium. Thus, some background about the NEWS--its aims, history, and accomplishments--may be of interest.

The Consortium traces its roots back more than a quarter century and was among the pioneer entities engaged in researching and fostering IPM on a global scale. By the early 1990's conditions had shifted and CICP encountered funding constraints that limited its activities. The Consortium's directors decided that, in an era when the world wide web was quickly becoming an important information channel, a periodic, electronic, IPM-oriented communication would be a cost effective means of furthering a basic CICP goal of freely and broadly disseminating IPM information, and additionally would be an efficient method for reaching a geographically dispersed readership. IPMnet was established in late 1993 when it launched, and has continued to maintain, a website presence as well as the directly emailed IPMnet NEWS (newsletter). The NEWS has been published every month since October 1993, but for several reasons will change over to a six-week interval schedule in September 2005. As of 01 September 2005, the NEWS had published 141 issues.

The NEWS subscription list began in 1993 with 291 email addresses distributed across 18 nations. Today, the subscription list has passed 3,600 recipients, now in a documented 137 countries, and continuing to expand. There are email subscribers at all the major CGIAR international agricultural research centers involved with crop protection, plus several non-CGIAR international centers such as AVRDC, ICIPE and CATIE. The NEWS also reaches subscribers at World Bank, Asian Development Bank, FAO, and numerous national agricultural ministries and departments as well as many local authorities, plus the four U.S. Regional IPM Centers, dozens of agricultural research-extension centers, both governmental and private sector, plus representatives of industry, growers, and others with an interest in IPM worldwide.

IPMnet NEWS maintains a goal of providing useful, fact-based information in synch with CICP's editorial policy of supporting not only IPM extension, research, and teaching, but technology implementation and policy development as well, and has been recognized as an efficient way to stay up to date on the latest, evolving IPM information; issues regularly include original information, plus relevant material that is difficult or very time consuming to locate elsewhere. IPMnet, with the NEWS as one element, serves as a major informative and cooperative global communication conduit for IPM/pest management information that cuts across many involved disciplines and professions. Since IPM itself is a robust construct that by definition covers all pest management tactics, information about any pragmatic strategy or tactic, or combinations thereof, may be cited in the NEWS.

In general, coverage does not extend to non-crop (urban, school, or structural) IPM. The NEWS stresses information concerning actions, events, and developments that might be broadly useful for IPM implementation in crops. Content avoids aggrandizement of institutions or individuals and strives, if not always successfully, to eliminate editorial opinion leaving that endeavor to other information channels.

Each issue of the NEWS carries feature articles and other items, all highly condensed for quick reading and "news-you-can use," in most cases, with a contact name, email address, phone, fax numbers, and a website so that readers interested in more detail can request information from the named source. Publications are reviewed, and recent scientific articles pertaining to IPM topics are cited, again leaving it up to readers to decide whether to pursue further specific data. The IPMnet CALENDAR is updated in each issue while the main calendar is always available on request or on the IPMnet website. The IPMnet CALENDAR exists as the single most extensive and current listing of international, regional, national, and sectional IPM-related symposia, meetings, congresses, training courses, and similar events.

The NEWS welcomes submission of information from all sources, but reserves the right to select and edit any or all material submitted in order to maintain consistency of a tight, space-saving style. A conscious effort is made to avoid extensive direct inclusion of text from other sources. An attempt is also made to acknowledge all sources of information that are cited in, or are the basis for, articles that appear in the NEWS. All mentioned email addresses are

sent the file for that issue mentioning them as a courtesy and as an alert to the mention and the possibility of follow-up inquiries.

Two sources currently provide major financial underwriting for IPMnet NEWS: the U.S. Department of Agriculture's Cooperative State Research, Education and Extension Service; and the U.S. Agency for International Development's IPM Collaborative Research Support Program (IPM-CRSP).

The NEWS has a close and constructive relationship with the Integrated Plant Protection Center at Oregon State University (U.S.).

While numerous other useful periodic publications, both electronic and hard copy, cover elements of IPM, IPMnet NEWS has established a unique niche as the only ongoing, long-running electronic resource exclusively devoted to global IPM information. CICP is pleased to be able to provide NEWS subscriptions to IAPPS members who, as a body, comprise an informed and highly involved group of professionals with strong links to the vitally important endeavor of globally improving crop protection.

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ASIAN SOYBEAN RUST

Through all the decades of soybean production in the US nothing has created such a threat as Asian Soybean Rust, *Phakopsora pachyrhizi*. A problem throughout the world, the last major production area to be affected by this fungus was the United States. That occurred in the fall of 2004 when Hurricane Ivan facilitated the movement of this pathogen from South America to the continental United States. With the arrival of this fungus came new challenges to the soybean producer for this year, 2005, and many years to come.

What is the Fungus

Asian Soybean Rust, ASR, is an obligate parasite that affects soybeans and several relatives of the legume family. Obligate parasite refers to the fact that the pathogen (fungus) needs a living host (green tissue) to complete its life cycle. ASR affects all varieties of soybean and to this date there has been no genetic resistance exhibited. In addition, several soybean relatives, bean species and a weed host (Kudzu), serve as alternative hosts. The presence of alternative hosts in the United States means that the pathogen has a greater opportunity to overwinter (survive each season) and create rust inoculum for potential future epidemics. Further, the spores produced by this fungus have the potential to travel hundreds, if not, thousands of miles in the atmosphere given ideal conditions.

Where does it originate?

The rust that showed up in the fall of 2004 in the Southern US either came from South America (and areas of known rust infections) or from Central America (from areas of unknown infections). Although this was the first time it traversed up to the north, it was accepted in the scientific community that it was only a matter of time before the US would have infections or epidemics due to the Asian Rust Fungus.

Is it really a threat?

Yes, the threat is real. Given the right conditions and lack of proper control measures, this fungus can defoliate a soybean plant field in as little as 21 days. If these infections should occur in the early reproductive stages of the plants' development, the yield decrease can be dramatic. Another frightening aspect of this disease is its mobility in the atmosphere. Given the right conditions, this fungus can blow into the atmosphere, travel hundreds of miles in the atmosphere, and survive to infect soybean plants where it lands.

With the large number of soybean acres in the US, the potential amount of inoculum produced from that, the wild Kudzu host as an alternative host, and the ease of spread; the fear expressed by APHIS, USDA, U.S. universities, and Industry is justified.

How to manage this disease

Controlling this disease is a misnomer. The reality is that this is a disease that a soybean grower must learn to manage. Even given the most robust fungicide control measures, the fungus can still infect a soybean crop; however, at levels that do not affect yield.

First, the cultural practices that are successful in other crop regimes (ie, crop rotation, row spacing, water regulation) seem not to have great effect in controlling ASR. Genetic resistance is many years away from being a reality, if at all. So, timely application of fungicides will be the predominant management method for ASR in soybeans.

Second, timing with this disease is critical. Experience in Brazil and South America has indicated that if the rust fungus spores are present, the ideal time to apply for control is at the R1 stage of soybean development. R1 refers to the first appearance of flowering structures at the plants internodes. Further, ASR can infect the V-stages (vegetative

stage) of soybean development but appears not to "explode" until the R-stages. Hence, timely applications of fungicides at the R1/2 stage of soybean development have been shown to maximize fungicide application. This is usually followed by a second application 21 days later if disease conditions persist.

Lastly, the choice of a fungicide mixture that includes fungicides in the strobilurin and triazoles class has shown most consistent and residual control in South America. Each of the two classes of fungicides combined offer benefits that outperform each of the classes by itself. The strobilurin class of chemistry gives excellent preventative activity (before infection has occurred) with slight curative activity (post infective control). The triazoles class of chemistry gives slight preventative activity whilst giving excellent curative activity. In the soybean field with active soybean rust there are all stages of soybean rust present; spores landing, spores germination, infection, colonization, pustule development, spore exuding, and spore dispersal. Hence a combination of two classes of different chemistries with distinct activities maximizes the chance for disease management.

Conclusions

There has been lots of press and fear mongering on ASR. The fear is real if certain things would have occurred in 2005. One question that was posed in 2004 was if it would overwinter; that question was answered in late February with the discovery of active rust pustules on Kudzu in Florida. Although the conditions for spread out of the southeastern US have not been conducive thus far in 2005, this is no indication that the next years will be the same. The initial years of rust outbreaks in Brazil created yield loss, however, once they learned to manage the disease the soybean yields have been averaging higher bags per hectare than the prerust days. There is hope.

For more information, visit www.soybeanrust.com for your one-stop for current information on rust, weather, and recommendations.

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IAPPS Mission: to provide a global forum for the purpose of identifying, evaluating, integrating, and promoting plant protection concepts, technologies, and policies that are economically, environmentally, and socially acceptable.

It seeks to provide a global umbrella for the plant protection sciences to facilitate and promote the application of the Integrated Pest Management (IPM) approach to a the world's crop and forest ecosystems.

Membership Information: IAPPS has four classes of membership (individual, affiliate, associate, and corporate) which are described [here](#).

The *IAPPS Newsletter* welcomes news, letters, and other items of interest from individuals and organizations. Address correspondence and information to:

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