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**PLANT PROTECTION SCIENCES**

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## **YEMEN: PLANT PROTECTION IN A CONFLICT-RIDDEN COUNTRY**

### **Economic collapse**

Agriculture, a key sector in the Yemeni economy, provides the main source of employment and produced 17% of the gross domestic product in 2010. The major agricultural products include fruits, vegetables and cereals. The financial crisis and current political turmoil has driven the country to the brink of economic collapse, and food insecurity is now a serious problem.

### **Current status of plant protection in Yemen**

The plant protection sub-sector has been severely affected by the tragic events. Agricultural research facilities have been destroyed and/or totally looted. The financial crisis has hit the entire agricultural sub-sector stopping most (99%) of current foreign/international and local funded research and activities. Salaries have not been paid and there is an increase in the cost of agricultural inputs due to an increase in exchange rates and corruption.



Destruction of the Agricultural Research Station, Bajl- Hodeidah

Source: <http://agricultureyemen.com>

## What must be done?

**1. Financial crisis-** Funding must be allocated for salaries and the replacement of destroyed facilities of the plant protection sub-sector. Support must be provided, to revitalize research and technology transfer activities, and encourage investment in the field of plant protection.

**2. Farmer education-** The educational level of farmers in Yemen is low and the illiteracy rate is 48%. This has resulted in a lack of awareness among farmers about the importance of integrated pest management and the adverse side effects emanating from the extensive application of pesticides. Therefore, we must initiate a vast awareness campaign before attempting to promote IPM packages.

**3. Invasive pests and diseases and migratory insects -** The following are major threats to production and for which management strategies must be developed.

- The **red palm weevil**, *Rhynchophorus ferrugineus*, first recorded in Yemen in 2013, has recently become a major date palm pest. The infestation is currently in three directorates in Hadhramout governorate (Eastern plateau zone), a major area for palm cultivation. An emergency project has been launched by FAO in Yemen to manage this pest.
- The **South American tomato leafminer**, *Tuta absoluta*, first reported in Yemen in 2012, has been recorded on 304 farms in 88 districts. About 70 percent of the tomato crop is infested with the pest. Without an effective control program, potential damage to Yemen's vegetable crop could exceed \$300 million.
- **Dubas bug**, *Ommatissus lybicus* is a serious sucking pest of date palm. First recorded in 2002, it has disrupted production in the eastern coast and plateau zones. It causes direct and indirect damage to palm and cultivated trees under date palm.
- **Wheat rust disease, Ug99** is a lineage of wheat stem rust spread from Africa, Uganda-Kenya to Yemen in 2006. During October 2010 to March 2011, stem rust was widespread in the highlands and western areas. The status of stem rust races in the conflict-ridden areas of Yemen is unknown.
- **Desert locust-** Locust monitoring and preventive control measures are believed to have played an important role in the decline in the frequency and duration of plagues since the 1960s. However, today climate change is leading to more extreme weather and poses fresh challenges on how to monitor and respond to locust activity. The conflict is severely hampering control operations.

**4. Apiculture-** Honey is a high value crop in Yemen but apiculture in Yemen faces many problems and productivity is the lowest of Arab countries. In the conflict-ridden areas, the situation is the worst it has ever been due to the restriction of beekeepers' mobility and the targeting of apicultures and beekeepers' by airstrikes and looting.

**5. Protected cultivation-** The use of tunnels for protecting plants has significantly increased, even in the conflict-ridden areas. They are used extensively for cash crops, mainly cucumbers, tomatoes, and strawberries and are one of the important technologies that can reduce food

insecurity and improve incomes of rural households in Yemen. However, there is a lack of information on the proper use protected cultivation, especially the use of pesticides.

**6. Pesticides-** Pesticides are extensively and incorrectly used to control pests, particularly on vegetables (mostly under protected cultivation). Pesticides cause a negative impact on humans and the environment resulting in 16,000-17,000 cancer cases each year in Yemen. In addition, agricultural exports are sometimes rejected because of high levels of pesticide residues. Therefore, increasing monitoring measures and farmer training are necessary.

### **Summary**

Yemen's agricultural sector has significantly shrunk mainly due to the current conflict and this has negatively affected the plant protection sub-sector. The investment in the plant protection sub-sector is one of the keys to increase agricultural production and to improve the livelihood of Yemenis. The emerging issues described are high priorities that must be given urgent attention by the plant protection sub-sector.

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## **26TH ASIAN-PACIFIC WEED SCIENCE SOCIETY CONFERENCE**

The 26th Asian-Pacific Weed Science Society Conference (APWSS 2017) will be held on September 19-22, 2017 at the Kyoto Research Park, Kyoto, Japan (<http://www.c-linkage.co.jp/apwss2017/>). The theme of the conference is "**Weed Science for People, Agriculture, and Nature.**"

Weed science is a comprehensive research area that covers ecology, biology and chemistry related to weed control and management. Weed science is nowadays an advanced science that is closely linked to human societies. We should use interdisciplinary and multifaceted approach to address future weed science and management. Attending the 26th APWSS conference will provide an excellent opportunity to meet experts in weed science and the respective fields and learn to apply your new-found knowledge when you return home.

The host city, Kyoto, is the ancient capital of Japan and is recognized worldwide as the country's historical, cultural and spiritual heart. The city offers you numerous cultural and unique experiences with its countless shrines, temples, and architectural masterpieces including 17 UNESCO World Cultural Heritage Sites. Mid-September is one of the best times to visit Kyoto. We suggest you to take a nice walk and to enjoy the streets and local sightseeing spots before and after attending the conference.

**The deadline of the call for papers is May 31, 2017.**

<http://www.c-linkage.co.jp/apwss2017/papers.html>

Other important links are as follows:

Registration details <http://www.c-linkage.co.jp/apwss2017/registration.html>

Conference Program <http://www.c-linkage.co.jp/apwss2017/programme.html>

Secretariat e-mail: [apwss2017@c-linkage.co.jp](mailto:apwss2017@c-linkage.co.jp)

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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 the world's crop and forest ecosystems.**

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