

Pakistan Parthenium
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Parthenium NEWS

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Two Different Biotypes of Parthenium Weed: Report from Pakistan

Asad Shabbir & Rukhsana Bajwa

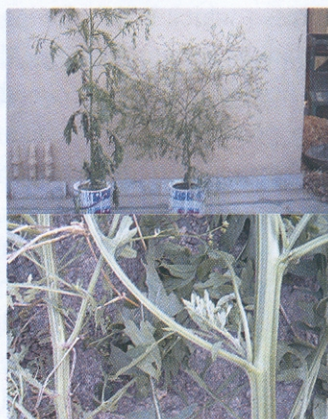
Parthenium weed (*Parthenium hysterophorus* L.) is a serious invasive exotic weed spreading throughout Pakistan. This weed invaded Pakistan in the last decade of the 20th century. Within a short span of time, it has established core infestations in the federal capital Islamabad and central and northern Punjab, some parts of NWFP and Azad Kashmir.

In a recent study two morphologically distinct biotypes were identified. Several differences were noticed in the growth and phenology of the parthenium weed plants from the two populations. One population, which is larger in size but low in fecundity, was relatively more prominent in colder periods of the year. The second population has smaller bushy appearance with high fecundity and is prevalent throughout the year. There were also differences in the capitulum's size, seed number, stem girth and germination temperature when plants from the two populations were compared. Hence, it does seem that these

two populations should be regarded as two distinct biotypes. Further studies are in progress to analyze these biotypic variations on genetic basis.

Parthenium Weed: An Emerging Threat to Agriculture

Parthenium weed is now emerging as a major weed of cultivated crops such as wheat, rice, trifolium, maize, sunflower, sorghum, sugarcane and vegetables. Wheat and rice fields in suburbs of district Lahore were regularly surveyed for a period of two years and data was collected. Heavy infestation parthenium weed in both rice and wheat fields was observed. Density of parthenium weed was however high in wheat fields and the subsequent yield was also on lower side. parthenium weed was noticed



emerging through out the growing period of wheat. A heavy infestation major crop with this weed holds a potential threat to seed industry and exports of Pakistan. It has been reported that once this weed becomes a crop weed then it is very difficult to eradicate.

Parthenium Weed: A Potential Threat to Dairy Industry of Pakistan

Asad Shabbir

Besides invading the range lands of the country, parthenium weed is becoming a potential dairy weed in Pakistan. Almost all fodder crops were found heavily infested with parthenium weed. The fodder crops invaded include Trifolium (barseen), Maize (makai), Sorghum (Jawar), Avena (javi) etc. When interviewed, most of farmers told that this is becoming a real problematic weed for live-stock and for them. Most of the farmers face allergy problems when they come in contact with this noxious weed during cutting and shifting operations of the fodder. Many farmers involved in milk business informed that



when their buffalos feed on contaminated fodder, their milk turn kora (bitter/ tainted).

Burning Crop Residues Reduces the Parthenium Weed Emergence: A study

Asad Shabbir

A recent study carried out in Lahore revealed that when crop residues were burnt, the subsequent emergence of



parthenium seedlings was significantly reduced in next coming crop. Wheat and rice fields, when watered after harvest showed that fire has significantly reduced the parthenium weed with no emergence in bare areas. On the other hand residues that escaped fire were stuffed with

parthenium weed. This study suggests that parthenium weed may be a potential threat in those zero tillage rice - wheat cropping systems.

Alien Plants Get Up Your Nose

By Kelly Scott

Millions are suffering in a rising national epidemic of allergies and asthma caused by the spread of alien plants in the Australian environment. "There's no doubt at all, invasive plants are a massive national health problem - but not one that is widely recognized by either the public or the healthcare community," says Dr Rachel McFadyen, CEO of the Cooperative Research Centre for Australian Weed Management on World Asthma Day. "They make life miserable for millions of people and the worst plants actually make you allergic to a whole lot of things you weren't allergic to before." Dr McFadyen said that when the drugs being taken for allergies and asthma, the doctor visits, hospitalizations, lost productivity and time off work are all accounted for; the total cost could exceed a billion dollars per year. The drugs alone have been estimated to be worth \$300m annually. The good news, says Dr McFadyen, is that it is possible to control some of the worst offending plants quite cheaply - compared with solving other major health problems - using biological control. Besides allergies and asthma, alien plants also bring with them other health concerns - deadly fruits and seeds, skin irritants, thorns, spines and stings and livestock poisons. "Despite some successes, the continued spread of certain invasive plants is increasing the health impact on the nation," Dr McFadyen says. "It is our goal, by 2020, to stop the introduction of any more dangerous plants - and to cut back the extent of existing ones." The worst offenders include plants like parthenium weed and annual ragweed, which over-stimulate the individual's immune system, giving them new allergies to other plants. In susceptible individuals both can cause gross facial swelling, allergic eczema and infected sinuses. They have even driven some people from their homes and jobs. Others include privet and annual ryegrass - which is developing resistance to herbicides. "Fortunately, through biological control, the abundance of these first two nasty introduced plants is in decline - and is a good example of how controlling a weed can achieve a useful healthcare outcome," Dr McFadyen says. Unfortunately, she adds, many of the worst health offenders have escaped from people's gardens - and it is up to home owners and other land owners to play their part in combating a national health problem. The NSW Asthma Foundation advises gardeners to avoid plants with wind-borne pollen, and

choose native grasses in preference to imported lawns. "We must also all be aware of the risk we pose to community health when we let plants escape from our gardens and establish in the wild," says Dr McFadyen of the 25 major seasonal allergens in Australia around 20 of them are introduced species.

More information: Dr Rachel McFadyen, Weeds CRC, www.weeds.crc.org.au, Weeds CRC Media Release World Asthma Day

Nematicidal Activities of Parthenium Confirmed

Neem seed kernel, methanol extract and essential oils of African Marigold *Tagetes erecta* flowers and parthenin, isolated from obnoxious weed *Parthenium hysterophorus* have been found to possess nematicidal activities against the root-knot nematode *Meloidogyne incognita*. (Indian Agric. Res. Int., Annual report, 2000-2001, 95, 97).

Active Weedicide Compounds Discovered from the Fungus, *Alternaria* Against Parthenium

Two weeds, *Lantana camara* Linn. and *Parthenium hysterophorus* Linn. though possess many useful properties have been targeted by researchers for eradication especially when they affect cash crops. Use of chemical weedicides is not advisable due to their harmful effects on other plants. So, Sanjay Saxena, a biochemist at Thapar Centre for Industrial Research and Development in Patiala studied and found out an active compound from fungus, *Alternaria alternata* (Fr.) Keissler to control these two weeds. The compounds belong to the lipid family. The purified compounds were found to be active against the weeds at doses of 100 parts per million. The *in-vivo* assay on plants 2 to 4 weeks old showed death at 160 hours after the start of treatment. Additionally these compounds are not toxic to vegetables or other crops. The effectiveness of compounds gets enhanced when they are combined with spores of the fungus. Thus in near future these compounds could replace hazardous chemicals.

(Source: Natural Product Radiance, Vol -1 No.3 May-June 2002 p.44)

Parthenium, A Threat to the Nilgiris

By D. Radhakrishnan

UDHAGAMANDALAM, AUG. 10. This hill station has in recent years been facing a number of environmental problems. Now, the dreaded weed, parthenium, has begun to invade the hills causing concern to the people, especially those suffering from asthma and related maladies. Describing the situation as alarming, the vice-president of the Nilgiris Wildlife and Environment Association

(NWLEA), Geetha Srinivasan, told The Hindu here today the weed could be seen along the Kallatty road, near here, covering large tracts.

She said the weed, known as 'Congress Grass,' was spreading rapidly. It had even made its presence at lower Coonoor, near Katterly. While in the plains such as Bangalore it was common, it could now be seen in clusters in the Bandipur and Mudumalai areas.

Ms. Srinivasan said the pollen of the weed could cause serious dermatological problems. Being a 'notorious' exotic and ecological predator, it would not allow other plants nearby to survive. Ms. Srinivasan said she would take up the matter with the Forest department.

N. Selvaraj, Head, Horticulture Research Station (HRS), emphasized the need to accord top priority to solving the problem and said there was a positive side to it. It could be mixed with cow dung and converted into vermicompost *(Source: the Hindu Online edition of India's National Newspaper)*

Get Rid of Parthenium

Special Correspondent

BANGALORE: The cold nights have led to a spate of sniffles and coughs in the city. Doctors blame it on the high pollen count, particularly from the parthenium weed. An effective remedy to solve the problem is to get rid of the weed by spraying salt water liberally on it. *(Source: the Hindu Online edition of India's National Newspaper)*

Clean your Equipment First

Clean your machine before it leaves the farm. This minimizes potential weed spread and promotes your image as a professional operator. Parthenium seed is very small, so thoroughly clean your machine with a high volume air compressor. Use water jets only for mud and other contaminants that will not yield to air treatment. *(Source: <http://www.ricecrc.org/reader/weed-list/parthenium.htm>)*

'Parthenium' weed destroys agricultural lands in Srilanka

The deadly weed, Parthenium, is now spreading fast in the Tamil dominated Northeast province in Sri Lanka leading to loss of crop yield up to fifty percent, causing retardation of crop growth and skin disorders to people, provincial agricultural experts said. The first appearance of this weed was noted in 1988 near sites mainly at the School of Agriculture when occupied by the Indian Peace Keeping Force (IPKF) at Vavuniya in the Northern

Province. The IPKF arrived in Sri Lanka during the latter part of 1987 under the Indo-Sri Lanka peace accord in an attempt to resolve the country's ethnic conflict. [TamilNet, February 17, 2002.]

Parthenium Weed in Glads

The results of a pot experiment indicate that *Parthenium* roots produce certain allelochemicals that have inhibitory influence on the growth of the *Gladiolus* (An important cut flower). The reduction in length of spike may be up to 0.56 feet. The occurrence of this exotic weed may prove to be an emerging threat to floriculture. Further studies



are in progress to evaluate the losses caused by of this weed on production of the cut flower.

(Tariq Riaz PhD Scholar)

New Weapon Against Parthenium Weed a Success

The construction of numerous portable biocontrol nurseries across Queensland has provided a huge boost to the fight against parthenium weed, a Queensland Government Department of Natural Resources, Mines and Water (NRMW) weed expert says.

National coordinator for parthenium weed Peter Austin says the nurseries, supported by the Queensland Government and funded by the Federal Government, are used to breed the biocontrol for parthenium weed, a fungal disease known as "summer rust"

"The construction of these nurseries enable the breeding of the summer rust and then the infected plants to be distributed quickly and locally into areas where parthenium weed is difficult to manage and considered beyond viable control," Mr Austin said.

"As many as eight councils in central Queensland have come on board and constructed a nursery including Nebo, Broomsound and Calliope together with a nursery based at Springsure that is supported by the five councils from the Central Highlands - Bauhinia, Emerald, Peak Downs, Belyando and Jericho," he said.

"The nurseries are a great example of cooperation between local, state and federal government and the local community.

"Summer rust was released by NRMW in 2000, however due to recent poor 'wet seasons' the rust has not been as effective. Like all biological control agents, their impact in the field is variable depending on the climate and site conditions.

"Landholders are therefore urged to continue to use a combination of management strategies for parthenium weed, and not rely solely on biological control," Mr Austin said.

For more information visit.

http://www.nrw.qld.gov.au/about/media/feb/21_parthenium_biocontrol.html

CONFERENCES / SEMINARS / LECTURES

Asthma Problem in Islamabad

Dr Muhammad Osman Yousaf, an allergy specialist gives a seminar on Allergy on 7th of November 2006 in Department of Mycology and Plant Pathology University of the Punjab Lahore. His talk covered various allergen causing allergies with special reference to pollen allergy. Dr Osman suspects that pollen of parthenium weed may be adding to severity of allergy problems in Islamabad. Parthenium weed is harmful to human beings in more than one ways. The flowers of Parthenium weed emit millions of pollens. These pollens cause asthma and skin diseases in human beings. Small hairs present on the stem of parthenium weed, when in contact with human beings and animals, cause different types of skin diseases. You will be surprised to know that many farmers suffering from parthenium borne skin troubles have committed suicide in India. Florists in Pakistan are still excessively using Parthenium weed in the preparation of bouquets, which is one of the major factor of its spread in urban areas.

Join hands to manage Parthenium weed

Become a member of Pakistan Parthenium Action Group (PPAG). Anybody having interests in management of alien invasive species can join this group. For more information contact below:

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