



FESPBalert

No. 3(8) December 2003

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Research news

Flowering and another blue-light receptor

A further piece of the puzzle of how photoperiodic time-measurement is achieved appears to have been found. Steve Kay and Winslow Briggs and colleagues have reported (Nature, November 20th) that a circadian clock-controlled protein, FKF1 (flavin-binding, kelch repeat, F-box), is essential for day length measurement in the long-day *Arabidopsis*. FKF1 expression is rhythmic, and it therefore appears to be an output from the clock. Crucially though, FKF1 appears to control the expression of the critical regulators for photoperiodic induction, CO and FT; expression of CO was reduced in *fkf1* mutants, and expression of FT was almost absent.

Further, FKF1 was shown to have a blue-light absorbing flavin mononucleotide chromophore, thus adding to the known blue-light receptors, cryptochromes 1 and 2, phototropins 1 and 2, and phytochrome a. Since expression of CO was unaffected in *cry*, *phot* and *phyA* mutants, FKF1 may directly perceive and transducer the blue-light signal involved in the induction of CO.

Symbiotic fungi promote invasion into diverse plant communities

The biodiversity of a community can affect its functional properties, such as its productiveness or its ability to resist invasion by exotic species. Many grass species host fungi in their leaves that can render them more resistant to herbivory, drought, and competition. In a recent issue of *Ecology Letters*, Rudgers, Koslow and Clay investigated whether these endophytic fungi can modify how diverse communities resist invasion. Their model predicts that endophyte-infection of a grass invader will weaken the ability of diverse communities to resist invasion and reduce the correlation between diversity and community productivity. Their long-term field experiment using invasive tall fescue grass confirms this model, demonstrating that endophytic fungi contribute more to the dynamics of plant communities than previously supposed.

Amelioration of biodiversity impacts of genetically modified crops: predicting transient versus long-term effects

It has been suggested that GM crops (sugar beet in particular) may benefit wildlife because in GM crops herbicides are sprayed later in the year, allowing weeds and associated wildlife to flourish in spring and early summer. Freckleton *et al.* have compiled information on the growth and reproduction of common arable weeds of sugar beet and show that many species are unlikely to experience long-term benefits because they are incapable of reproducing before herbicides are applied. Therefore the benefits reported in short-term trials are unlikely to be maintained in the long-term. However, it should be noted that the precise control of weeds possible in GM crops may mean that future work may yield schemes for using herbicides in a manner that promotes biodiversity, and we speculate about one such approach. This work highlights the problems of predicting long-term impacts of GM crops from short-term trials.

Environmental benefits of GM crops

Reports concerning the impact of GM crops continue to be varied. The recently published farm-scale trials carried out in the UK suggested that GM beet and oilseed rape were 'worse' in terms of biodiversity than non-GM counterparts.

However, a study at Reading University used a number of parameters to measure the overall effect, including energy used in making the weedkiller, diesel consumed by machinery, and physical resources used. This 'life-cycle analysis' suggests that modified sugar beet is far more environmentally friendly than conventional beet. "Overall, herbicide-resistant GM beet was 15 to 50 per cent better for the environment, depending on what impact was being measured," said Richard Phipps. The benefits arise mainly because farmers spray much less weedkiller and pesticide onto GM beet, less often. This approach could easily be used to test the environmental impact of other farming systems. "There's absolutely no reason why the same methodology couldn't be applied to organic or no-till systems of agriculture."

Other news

Agri-environment schemes need ecology studies

Ecological evaluations must become an integral part of European agri-environment schemes if the billions of Euros spent on them are to result in real ecological benefits, leading ecologists have warned. Policy makers are not properly evaluating their effectiveness despite the fact that 24.3 billion Euros have been spent on such schemes in the European Union since 1994. In the majority of studies, the research design was inadequate to assess reliably the effectiveness of the schemes. Thirty-one percent did not contain a statistical analysis, and where an experimental approach was used, designs were usually weak and biased towards giving a favourable result.”

The findings should serve as a wake up call to UK and European policy makers that, in order to have a cost-effective beneficial effect on biodiversity, ecologists must be much more closely involved in appraising which schemes are most effective.

The best-known agri-environment scheme success is the ciril bunting, *Emberiza circlus*, which was intensively studied by the Royal Society for the Protection of Birds, English Nature and the National Trust in the UK. The Countryside Stewardship Scheme offered a standard payment for maintaining low intensity grassland, and between 1992 and 1998 ciril buntings increased by 83% on Countryside Stewardship Scheme land compared with only 2% on land adjacent to, but outside, the Scheme.

Free content in Journal of Experimental Botany (an FESPB journal)

This is the second article describing what content is offered to non-subscribers by prominent plant science journals. The intention is to heighten awareness of the significant amount of published science that is now available without charge on the Internet. Last time I summarised cost-free provision from *Annals of Botany*. I now assess what is delivered to non-subscribers from the web site of *Journal of Experimental Botany* (www.jxb.oupjournals.org). Like *Annals of Botany*, Oxford University Press is contracted to publish *Journal of Experimental Botany*. The High Wire Press based at Stanford University mounts both journals on the web. The web site of this publisher is itself an invaluable resource for tracking down articles from a wide range of journals (<http://highwire.stanford.edu/>) that include *Science*, *PNAS*, *Plant and Cell Physiology*, *The Plant Cell*, *Plant Physiology* in addition to *Journal of Experimental Botany* and *Annals of Botany*.

Abstracts: Abstracts of all papers back to 1996 are available to non-subscribers together with links to papers in article databases such as PubMed and Agricola.

Treatise in Experimental Botany (TEXBOTs). The electronic version of each TEXBOT is free and contains a themed collection of 'Perspectives' review articles. Written in a readable and informative way, TEXBOTs are of particular interest to university teachers and highlight recent progress in a particular area of research. [TEXBOT 1: Water Relations](#); [TEXBOT 2: Environmental Stress](#); [TEXBOT 3: Plant Development](#); [TEXBOT 4: Long-Distance Signalling](#); [TEXBOT 5: Circadian Clocks](#)

Full-length papers older than 1 year: Non-subscribers can access abstracts, PDF and HTML full text versions of all articles more than 1 year old.

Articles in Plant Culture section: they focus on political, philosophical and artistic issues.

Monthly Table of Contents alert (e-tocs): A monthly list of papers in the current issue can be sent automatically after requesting the service from the home page.

CiteTrack: Register to receive an e-mail whenever new content in *Journal of Experimental Botany* or [any participating journal](#) is published that matches criteria based on the topics, authors and articles you want to track.

Full-Text of **cited References** to other High Wire journals.

Free sample issue on-line: A full issue (normally the issue published 6 months before) can be requested and is delivered electronically.

I hope this information is useful. In the near future I will be looking at what the other FESPB journals are currently offering.

Mike Jackson, Secretary General FESPB

Free Access to *Physiologia Plantarum*

Physiologia Plantarum is published by Blackwell Munksgaard on behalf of the Scandinavian Society for Plant Physiology (SPPS) and is an affiliated journal of FESPB. We are pleased to offer readers of FESPB alert free access to all articles in *Physiologia Plantarum* until 29th February 2004.

Simply follow the instructions below to activate your temporary subscription:

- Visit www.blackwell-synergy.com
- Log-in, or register if you are not a registered *Synergy* user, and then log-in
- Click on the blue 'My Synergy' tab at the top of the screen
- Click on the blue 'Access' tab in the middle of the screen
- Enter the following code in the 'Access Token' box and then click 'Continue':
PPL TRIAL FESPB 2003
- You now have full access rights to *Physiologia Plantarum* until the end of February 2004.
- Why not select to receive table of contents e-mail alerts to *Physiologia Plantarum* by clicking on the 'e-alerts' tab in 'My Synergy' and keep up-to-date with the latest issue of *Physiologia Plantarum*.

Positions available

Full details of these positions are posted on the FESPP website on the **Jobs and Studentships** pages (<http://www.fespp.org/jobs.asp>)

Geographical Ecology of Pollination

PhD position, The University Of The Aegean, Lesvos, Greece

A PhD position (EU-funded) is available at the Laboratory of Biogeography, Department of Geography, University of the Aegean. The research will be part of the interdisciplinary EU-project ALARM (Assessing LARge-scale Environmental Risks with tested Methods). Start: February 2004, for an initial period of 18 months, but with funding anticipated for up to 5 years.

Responsibilities may include assessment of the following:

1. Pollinator densities in major ecosystem types of Lesvos
2. Effects of habitat fragmentation (e.g. islands), and landscape complexity on pollinator communities (pollinator diversity and pollination services)
3. The impact of ecosystem disturbance (e.g. fire, grazing) in pair-wise comparisons of intensive and extensive disturbance regimes on pollinator communities and pollination
4. The impact of organic farming on pollinator communities and pollination
5. Pollinator loss due to succession
6. The risk of extinction of rare plants due to pollinator shift or loss.

The work includes field observations, pollination experiments, analysis of landscape parameters using GIS and the development of standardised methods to assess pollinator diversity.

Requirements: Diploma or MSc degree in biology, agriculture or other relevant discipline. Expertise in animal/plant ecology, pollination biology, field botany and/or entomology, insect taxonomy, GIS, statistical methods and computer literacy will be useful. Essential requirements are: the ability to organise and execute field-based research independently in remote areas; skills in data management, and statistical analysis; positive attitude to collaborative work and enthusiasm for the research area; English or Greek spoken as working language.

Salary: Salary of the 3-years position will be about 1000 Euro per month (net ca. 850 euros), depending on the qualities.

Applications: Send a CV, an outline of research interests, and the names of two academic referees to **Theodora Petanidou**.

For further information, please contact: Assoc. Prof. Theodora Petanidou, University of the Aegean, Department of Geography, University Hill, GR-81100 Mytilene, Tel. (+30) 2251036406, Fax (+30) 2251036423, E-mail: t.petanidou@aegean.gr
<http://www.aegean.gr/Geography/eng/staff/cv/petanidou-eng.htm>

Measuring Pollination Effectiveness

Postdoctoral position, Haifa University

Supervisors: Amots Dafni and Gidi Ne'eman

Duration: One to three years.

Start: February 2004.

Salary: 12.000 US\$ per annum.

The European Community has just launched a five years multinational project on pollination ecology, monitoring and conservation **ALARM (Assessment Large Scale environmental Risk with tested Methods)**, the part of our laboratory is to develop a working field procedure to measure "pollination effectiveness" that will be later adopted as a standard yardstick for the whole project.

A short quick glimpse in the current literature (Dafni, 1992; Gross, 2004) will immediately reveal at list 25 different definitions as well as ways of assessing or measuring pollination: pollination efficiency, pollination effectiveness, pollination efficacy, pollination success, effective pollination period (EPP) as well as pollinators' efficiency. As it can be imagined the same term could be related to different phenomena as used by various authors. These approaches may reflect complete unrelated facets of plant male and female reproductive success in relation to "effective pollination" which are also pollinator's dependent.

The different approaches may cover aspects that reflect merely the pollinator behaviour in terms of pollen transfer per one visit, number of seeds produced per one visit/ amounts of transferred pollen/ amount of pollen produced per flower. Other criteria consider just the mere result of the pollinator's activity as in terms seeds production per pollen/ovule/flower or even aspects that consider pollen germination in the stigma in relation to the number of fertilised/sorted ovule and seed production.

It is clear that various approaches may reflect different aspect of floral biology and pollinator's behaviour and may express different unrelated aspects such as: frequency of visits per flower and/ or touch of the stigma, number of results under the same experimental circumstances with the same plant species. Just a small example, even a successful transfer of a fare amount of pollen could not be effective in terms of seed production if the stigma is not receptive and or the pollen is not viable – both critical aspects were rarely studied if at all in relation to "pollination effectiveness".

The idea is to choose plants that are flowering in various seasons, are pollinated by bees and we know their breeding systems and pollinators (e.g. *Salvia fruticosa*, *Micromeria fruticosa*, *Satureja thymbra*, *Prasium majus*, *Asphodelus microcarpus* (= *A. aestivus*) which are common and frequently visited by many pollinators. These plants will be subjected simultaneously to various protocols of assessing "pollination effectiveness" in relation to the actual seed production. The data would be used to develop the most predictive methods to be adopted as a standard protocols for ALARM.

Please contact: adafni@research.haifa.ac.il

Gene Expression during Conifer Somatic Embryogenesis

Postdoctoral position, Winnipeg, Canada

The Department of Plant Science, University of Manitoba, Winnipeg, Canada has available a postdoctoral research position to work on gene expression during conifer somatic embryogenesis. The selected candidate will have extensive experience in molecular biology techniques, including gene cloning, PCR, RT-PCR, generation of cDNA libraries and plant transformation. Experience on tissue culture and plant somatic embryogenesis is preferred, but not required. A successful candidate will be able to work independently and as a member of a team, and to initiate and accomplish research goals including publication of results in scientific journals. The position will be available starting in early 2004 and will last for one year, although it can be extended to three years upon satisfactory results. Applicants are requested to send or e-mail curriculum vitae, including reprints/electronic files of principal works (PDF files only), and the names of three references who may be asked to supply letters of recommendation.

Dr. Claudio Stasolla, Department of Plant Science, Faculty of Agricultural and Food Sciences, University of Manitoba, Agriculture Building
Winnipeg, R3T-2N2,
Manitoba, Canada

Tel. (204)-474-6098

Fax. (204)-474-7528

E-mail: stasolla@ms.umanitoba.ca

Related Web Site: <http://home.cc.umanitoba.ca/%7Estasolla/index.html> Job
Contact Email: stasolla@ms.umanitoba.ca

Plant Biology MSc programme

Plant Biology at Utrecht University runs a two-year MSc programme that trains and educates plant biologists at a high academic level. Masters students will, individually or in a team, be challenged to solve fundamental and applied plant biological problems. To this end students are shown the most modern experimental and mathematical methods and techniques. Furthermore, students will also learn to apply molecular and genetical tools to a wide range of biological problems.

All courses and practical training are given in English by a team of internationally distinguished scientists.

More information on the programme and registration can be found on the flyer or on the website www.bio.uu.nl/plantbiology

Forthcoming meetings

SEB Annual Meeting

Herriot-Watt, Edinburgh, 29th March – 2nd April 2004

Sessions: Making Sense of the Metabolome

Light stress in plants - mechanisms and interactions

Plant Cell Architecture

Transcriptional Regulation of Plant Membrane Transport General Plant Biology

Metabolism, Transport and Engineering of Bioactive Compounds in Plants

Sulphur Metabolism in Plants – Integrating complexity

Abstract deadline is January 12th. See website for instructions, and also for details of travel awards for young researchers

<http://www.sebiology.org/Meetings>

Fourth International Symposium on Adventitious Roots

Savannah, Georgia, USA May 10-14 2004.

Details are posted on the Symposium web site at

<http://www.ncsu.edu/feop/roots>

Oral presentations and posters on all aspects of root formation and development are welcome.

Letters of Invitation to help obtain travel funds or a visa can be obtained from Susan Moore: susan_moore@ncsu.edu

Further details can also be obtained from Dr. Carmen Dmaz-Sala, Dept. Plant Biology, University of Alcala, 28871 Alcala de Henares, Madrid, Spain. Phone: 34.91.8854911 Fax: 34.91.8855066;

e-mail: carmen.diazsala@uah.es

7th International Symposium on Inorganic Nitrogen Assimilation in Plants

Wageningen, The Netherlands June 23-27, 2004

The 7th Symposium is aimed at integrating the fundamental disciplines with the more applied aspects.

<http://www.enaag.org>

International Satellite Meeting in honor of Prof. Norio Murata

Trios-Rivieres, Quebec, Canada. August 25-28, 2004

The title of the meeting is: "Photosynthesis and Post-Genomic Era: From Biophysics to Molecular Biology, a Path in the Research of Photosystem II",

The web address is <http://www.nibb.ac.jp/~satellit/top>

10th Cell Wall Meeting

Sorrento, Italy. 29 August – 3 September 2004

This is the **first announcement** for the 10th Cell Wall Meeting that will be held in Sorrento, Italy, in August-September 2004. The aim of the Cell Wall Meeting is to bring together scientists whose research deals with any aspect of plant cell walls. As in the past, the meeting is completely open and there are no invited speakers. The organisers are committed to keeping the registration costs as low as possible to encourage especially students and young research scientists to attend the meeting. We also encourage industrial participation in order to establish links between cell wall research and potential downstream applications.

Registration will be on Sunday, August 29; talks will start on Monday. Poster sessions will be held throughout the meeting.

X Iberic Symposium on Mineral Nutrition

Lisbon 21-24 September 2004

The aims of the Symposium organized by the Portuguese Plant Physiology Society are to:

- Present and discuss the last scientific achievements on molecular, physiological, ecological and agronomical aspects of plant mineral nutrition
- Improve and optimize the knowledge about the relationship between mineral nutrition and quality of plant production.
- Promote the establishment of scientific cooperations between biochemists, physiologists, ecologists and microbiologists.
- Identify scientific priorities about the rationalization of nutrients use and increment of productivity.

For more details see: <http://nutri.fc.ul.pt>

Useful web sites

Promoting Literacy in the Biosciences

<http://www.actionbioscience.org>

This site was recently given a '2003 Sci/Tech Web Award for best biology web sites' by Scientific American. The site aims to promote bioscience literacy, by providing lessons at secondary school - undergraduate level to accompany peer-reviewed articles that examine bioscience issues. Both the articles and lessons focus on issues in biodiversity, environment, genomics, biotechnology, evolution, new frontiers in the sciences, and bioscience education. The site is in English but Spanish translations of select articles are also available.

Threatened Species Site

<http://www.redlist.org/>

The International Union for Conservation of Nature and Natural Resources (IUCN) has recently updated its list of species that are critically endangered. Among the most threatened plants are gymnosperms having 31% of their known species currently endangered (the highest of any major group of plants or animals). The web site has extensive tables that paint a bleak picture of the encroaching extinction for many plants and animals.

Large Plant Catalogue

<http://www.infochembio.ethz.ch/links/en/botanik.html>

'Everything' you wanted to find in the botanical sciences is collected up in German and English in this comprehensive web site. The following topics each have pages of links: Cryptogams, Databases, Data Collections, & Reference Works, Education, Flowering Plants, Institutes, Internet Directories, Comprehensive Sites & Links, Organizations, Plant Anatomy and Physiology, Plant Chemistry, Plant Geography, Taxonomy & Nomenclature, Trees, and Vascular Plants. The site is sponsored by the Chemistry Biology Information Center, ETH Hvinggerberg, Zurich, Switzerland.

FESPB News

KEY DATES FOR THE 14th CONGRESS (Krakow, Poland)

October 2003..... Second Announcement

March 31st, 2004..... Deadline for early Registration

March 31st, 2004.....Deadline for submission of Abstracts

Details of two schemes funded by FESPB in connection with the forthcoming Congress in Krakow next year are now available from the FESPB home page.

The first explains how to propose candidates for the FESPB Awards given every two years to two outstanding young plant scientists. Although National Representatives are asked to make these submissions, they will be pleased to receive suggestions of promising candidates from members.

The second explains how students from eastern and central Europe can apply for financial help to attend the Krakow Congress. Approximately thirty such travel grants are likely to be made available. Each Award has total value of up to EURO 770 comprising 6 nights basic hotel accommodation in Krakow standard class travel costs by bus/train/air between Krakow, Poland and their town of residence and registration costs. The travel costs will be reclaimable at the Congress from the Organizing Committee of the Congress on presentation of receipts and tickets.

Items for FESPBalert

If you have items, job opportunities or information you think FESPB members would like to see in *FESPBalert* or have any comments on content please e-mail me pjlumsden@uclan.ac.uk

The source of this FESPBalert is

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