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EDITORIAL NOTE

Publications in the field of Agrarian Sciences in the Anais da Academia Brasileira de Ciências: What next?

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It is easy to state that agriculture is a driving force for Brazilian economy. Brazil is a major player in the world due to its agriculture being one of the main world producers of sugarcane, soybean, maize, coffee, amongst others. In more recent years the continuous increase in crop production, whilst keeping the total area of cultivated land almost unaltered, is one example of the tremendous advances obtained in agriculture. The participation of the agribusiness in the Brazilian Gross Domestic Product was 22.34% in 2010 (source: Centro de Estudos Avançados em Economia Aplicada (CEPEA, ESALQ/USP) - Confederação da Agricultura e Pecuária do Brasil, (CNA) <http://www.cepea.esalq.usp.br>).

The field “Agricultural Sciences” in the Essential Science IndicatorsSM of the ISI Web of KnowledgeSM (Thomson Reuters) was updated on November 1, 2011 for papers published from January 1, 2001 until August 31, 2011 (10 years + 8 months period). Analysis revealed that amongst the 22 fields for Brazil, Agricultural Sciences ranked 5th, 11th and 20th for the number of papers published (13,231), total citations (40,894) and citations/paper (3.09), respectively. When the Brazilian Agricultural Sciences field performance was compared to other countries, using the same tool “Country/Territory Rankings in Agricultural Sciences”, the field ranked 3rd, 13th and 92nd for the number of papers published, total citations and citations/paper, respectively.

In 2010 and 2011 (up to the December 4th 2011), the *Anais da Academia Brasileira de Ciências* (AABC) received for evaluation 202 and 298 manuscripts respectively, an increase of 47.5% in 2011 over 2010. The submission of manuscripts related to Agrarian Sciences increased from 27 in 2010 to 49 in 2011, an 81.5% increase. AABC published 97 papers in 2010 and 112 papers in 2011, of which 10 and 12 papers respectively, were in the field of Agrarian Sciences, approximately 10-11% of the total in each year. These results mean that the rate of rejection of papers in Agrarian Sciences was considerably increased. It is important however to comment that AABC is a multidisciplinary journal and independent of the number of submissions, the key factor that should never be ignored, is the importance of publishing high quality papers.

A quick evaluation of the 22 papers published in AABC over the last two years reveals a wide range of topics in the subject of Agrarian Sciences. For instance, the work of Martins et al. (2010) questioned whether the parasitic fauna of the Nile fish *Oreochromis niloticus* (Linnaeus, 1758) could be affected by different production systems. The efficiency of boron application in an Oxisol cultivated with banana in

the Central Amazon region (Moreira et al. 2010) is an interesting example of a paper on soil science in combination with plant nutrition, since the authors reported the effect of boron on fruit yield and quality of banana plants in a specific type of soil. On the other hand, Vendrame et al. (2010) reported a study on the fertility and acidity status of oxisols under pasture in the Brazilian savanna (Cerrado), which accounts for over 50 million hectares of cultivated pasture and provides 55% of Brazilian beef production.

It is well known that soil microorganisms such as arbuscular mycorrhizal fungi (AMF) which form symbiotic associations with most vascular plants (Andrade et al. 2009) and phosphorus-solubilizing microorganisms (PSM), play an important role in supplying nutrients to plants. In tropical soils, phosphorous (P) is the most limiting nutrient and the research of Souchie et al. (2010) added extra information as to how P solubilization of rock phosphates can take place in systems involving plants inoculated with PSM and AMF. Studies involving the use of molecular markers to study genetic diversity in plants have also been published (Cunha et al. 2010, Londe et al. 2010). The use of molecular markers is wide spread and the number of papers published is now large and is increasing, which shows the importance of using such markers. However, it would appear that papers using these markers are becoming essentially descriptive and may not in many cases represent a novel contribution. The report published by Marques et al. (2010) is a nice example of a comprehensive plant pathological study of an important viral disease (Citrus leprosis) of significant economic relevance; these authors investigated morpho-anatomical differences in the lesions caused by leprosis virus-cytoplasmic and nuclear types in *Citrus sinensis* (L.) Osbeck 'Pêra'. Two other papers published in 2010-2011, dealt with the efficiency of intercropping lettuce with tomato or cucumber (Cecilio Filho et al. 2011, Rezende et al. 2011), whereas the paper by Rodrigues et al. (2011) analyzed and discussed the intellectual property rights related to genetically modified glyphosate tolerant soybean in Brazil.

The papers discussed above are just some examples of the diversity of those published in the field of Agrarian Sciences in AABC in 2010-2011. The question is what does AABC intend to publish in the next few years not only in the field of Agrarian Sciences, but in all fields that are covered by the journal. AABC is a multidisciplinary journal and considering the increasing number of submissions, competition for space is going to be fierce and should as a consequence lead to a continually increasing rate of rejection. Therefore, it is my opinion that AABC editors must carefully balance topics, which will have the most impact and be of most interest to readers of AABC. Priority should necessarily be given to manuscripts reporting brand new information, which make substantial advances and preferably have the broadest significance, whilst papers that are merely confirmative, or that report small incremental advances in the subject should not be considered. Such papers would be far better published in more specific journals. Scientific novelty must be the key criterion for selection, whereas the technical quality of the manuscript is naturally expected.

In a recent editorial published in *Annals of Applied Biology*, Azevedo and Lea (2011) presented an overview of the papers on plant stress published in the journal. They then indicated new approaches and suggested ideas as to the type of papers that the journal would like to see published and that they believed have the potential to add significant advances to the field. Brazil is in the world media on a daily basis due to vitally important topics such as biofuels, commodities, food and energy security, food production, renewable energy production, sugarcane, but how many papers on these subjects have been submitted and published to AABC? With all the 'omics' procedures that are now available and largely employed by Brazilian research groups, it would be nice to see papers using these techniques also published more often in AABC. Other emerging

techniques and the integration of different analytical techniques (metabolite measurements, gene expression analyses, enzymatic studies, etc) are being used to address key biological questions. Such techniques provide the possibility of including a higher level of complexity by consolidating a wide range of research and thus increasing our knowledge and understanding in Agrarian Sciences, including systems biology. Research on environmental concerns and plant responses to abiotic and biotic stresses are also important subjects which have received a great deal of attention and priority worldwide (Arruda and Azevedo 2009, Ghelfi et al. 2011) and yet, how many papers reporting advances in these topics have been published in AABC? It is also well known that some papers published in the subject areas of Agrarian Sciences, Biological Sciences and probably other subjects, overlap and possibly a paper published in Agrarian Sciences could have been published in Biological Sciences and vice-versa. Such an integration of subject areas may be essential, if we are to see major advances in any subjects published in AABC.

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