Extension Education Methods

Wikipedia As a Tool for Disseminating Knowledge of (Agro)Biodiversity

Angelo Signore^{1,4}, Francesco Serio², and Pietro Santamaria³

ADDITIONAL INDEX WORDS. collaborative learning, communication, extension methods, social media, Web 2.0

SUMMARY. The dissemination of knowledge about (agro)biodiversity is a strategic factor in communicating the urgent need to defend and protect biological diversity. Although this can be carried out with various media, in recent years social media (or “Web 2.0”) have begun to assume a prominent role. Of the Web 2.0 services, Wikipedia (Wikimedia Foundation, San Francisco, CA) is one of the most powerful and interesting tools, for several reasons, being collaborative by nature, free of charge, multilingual, and accessible online; in addition, anyone can update the materials therein. Within the framework of the regional project “Rural Development Programme 2007-2013,” our research group, responsible of the collection of historical information and morphological characterization of several vegetable crops considered to be at risk of genetic erosion, proposed the use of Wikipedia as a dissemination tool. The objective of this study was to show how to add/modify articles in Wikipedia for online divulgation and to demonstrate its validity by analyzing some data (pageviews, editing history, and the impact of Wikipedia as a referral toward the project’s institutional website) related to the Wikipedia articles that were added/modified. The article about the landrace variety Carota di Polignano carrot (*Daucus carota*), created from scratch, received more than 15,000 pageviews in less than 2 years. Referrals from Wikipedia increased the visits to the institutional website by 30%, whereas the bounce rate decreased by 15%. Wikipedia may be a good tool to improve the dissemination of knowledge about (agro)biodiversity either online or offline, and the addition in Wikipedia’s pages of scientific journal references and of links to projects’ website may strengthen the diffusion of scientific knowledge.

The United Nations declared 2010 to be the International Year of Biodiversity, in order

“to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional, and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.” Unfortunately, this target has not been achieved, as stated by the Secretariat of the Convention on Biological Diversity [SCBD (Montreal, QC, Canada)] in its Global Biodiversity Outlook 3 (SCBD, 2010), because none of the 21 subtargets accompanying the overall target (i.e., significantly reducing the rate of biodiversity loss by 2010) can be said definitively to have

been achieved globally. However, some of them have been partially or locally achieved at regional or national scale, since some countries now have national biodiversity strategies and action plans (SCBD, 2010). Furthermore, many countries worldwide are also undertaking several communication and education activities and public awareness raising campaigns, since these activities are crucial to bring issues related to biodiversity to the attention of the general public. Given the crucial role of the communication activities, in 2007, the European Commission [EC (Brussels, Belgium)] contracted Gellis Communications (Brussels, Belgium), a communications consultancy agency, to conduct a scoping study for a Europe-wide communications campaign on biodiversity and nature. Their report (Gellis Communications, 2008) produced some quite surprising results about the education activities and public awareness raising campaigns. Some of the most significant key findings reported by Gellis Communications (2008) for the purposes of this work are the following:

1. “Make use of mass media and involve the educational sector more effectively”

The main threats affecting biodiversity are more or less well-known to stakeholders and the general public, so the question is how to communicate these issues better to citizens and what resources should be used for the communication. As reported by Eurobarometer (EC, 2007), the three main sources of information are: 1) television, news, and documentaries (52%); 2) Internet (42%); and 3) newspapers and magazines (33%). In comparison with a previous survey (EC, 2005), the Internet has made a leap forward in terms of its impact. In fact, in the 2005 report, respondents also ranked television highest (72%), but with newspapers (at 51%) coming in second. The Internet was at that point only named by 11% of respondents. Rising from 11% to 42% represents a significant development in only three years, and these data show where attention should be focused to reach a wider audience. Moreover, schools were insignificant sources of information about biodiversity, with 5% of respondents mentioning schools or universities. However, because the

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younger generations are the most receptive target audience for environmental concerns, the future campaign needs to take this into consideration, using educational structures and new ways of e-communication such as web-based material; that is, those web services coming under the umbrella term of “Web 2.0” (O’Reilly, 2005), such as Wikipedia or Facebook (Menlo Park, CA).

Moreover, the European Union (EU) strongly encourages the development of interaction through social media. A striking example of use of social media as a communication tool for projects recently appeared on the Life+ website (EC, 2012).

2. “A European campaign must provide local examples for biodiversity loss and its causes”

Improving knowledge and public awareness of the (agro)biodiversity patrimony of our territory will increase the possibility of biodiversity to survive, because usually we defend what we know!

The Gellis Communications report (2008) emphasizes that the general public is aware of the global causes of biodiversity loss, such as, for example, climate change, and the challenge for the future is to break these causes down to smaller scales and introduce audiences to factors in their immediate surroundings.

Ultimately, these communication activities should focus on providing local examples and communicating them effectively.

In recent years, our research group have carried out several (agro)-biodiversity-related projects coming under the Apulian Regional Administration’s (ARA) “Rural Development Programme 2007–2013” (RDP), which contains specific actions aiming to protect and enhance the (agro)-biodiversity of some crops of some typical vegetable products of the Apulia region of southern Italy. For these projects, we chose to use Wikipedia to reach a wider audience and to inform them of what we have done.

In this article we describe the characteristics and main features of Wikipedia and how we used this collaborative platform for online divulgation. Moreover, we have monitored the reader’s interest in the information we added/edited in Wikipedia and if such articles can be useful as

referrals to the institutional project website (Ortaggipugliesi, 2013a) where information about these and other species have been added during the project.

Wikipedia

Wikipedia was launched in Jan. 2001 and is defined as “a free, web-based, collaborative, multilingual encyclopedia project supported by the non-profit Wikimedia Foundation” (Wikipedia, 2013a). The platform contains about 30 million articles. As of Oct. 2013, there are editions of Wikipedia in 287 languages (Wikipedia, 2013a). In recent years, Wikipedia, whose structure (articles, disambiguation pages, redirects, etc.) was well described by Medelyan et al. (2009), has become the largest and most popular general reference work on the Internet, ranking sixth among all websites on Alexa (San Francisco, CA) and having 365 million readers, with 12 billion monthly pageviews (Alexa, 2013).

The use of Wikipedia as a platform for communication and divulgation has some distinct advantages: it is free, it is online, and anyone can contribute to the articles. In fact, although article writing and/or editing may seem frustrating sometimes, especially for new users, working on the Wikipedia platform is quite a simple process, as described by Logan et al. (2010), who codified the editing process into 10 simple rules. Other advantages regards the cost of creating and publishing information [since it is a non-commercial website, it continuously reduces such costs, which eventually lessens barriers against such activities (Tseng and Huang, 2011)] and the license used in Wikipedia (Wikipedia, 2013b), enabling everyone to enrich the entries, so that the articles can be integrated by people with different skill sets, resulting in a complete encyclopedic entry.

Several authors have stated that Wikipedia content is as good and reliable as traditional authoritative encyclopedias (Emigh and Herring, 2005; Giles, 2005; Rosenzweig, 2006; Stvilia et al., 2005; Willinsky, 2007), although such statements have been criticized, in particular by Encyclopaedia Britannica (Chicago, IL) (Encyclopaedia Britannica, 2006). Wedemeyer (2008) conducted a study where 446

articles blind-sampled from Encyclopaedia Britannica were compared with the corresponding entries in Wikipedia, which lacked only 15 of the entries, and concluded that Wikipedia covers nearly all encyclopedic topics and was much more up-to-date than Encyclopaedia Britannica.

The “weak” side of Wikipedia’s reliability regards its susceptibility to vandalism and/or biased editing (i.e., editors with a conflict of interest concerning the subject matter they are writing about who diverge from Wikipedia’s neutral stance). Nielsen (2012) reported several examples and observed that in the end almost all of are reversed or corrected, although this can take from a few minutes to several months. Inappropriate editing, in some cases, may also have judicial implications (Ferran, 2011).

Anyway, the reliability and accuracy of the published material is an important consideration not only for Wikipedia, but also for scholarly publication. In fact, Xiao and Askin (2012) stated that accuracy is “reliant on three variables: the knowledge and communication skills of the author, the reliability of the sources cited, and the amendments made through the peer review and editing process” and that “Wikipedia’s dynamic nature is helpful with regard to reliability—inaccuracies can be corrected instantly, whereas errors in journal papers are corrected slowly if at all.” The same authors report that a featured article on Wikipedia is comparable to published research article, because such articles are validated through a peer-review process, although there are some differences between the two review processes.

The quality and authoritative-ness of Wikipedia in various areas, both scientific and humanistic, have been demonstrated by numerous academic studies and by several authors in peer-reviewed publications (Wikipedia, 2013c). Moreover, in a similar way as reported by Hermann et al. (2013), several searches performed for several crops [e.g., the landrace varieties Carota di Polignano carrot, Barattiere muskmelon (*Cucumis melo*), and Mugnoli broccoli (*Brassica oleracea* var. *italica*)] on search engines (i.e., Google, Mountain View, CA) list the corresponding Wikipedia article in the first rank.

This is an important aspect for student's searches, because, as reported by Halverson et al. (2010), the use of general websites (like Wikipedia) rank third of 11 between the sources used by students in their research.

Wikipediology, the study of Wikipedia, covers a wide spectrum of disciplines, and several researchers have examined the online encyclopedia, from different perspectives and its use in a variety of contexts. A Nielsen study (2012) examined over 1000 articles to provide an overview of Wikipedia research and tools and found that Wikipedia research falls into four categories: 1) examines Wikipedia, 2) uses information from Wikipedia, 3) explores technical extensions to Wikipedia, and 4) uses Wikipedia as a resource for communication. However, the author claims that it is not possible to provide a complete review of all materials published.

The use of Wikipedia as a tool for educational and divulgation purposes or as an object of study for writing scientific articles is more common in some fields than others. Park (2011) conducted a study to explore the extent of Wikipedia's presence in scholarly publications in Web of Science [WoS (Thomson Reuters, New York, NY)] and Elsevier's (Amsterdam, The Netherlands) Scopus databases. In his study, Park (2011) reports that, in WoS, about 16% of the citations to Wikipedia originate from computer science field, about 10% from information and library science, about 6% from literature, and about 6% from communications and engineering. In Scopus, about 42% of citations come from computer science, 24% from engineering, and another 21% from the social sciences. These results indicate that Wikipedia is underused as a communication and scientific tool for areas such as agriculture and biodiversity and has plenty of margins for growth.

Webb et al. (2010) report that "It is very likely that a community biodiversity inventory project that incorporates aspects of Internet social networking will be more successful than one that does not. What we probably need is a 'Facebook for biodiversity' (...)" and that "while developing specialized software such as Facebook is an expensive proposition, existing general-purpose platforms can be adapted to create a social networking biodiversity platform. We can use, for example, a 'content management system' such as (...) MediaWiki (as used by Wikipedia)."

So the question is, why not use an existing platform, one that is reliable and low-cost (for the end user) such as Wikipedia?

The use of web applications is becoming increasingly important to study science (Karno and Glassman, 2013) and, moreover, in recent years, Wikipedia has become increasingly important in the scientific community, so much so that a journal of the calibre of RNA Biology indicates that articles published in the section covering descriptions of families of RNA molecules must be accompanied by a Wikipedia page that summarizes the work (Butler, 2008). The first article scheduled according to these journal guidelines was "A survey of nematode SmY RNAs" (Jones et al., 2009), and its corresponding Wikipedia summary, reported in the article, can be found on Wikipedia (2013d).

The ARA's RDP 2007–2013: Wikipedia as a tool for online divulgation

The ARA's RDP 2007–2013 contains specific measures and actions to protect and enhance plant biodiversity (Elia and Santamaria, 2013). In particular, Measure 214 contains two actions aimed at supporting

farmers who are committed to preserving plant genetic resources at risk of local extinction: Action 3 ("protection of biodiversity") contains an annex (Annex 8) listing nine species/landraces of vegetables (and many more cereals, legumes, and fruit trees) at risk of genetic erosion; Action 4 ("integrated projects and regional system of biodiversity") contains measures with the aim to identify plants at risk of extinction and their distribution in the territory and, afterward, characterizing, propagating, and preserving them.

The vegetable species/landraces contained in Annex 8 were identified as being at risk of genetic erosion by our research group, so the ARA commissioned us to perform some tasks under the RDP umbrella with the aim of 1) finding the reproductive and propagation material relative to the vegetable crops on the list, 2) cultivating the vegetable crops, 3) characterizing them from a morphological point of view, and 4) producing technical brochures with the information and data collected. All these data were later processed, according to the Wikipedia "manual of style" (Wikipedia, 2013e) and "policies and guidelines" (Wikipedia, 2013f) to make them suitable for creating a Wikipedia article and placing inside the Italian subdomain of Wikipedia which, on early Nov. 2013, contains 1,074,780 articles (Wikipedia, 2013g).

According to Hermann et al. (2013), there are several possibilities as to how the academic community can engage in Wikipedia edits: 1) inserting links to specific products and publications with such species content, 2) editing existing articles, and 3) the creation of new articles on crops or themes not yet covered. From our point of view, the correct strategy is a compendium of the three

Table 1. List of the species that we add on the Wikipedia (Wikimedia Foundation, San Francisco, CA) platform from scratch. The principal scientific references used for the Wikipedia page are reported in the last column.

Common name	Scientific name	Landrace variety	Reference page on Wikipedia	Scientific reference
Carrot	<i>Daucus carota</i>	Carota di Polignano	Wikipedia (2013n)	Cefola et al. (2012, 2013)
Chicory	<i>Cichorium intybus</i>	Cicoria all'acqua	Wikipedia (2013o)	Not present
Broccoli	<i>Brassica oleracea</i> var. <i>italica</i>	Mùgnulo	Wikipedia (2013p)	Laghetti et al. (2005)
Tomato	<i>Solanum lycopersicum</i>	Pomodorino di Manduria	Wikipedia (2013q)	None
Common purslane	<i>Portulaca oleracea</i>	Portulaca	Wikipedia (2013r)	Gonnella et al. (2005)

methods; thus we have inserted/edited the articles in Wikipedia, and linked such entries to the institutional webpage regarding the (agro)-biodiversity (Ortaggipugliesi, 2013a). In addition, for every Wikipedia entry, we added several scientific references that were relevant to the topic, to provide a model as close as possible to a scientific article.

The vegetable species/landraces coming under RDP that have been added to the Wikipedia platform are reported in Table 1.

Our group has been on Wikipedia since 2007; so, apart from the species/landraces falling under RDP, we added more species/landraces already studied in previous projects (Table 2).

In addition to the entries, we added several files to Wikipedia commons (Fig. 1), an online repository for image, sound and other media files. As of Nov. 2013, it contained over 19 million files (Wikipedia, 2013h). The images we added (Fig. 1) were necessary because many species have no pictures at all, and often good close-ups of plant parts, or images showing diversity, are rare, and such images are often linked to articles in other Wikimedia projects including Wikipedia, Wikibooks, Wikisource, and Wikinews, or downloaded for off-site use.

Results

For reasons of space, this section presents only the case study of the

article on ‘Carota di Polignano’ carrot (CdP).

EDITING HISTORY OF THE ARTICLE. For the CdP, the editing history of the article consists of 90 edits in total (Wikipedia, 2013i). At the beginning, our contribution was substantial, with 63 edits (70% of total) (Wikipedia, 2013i). Later we asked the Wikipedia community to peer-review the article, to propose it as a “featured article” (Wikipedia, 2013l). Featured articles, according to Xiao and Askin (2012), are those articles that are comparable to published research articles, because they are validated through a peer-review process.

We opened the peer-review procedure on 16 July 2013 and

Table 2. List of the species that we modified on the Wikipedia (Wikimedia Foundation, San Francisco, CA) platform. The principal scientific references used for the Wikipedia page are reported in the last column.

Common name	Scientific name	Landrace variety	Reference page on Wikipedia	Scientific reference
Muskmelon	<i>Cucumis melo</i>	Barattiere, Carosello	Wikipedia (2013s)	Buttaro et al. (2009) Conversa et al. (2005) Parente et al. (2005a, 2005b)
Rapini, broccoli rabe	<i>Brassica rapa</i>	Cima di rapa	Wikipedia (2013t, 2013u)	None

Fig. 1. List of media files uploaded on Wikimedia Commons (Wikimedia Foundation, San Francisco, CA) by our research group. For each file, several information (license, caption, file type, date of upload, file size, and dimension) are reported.

<p>Dal confronto dei tre principali zuccheri presenti (glucosio, fruttosio e saccarosio), è stato osservato che le carote di Polignano mostrano un contenuto totale di glucosio, fruttosio e saccarosio mediamente inferiore di circa il 22% rispetto alla carota commerciale, con una maggiore percentuale di glucosio e fruttosio rispetto al saccarosio. Quindi, il più basso apporto glucidico delle carote di Polignano favorirebbe il loro consumo da parte di soggetti con problemi del metabolismo insulinico<ref name=Cefola_et_al_UFS>Cefola, M., Pace, B., Renna, M., Santamaria, P., Signore, A., Serio, F., 2012. Compositional analysis and antioxidant profile of yellow, orange and purple Polignano carrots. [http://www.chirotti.it/pdf/ijfs/inpress2012/IJFS%2012-3%20PACE.pdf Italian Journal of Food Science], 24 (3), 284-291</ref>. Tale considerazione nasce anche dalla constatazione che circa un terzo degli zuccheri, rappresentati dal fruttosio, ha un basso indice glicemico, a differenza delle carote commerciali il cui contenuto di tale monosaccaride rappresenta poco più del 12%<ref name=Cefola_et_al_UFS>Cefola, M., Pace, B., Renna, M., Santamaria, P., Signore, A., Serio, F., 2012. Compositional analysis and antioxidant profile of yellow, orange and purple Polignano carrots. [http://www.chirotti.it/pdf/ijfs/inpress2012/IJFS%2012-3%20PACE.pdf Italian Journal of Food Science], n. 3, Vol 24, 284-291</ref>.</p>	<p>Per quanto concerne l'attività [[antiossidante]] si nota come questa sia maggiore nelle carote viola, di circa quattro volte rispetto alle carote comuni e quasi di dieci volte rispetto alle radici gialle o arancioni<ref name=Cefola_et_al_UFS>Cefola, M., Pace, B., Renna, M., Santamaria, P., Signore, A., Serio, F., 2012. Compositional analysis and antioxidant profile of yellow, orange and purple Polignano carrots. [http://www.chirotti.it/pdf/ijfs/inpress2012/IJFS%2012-3%20PACE.pdf Italian Journal of Food Science], n. 3, Vol 24, 284-291</ref>.</p>
<p>Interessante risulta anche l'indice di dolcezza relativa, cioè la percezione del gusto dolce al palato, dovuto alla quantità e alla tipologia di sostanze con "potere dolcificante" presenti negli alimenti<ref name=Cefola_et_al_UFS>Cefola, M., Pace, B., Renna, M., Santamaria, P., Signore, A., Serio, F., 2012. Compositional analysis and antioxidant profile of yellow, orange and purple Polignano carrots. [http://www.chirotti.it/pdf/ijfs/inpress2012/IJFS%2012-3%20PACE.pdf Italian Journal of Food Science], n. 3, Vol 24, 284-291</ref>.</p>	
<p>Per quanto concerne l'attività antiossidante si nota come questa sia maggiore nelle carote viola, di circa quattro volte rispetto alle carote commerciali e quasi di dieci volte rispetto alle radici gialle o arancioni<ref name=Cefola_et_al_UFS>Cefola, M., Pace, B., Renna, M., Santamaria, P., Signore, A., Serio, F., 2012. Compositional analysis and antioxidant profile of yellow, orange and purple Polignano carrots. [http://www.chirotti.it/pdf/ijfs/inpress2012/IJFS%2012-3%20PACE.pdf Italian Journal of Food Science], n. 3, Vol 24, 284-291</ref>.</p>	
<p>Inoltre, è stato possibile mettere a punto un metodo per stimare il contenuto di antiossidanti attraverso l'elaborazione computerizzata di una fotografia digitale delle radici.<ref>Pace, B., Cefola, M., Renna, F., Renna, M., Serio, F., Attolico, G., 2013. Multiple regression model and computer vision system to predict antioxidant activity and total phenols in pigmented carrots. [http://www.sciencedirect.com/science/article/pii/S0260877413000745 Journal of Food Engineering], 117, 74-81.</ref></p>	<p>Inoltre, è stato possibile mettere a punto un metodo per stimare il contenuto di antiossidanti attraverso l'elaborazione computerizzata di una fotografia digitale delle radici.<ref>Pace, B., Cefola, M., Renna, F., Renna, M., Serio, F., Attolico, G., 2013. Multiple regression model and computer vision system to predict antioxidant activity and total phenols in pigmented carrots. [http://www.sciencedirect.com/science/article/pii/S0260877413000745 Journal of Food Engineering], 117, 74-81.</ref></p>
<p>Attualmente la carota di Polignano viene studiata per l'ottenimento di prodotti derivati (confetture) che possano ampliare l'interesse verso questo ecotipo e, di conseguenza, la sua coltivazione, cercando di mantenere intatte le caratteristiche nutrizionali della radice attraverso metodi di preparazione innovativi di tali prodotti<ref name=Renna_et_al_LWT-Food_Science_and_Technology>Renna, M., Pace, B., Cefola, M., Santamaria, P., Serio, F., Gonnella, M., 2013. Comparison of two jam making methods to preserve the quality of colored carrots. [http://www.sciencedirect.com/science/article/pii/S0023643813001138 LWT - Food Science and Technology], 53, 547-554</ref>.</p>	<p>Attualmente la carota di Polignano viene studiata per l'ottenimento di prodotti derivati ([[Marmellata confetture]]) che possano ampliare l'interesse verso questo ecotipo e di conseguenza la sua coltivazione, cercando di mantenere intatte le caratteristiche nutrizionali della radice attraverso metodi di preparazione innovativi di tali prodotti<ref name=Renna_et_al_LWT-Food_Science_and_Technology>Renna, M., Pace, B., Cefola, M., Santamaria, P., Serio, F., Gonnella, M., 2013. Comparison of two jam making methods to preserve the quality of colored carrots. [http://www.sciencedirect.com/science/article/pii/S0023643813001138 LWT - Food Science and Technology], 53, 547-554</ref>.</p>
<p>==Altro==</p>	<p>==Carota di Tiggiano==</p>
<p>Un ecotipo di carota simile a quella di Polignano è coltivato a Tiggiano, in provincia di Lecce, ed è denominata "carota giallo-viola di Tiggiano" o "pastanaca ti santu pat", in onore a Sant'Ippazio, il Santo Patrono di Tiggiano.</p>	<p>Un ecotipo di carota simile a quella di Polignano è coltivato a Tiggiano, in provincia di Lecce, ed è denominata "carota giallo-viola di Tiggiano" o "pastanaca ti santu pat" (in onore a Sant'Ippazio, il Santo Patrono di Tiggiano).</p>
<p>Quest'ultima è inclusa nell'elenco nazionale dei [[prodotti agroalimentari tradizionali pugliesi]].</p>	<p>Quest'ultima è inclusa nell'elenco nazionale dei [[prodotti agroalimentari tradizionali pugliesi]].</p>
<p>A differenza della carota di Polignano, la colorazione della carota di Tiggiano può essere bianco-giallastro ma è sempre screziata, in misura più o meno maggiore, di violetto.</p>	<p>A differenza della carota di Polignano, la colorazione della carota di Tiggiano può essere bianco-giallastro ma è sempre screziata, in misura più o meno maggiore, di violetto<ref name=tipicipuglia.it> [http://www.tipicipuglia.it/disciplinari/Of9.doc Scheda della carota giallo-viola di Tiggiano sul sito tipicipuglia.it]</ref>.</p>

Fig. 2. Partial screenshot showing the differences between different revisions for the ‘Carota di Polignano’ carrot article. The “-” and “+” symbols indicate the text deleted or added, respectively.

immediately several users made their contribution (Fig. 2). Such changes, before and after peer review, are visible in whole in the editing history of the article (Wikipedia, 2013i).

The changes made by other users were substantial and helped improve the article, testifying to the interest of the community in participating in the peer-review process, with

several suggestions and edits (Fig. 3). This also shows the usefulness of the Wikipedia community in improving the article.

PAGEVIEW OF THE WIKIPEDIA’S ARTICLE. From the day on which the CdP article was created in Wikipedia (10 Nov. 2011) until 30 Oct. 2013, it received more than 15,000 pageviews (Fig. 4). A sudden increase starting

from Oct. 2012 is visible and corresponds to the occurrence of a conference on (agro)biodiversity that was held in Sept. 2012 in Valenzano (Italy), in which CdP was discussed without alluding to the Wikipedia article. Starting in Oct. 2012, a web search for CdP in Google or Yahoo (Sunnyvale, CA) returns the corresponding entry in Wikipedia as first

Carota di Polignano (agricoltura) [edit source]

Allo stato attuale delle mie conoscenze la voce è abbastanza ricca, anche grazie ai riferimenti bibliografici, ma magari qualcuno può fornire legate ad aspetti non scientifici (per es. di etnobotanica, ammesso che siano disponibili). --Angelo Signore (msg) 09:51, 16 lug 2013 (CEST)

Revisori [edit source]

- --Angelo Signore (msg) 14:37, 16 lug 2013 (CEST)
- --Daniele Pugliesi (msg) 15:11, 16 lug 2013 (CEST)
- --Massimiliano Renna (msg) 15:47, 16 lug 2013 (CEST)

Suggerimenti [edit source]

- Le fonti presenti sono ancora poche, in particolare bisognerebbe aggiungere almeno una fonte nella sezione "Morfologia" per validare i dati numerici sulla lunghezza. **✓ Fatto**, e nelle sezioni "Ciclo culturale" **✓ Fatto**, "Carota di Tiggiano" **✓ Fatto** e "Preparazione". --Daniele Pugliesi (msg) 14:30, 16 lug 2013 (CEST)
 - Caro Angelo, a beneficio del Lettore non agronomo o esperto è opportuno inserire nel testo (solo la prima volta in cui occorrono) i collegamenti alle altre voci già presenti, come Radice (botanica). Buon lavoro e cordiali saluti, --Alessandro Crisafulli (msg) 14:51, 16 lug 2013 (CEST)
 - **✓ Fatto** Grazie per il suggerimento, ho visto che ha fatto l'ingegner Pugliesi. --Angelo Signore (msg) 15:00, 16 lug 2013 (CEST)
 - Ho modificato il termine "carote commerciali" con "carote comuni"; infatti anche le carote di Polignano possono essere commerciate, quindi il termine "commerciale" non è abbastanza specifico. --Daniele Pugliesi (msg) 15:00, 16 lug 2013 (CEST)
 - **✓ Fatto** Nella frase "Interessante risulta anche l'indice di dolcezza relativa" non si capisce per quale motivo sia interessante. Meglio riformulare la frase e renderla più esplicita. --Daniele Pugliesi (msg) 15:00, 16 lug 2013 (CEST)
 - **✓ Fatto** Riguardo alla frase "problemi del metabolismo insulinico" per chiarire si potrebbe inserire tra parentesi di cosa si tratta; suppongo che si faccia riferimento a ipoglicemia e iperglicemia, ma non essendo esperto in medicina potrei sbagliarmi. --Daniele Pugliesi (msg) 15:07, 16 lug 2013 (CEST)
 - **✓ Fatto** Specificare meglio cosa si intende per "raccolte scalari". --Daniele Pugliesi (msg) 15:07, 16 lug 2013 (CEST)
 - Bisognerebbe creare una sezione "Bibliografia" dove mettere i testi indicati nelle note, che vanno richiamati nelle note brevemente tramite il template:Cita. --Daniele Pugliesi (msg) 15:07, 16 lug 2013 (CEST)
 - IMO, ma potrei non essere condiviso, più che il template:tassobox che si usa per le specie vedrei bene l'uso del template:gastronomia. Ho posto un quesito relativo ai presidi SF qui. --Potapfink (msg) 14:45, 17 lug 2013 (CEST)
- Per il discorso del template: non sono sicuro che si adatti meglio quello di gastronomia, in fondo stiamo parlando di una specie (*Daucus carota*) per la quale la parte relativa alla gastronomia è "secondaria", nel senso che è solo un piccolo paragrafo di tutta la voce.
- Non saprei. In effetti le informazioni riportate nel tassobox sono una ripetizione di quanto già riportato nella voce sulla carota. Non si tratta infatti di una specie, ma di un ecotipo di una specie, dunque a tutti gli effetti è una carota. Ad esempio per le razze canine non si riporta il tassobox, ma un template più specifico (Template:Baubox). --Daniele Pugliesi (msg) 17:05, 17 lug 2013 (CEST)
- La specie è *Daucus carota*, questa è una sua cultivar (o varietà o ecotipo ... ?), quindi sono anche io per usare il template gastronomia e non per il tassobox (che come detto sopra non aggiunge niente a quanto dice quello riferito alla specie). Anche per altre varietà locali di ortaggi è così: Asparago di Badoere, Pesca di Bivona, Anguria di Siracusa
- YackYack** (msg) 13:57, 26 lug 2013 (CEST)
- Sì, è un ecotipo, ma non una cultivar, secondo la sua definizione. A questo punto allora potremmo usare il template che proponete, visto che è stato fatto anche per altre specie. --Angelo Signore (msg) 12:15, 5 ago 2013 (CEST)
- **✓ Fatto YackYack** (msg) 17:59, 2 set 2013 (CEST)
- Il sistema delle note può migliorare: alcune pubblicazioni potrebbero stare in bibliografia, con rimando in nota, similmente a come ho proposto qui #94.38.225.93 (msg) 18:14, 23 lug 2013 (CEST)
- Ok, potremmo spostare nella bibliografia quella vera e propria, ma allora credo che le note da 6 a 9 dovrebbero essere spostate in quella sezione, cosa ne pensi? --Angelo Signore (msg) 12:19, 5 ago 2013 (CEST)
- Scusate l'OT: trovo interessante l'accento alla Carota di Tiggiano, la quale potrebbe avere una voce a sé stante in quanto PAT. #94.38.225.93 (msg) 17:53, 23 lug 2013 (CEST)
- Sì, la carota di Tiggiano meriterebbe una voce a parte ma, dal nostro punto di vista (come gruppo di ricerca intendo), ancora non abbiamo abbastanza informazioni di carattere scientifico per scrivere qualcosa, abbiamo solo notizie di tipo etnobotanico, che sono state anche trasmesse ad una puntata di Geo&Geo, quindi aspettiamo di avere qualcosa di più importante per scrivere qualcosa, sta per partire anche progetto sull'agrobiodiversità con quale pensiamo di raccogliere informazioni interessanti. --Angelo Signore (msg) 12:22, 5 ago 2013 (CEST)

Fig. 3. Partial screenshot showing the peer-review workflow of the ‘Carota di Polignano’ carrot article. The control mark on the left indicates that the suggested revision was implemented.

link, confirming that Wikipedia is an important entry point. Before Oct. 2012, people who searched for that term did not receive a Wikipedia page (that did not exist) but a list of webpages that did not include information with scientific references. Therefore, the creation of the CdP page on Wikipedia was appropriate to provide information with scientific references.

REFERRALS. The referral or HTTP referer (originally a misspelling of referrer) “is a HTTP header field that identifies the address of the webpage that linked to the resource being requested. By checking the referer, the new webpage can see where the request originated” (Wikipedia, 2013m); so, when visiting a webpage, the

referrer or referring page is the URL of the previous webpage from which a link was followed. The referrals are usually accessed for marketing purposes or to track users’ navigation, allowing investigators to understand the way in which a user reaches a website.

We used the referrals to understand how the users have reached the institutional website of the Regional project, to understand the importance of Wikipedia’s impact as a referral.

For this comparison, we considered the users who visit the CdP webpage in the institutional website (Ortaggipugliesi, 2013b) and the referrer from which a user comes. The CdP webpage was created on 13 Jan. 2011, whereas the corresponding article in Wikipedia was created on 10

Nov. 2011. The referrals in 2011, when the CdP page on Wikipedia did not exist and in 2012, when the CdP article on Wikipedia had existed for several months were examined using Google Analytics (owned by Google) to determine the sources of traffic.

All the parameters (Visits, Page/Visits, Average Visit Duration, % New Visits, Bounce Rate) were increased in the period in which the article in Wikipedia acts as a referral toward the institutional website (Fig. 5), considering either the web version [ranking first as referral (data not shown)] or the mobile version of Wikipedia. The only exception was % new visits in the mobile version, which was decreased by 2.86% (Fig. 5). The bounce

Fig. 4. Cumulative pageviews of the ‘Carota di Polignano’ carrot article from its creation on Wikipedia platform (Nov. 2011 to Oct. 2013).

Source	Visits ?	↓ Pages / Visit ?	Avg. Visit Duration ?	% New Visits ?	Bounce Rate ?
it.wikipedia.org					
13-Jan-2012 - 10-Nov-2012	507	2.98	00:01:23	91.32%	55.42%
13-Jan-2011 - 10-Nov-2011	391	2.74	00:01:16	89.77%	64.96%
% Change	29.67%	8.77%	8.90%	1.73%	-14.68%
it.m.wikipedia.org					
13-Jan-2012 - 10-Nov-2012	35	1.80	00:00:39	97.14%	74.29%
13-Jan-2011 - 10-Nov-2011	9	1.33	00:00:15	100.00%	77.78%
% Change	288.89%	35.00%	167.55%	-2.86%	-4.49%

Fig. 5. Partial screenshot of Google Analytics (Google, Mountain View, CA) showing statistical data about referrals from Wikipedia toward the institutional website.

rate improved even if its value assumes a negative parameter because, according to Google Analytics help (Google, 2013) it “is the percentage of visits that go only one page before exiting a site,” namely the people who leave the webpage because they do not find interesting content within. Therefore, the Wikipedia article referred users to the institutional site.

Discussion

The online web-based applications are widely used, and their use covers several aspects, including teaching methods in agriculture (Lea-Cox et al., 2002).

As reported by Godefroid and Vanderborcht (2011), case studies, best practices, and experiences of plant reintroductions or, as in our

case, projects on (agro)biodiversity, are often not sufficiently disseminated to the public at large and to the scientific community. The Wikipedia platform could hence make our information available to a wider audience and keep this information updated, as reported by Voss et al. (2010).

Wikipedia is viewed with increasing interest by the scientific community,

with both negative and positive evaluations. It is useful as a tool for disseminating information to the general public. It also has a method of improving the quality of articles built into the platform. Our results show that the interest in topics such as (agro)biodiversity is very high, but such topics are not easily found by the public. In fact, when the article about the CdP was written in Wikipedia, the number of readers grew exponentially (Fig. 4) showing that such information was needed but was not centralized in a single source.

The use of Wikipedia is also interesting as content “channeler” toward other websites that can include other relevant information that cannot be placed into the Wikipedia platform (e.g., video of considerable length, articles contained in scientific journals, etc.). By creating (or modifying) a page in Wikipedia and linking (into the notes or references section) a URL with relevant content, Wikipedia can be used as an “entry point,” because of its high ranking in search engines. Visitors are then invited through the references to explore new webpages (or scientific articles) to deepen their knowledge. Although in our institutional website the CdP article was already present (Ortaggipugliesi, 2013b), the visits to the institutional webpage increased after the creation of the article on the Wikipedia platform (referral effect), and the bounce rate decreased. This means that the content to which Wikipedia redirects, namely our webpage (through the references present into the Wikipedia article) would not have been visited in the same manner although it contained interesting material, because it was not visible among the top results of search engines.

Our experience with the edits in Wikipedia indicates that the cooperation with other users can improve the quality of the article itself, especially if the aim is to build a “featured article,” that is similar to a peer-review in a scientific journal, as reported by Xiao and Askin (2012).

Conclusions

Wikipedia can be an excellent starting point for collecting, updating, and sharing information on (agro)biodiversity. In our study, the Wikipedia platform was used to add/edit information on (agro)biodiversity,

since most of that information, including pictures, was not generally available to the general public, so that stakeholders can use and collect the information we made available.

A major challenge while writing into the Wikipedia platform is to overcome the distrust on the part of the academic world. To do this, a criteria that we used was that of putting scientific references regarding articles already published in scientific journals, to give the possibility to the reader to deepen the knowledge of the information we added/edited into the collaborative platform.

Wikipedia is not a potential antagonist for scientific journals. On the contrary, it can be a useful tool to facilitate the entry of visitors toward content that, otherwise, would not be found thereby helping to strengthen these journals. Wikipedia is no more dangerous for people or students searching for scientific information than other sources. Its usefulness depends on the completeness of the information and the expertise of the authors. For this reason, teachers and experts should be encouraged to write appropriate and well-documented articles, inserting scientific references for scientific journals, similarly references in a scientific article.

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