

## **The Main Features of the Yemeni Journal of Agricultural Research and Studies "YJARS": (1994-2010): A bibleiometric Study**

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### **Abstract:**

The study aimed at analyzing the materials of 22 issues of YJARS published by AREA (1994 - 2010). The sample consisted of 332 published items appeared at an average of 15 topics/issue, at a rate of 2 journal issues/year. Research articles formed 60% of the total sample. Remaining eight types of published materials appeared at lower percentages. Among 14 agricultural disciplines identified, only few disciplines scored a relatively high percentages such as "socio-economics", "crop protection" and "cereals". The remaining specialties realized meager percentages of the total sample like: "farm mechanization", "genetics" and "bio-technology". The study suggested some measures for future improvement.

### **How to cite**

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الملاحم الرئيسية للمجلة اليمنية للبحوث والدراسات الزراعية (1994-2010): دراسة بيبليومترية

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### المستخلص

هدفت الدراسة إلى تحليل 22 عدداً من أعداد المجلة اليمنية للبحوث والدراسات الزراعية (1994-2010م). شملت العينة 332 مادة منشورة ظهرت بمتوسط عددين/السنة، وبمتوسط 15 عنواناً/عدد. تبين أن (60%) من عينة الدراسة عبارة عن مقالات بحوث علمية، وتوزعت بقية النسبة على 8 من أنواع النشر العلمي المعروفة بنسب منخفضة ومتفاوتة: "مقالات المراجعة"، و"عروض الكتب"، و"وقائع الفعاليات العلمية الزراعية"، و"القوائم الببليوغرافية الزراعية". توزعت المواد المنشورة على 14 مجالاً علمياً زراعياً، قليلاً منها كان أكثر تكراراً نسبياً كـ: "الاقتصادية-الاجتماعية"، و"وقاية المزروعات"، و"المحاصيل الحقلية". وظهرت باقي المجالات بنسب متدنية كـ: "المكننة الزراعية"، و"تربية النبات"، و"التقانات الحيوية". تضمنت الدراسة بعض التصورات لتطوير النشر العلمي مستقبلاً.

### **Introduction:**

The experience of scientific agricultural journals publishing is a new activity in Yemen to a large extent. It has emerged into existence after few decades of the institutional foundation and development of the agricultural research programs that is initiated during the British colonial era. This experience could be actually traced to just few years before the declaration of the unification of two former Yemeni states In May 1990. More specifically, during the years 1988-1990 two agricultural research journals have been published by the fading pre-unification agricultural institutions of both former states, prior to the establishment of the new entity of the national "Agricultural Research and Extension Authority (AREA)".

Anyway, there might have been other agricultural journals of scientific nature partially or totally, that the country might has witnessed prior to the abovementioned journals. This might has happened as an activity of certain agricultural agency, project and/or college.

Though any such an earlier or parallel attempt or an experience could have been existing, it is in any case considered outside the scope of the present study, which is mainly addressing the experience of issuing the scientific "Yemeni Journal of Agricultural Research and Studies (YJARS)" by the specialized mandated institution of agricultural research at the national level: the "Agricultural Research and Extension Authority (AREA)". But, the rest of other efforts certainly may need similar attention through another separate investigation too.

It is well known that the issuance of any periodical has specific goals and targets it seeks to achieve, and some certain trends and concerns it struggles to serve. These are normally embodied not only in its internal rules and regulations but also expressed through its different contents included in various published materials maintained by commitment and surveillances of the editorial board of the journal. It is supposed to occur through achieving a kind of balanced content and maintaining acceptable and predetermined standards, with respect to the varied aspects linking and serving both form and content of the journal.

Examples of such aims; trends or policies of any scientific journal is that it seeks to provide an opportunity for researchers to publish their scientific outputs on a regular basis with the aim of doubling their contribution to the accumulation of scientific knowledge at an appropriate level; and to ensure an exchange of ideas, information and experiences among workers in the scientific community in general and the agricultural specialty in particular. Alongside with this, it has to take into consideration the overall context and trends of the agricultural, environmental and developmental policies and strategies of the country as a whole. The journal could also aim at achieving improvement in the area of scientific writing and communication itself, especially using the national language.

Therefore, it was necessary to undertake this exploratory and analytical posture to diagnose the experience of this scientific journal, in order to know its characteristics; and to draw important lessons and experiences that have accompanied its path of development. This is to take

advantage of such results so as to identify the themes and features for considering future trends in a more flexible and responsive manner to changing circumstances and developments relating to scientific research and agricultural development inside and outside the country.

### **Objectives of the study:**

The study was more specifically guided by the following aims:

1. Determining the regularity of YJARS publication.
2. Defining the number of articles appearing in each single issue of the YJARS.
3. Identifying the types or forms of published material in the YJARS.
4. Scrutinizing the extent of agricultural discipline coverage in the YJARS.
5. Articulating some lessons that could be learnt from the journal publishing experience, and formulating appropriate recommendations for the further future development of the journal.

### **Materials and Methods:**

The study sample included all issues of the YJARS as well as all the materials and articles appeared since the first edition of the journal in 1994, up to the issue number 22 published at the end of 2010 as the unit of analysis. The total number of articles reached 332 (details in Table no. 1).

The study used the food and agricultural organization of the united nations-agricultural research information system (FAO-AGRIS) subject classification system of agricultural fields/disciplines to analyze and classify the materials published constituting the study sample. This system suggests 17 categories for all agricultural information topics or disciplines. However, it was adjusted to suit the local Yemeni situation whenever necessary taking into account that some of the agricultural disciplines are either totally lacking or present to a very limited extend. As a result, a taxonomy of 14 categories has evolved in this study as delineated in the following sections.

The study dealt with its population as a sample. This has resulted mainly from the nature of its predetermined purpose of investigating the "publishing experience of YJARS published by AREA as being the national institution for farm scientific research as mentioned earlier, which goes back to the early in the mid-nineties of the past century.

The starting point was triggered from the question over the importance of crystallizing such experiences which stretched throughout the period of nearly 18 Years by the end of 2010, and the need to draw lessons learned from it to form the pillars of an appropriate guiding process in any serious passage for real development of the journal, especially in light of constant changes

witnessed by the country in various aspects related to agricultural as well as farm research arena and the journal itself.

The lessons of such an experience might be also of importance to the dissemination of scientific information and specialists involved in the process be they agricultural or non-agricultural researchers or academicians and other members of the Yemeni scientific community in the context of efforts aiming to develop science media publishing and scientific communication in general.

A number of computational methods of descriptive statistics such as percentages, means, and range were used to analyze the data in accordance to their suitability to the exploratory and descriptive nature of the study and its objectives.

## Results and Discussion

### 1. Regularity of YJARS issuance and number of articles published per issue:

As shown in Table (1) the YJARS has appeared for the first time in 1994, but stopped during the period 1995-1996, to reappeared in 1997 at a rate of one issue per year for both 1994 and 1997 years. But, the journal was quickly put into invisibility again for a period of three consecutive years until 2000. This period of irregularity was mainly due to staff long study-leave, financial and other management reasons.

The data in Table (1) also shows that starting the year of 2000 the journal has appeared again when the third journal issue was published. Starting the year 2001, the journal appeared on a more regular basis with an average of two issues per year until the last ear of analysis (2010), except the year 2006 when only a single issue appeared.

Results of the study (Table 1) also indicate that the number of articles published has varied from one years to another. The year 1997 scored the least number of articles (8 articles or 2.4%) while the year 2004 has realized the largest number of articles (41 articles or 12%). It should be noted that in the former only one issue was published while in the later 2 issues were published.

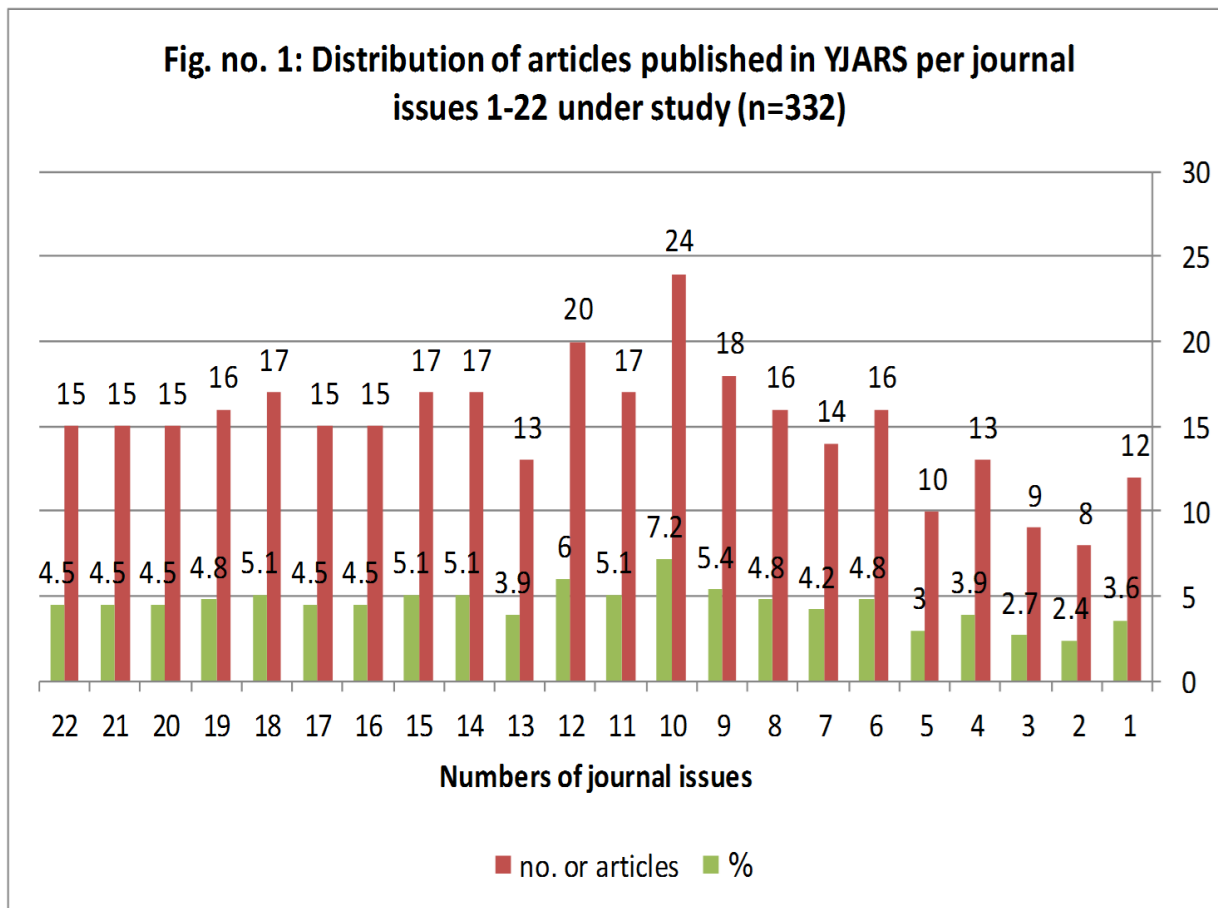
Table (1) Distribution of YJARS issues according to year(s) of issuance and the number of articles published per year

Year of Publication	Number of YJARS issues	% of the total	Number of articles	% of the total
1994	1	4.5	12	3.6

1997	1	4.5	8	2.4
2000	1	4.5	9	3
2001	2	9	23	7
2002	2	9	30	9
2003	2	9	34	10
2004	2	9	41	12
2005	2	9	33	10
2006	1	4.5	17	5
2007	2	9	32	10
2008	2	9	32	10
2009	2	9	31	9
2010	2	9	30	9
<b>Total</b>	<b>22</b>	<b>100.0</b>	<b>332</b>	<b>100.0</b>

Findings displayed in figure (1) showed that the distribution of the total number of articles published in different issues of the YJARS (332 article) was not consistent and varied from one issue to another with an average of about 15 articles per a single issues of the journal. It was found that the range was 16 article. The second issue of the journal has appeared with the lowest numbers of articles (8 only 2.4%), while the journal issue number ten (10) with the highest number of articles (24 or 7.2%) .

Naturally, the size of each issue and the total number of articles published in each issue are different from one issue to another, according to the number of research articles reaching the journal board; number of pages of each article and the decision of the editorial board or managing editor concerning number of articles to be included in a particular issue of the journal on bases of many overlapping factors such as budget and responsiveness of referees and authors.



Average = 15.1 articles

Range = 16 articles

## 2. Types of Published Material:

Authors and specialists dealing with the matter of the forms of scientific writing or types of scientific publications taxonomy tackles this topic relying on many and varying ways of classifications according to specific standards and platforms. But, certainly there are many forms of specialized scientific writing and publishing or what can be called "scientific publications" as they are called in some references and literature.

One of these forms or formats is the "research article" or the "scientific paper", or what may be called "scientific research"; the "scientific review article", the "short communications" or what is sometimes alternatively called the "Current Awareness Essays", the "scientific theses /dissertations", the "reports", the "abstracts", and the "Book/Report Reviews", among others (Alsaraj, 1990).

The data in Table (2) showed that more than half of the published materials (60.5%) fell within the category of "scientific research articles" while the remaining percentage was distributed among other types of materials such as: "Abstracts of agricultural theses" and "Agricultural scientific and technical reports" (13.3%); "General scientific studies papers" (8%), and a other varieties of materials of varying proportions such as: "Proceedings"; "Reviews articles" and "Agricultural bibliographies" among others. Suggest how these data types are published material, as well as the diversity of scientific writing in the magazine.

Results of the study exhibited in Table (2) indicate that majority of the published material in YJARS, despite their diversity, is consistent with the nature of the journal, its name and mandate being a "scientific refereed journal".

Table (2) Distribution of materials published in various issues of the YJARS by type (Form of scientific writing) (n=332 articles)

<b>Types/categories of articles published</b>	<b>Frequency</b>	<b>%</b>
scientific research articles/papers	201	60.5
Abstracts of theses and reports	44	13.3
General scientific studies papers	28	8.4
Proceedings of scientific events	23	7
book reviews	21	6.3
Agricultural bibliographies	10	3
Review articles/papers	2	0.6
Research Briefs/short communications	2	0.6
General other materials	1	0.3
<b>Total</b>	<b>332</b>	<b>100.0</b>

From Table (2) also, it is clear that about 61% of the published material belong to the category of "scientific research articles", in addition to other percentages representing materials that have fallen within the categories of "scientific studies papers" (about 8%); "scientific review articles" and "short research communications" (about 1%). All these types of materials published in the YJARS are subject to referral assessment. Thus, it can be concluded that the journal is in line with its mandate and purpose of publication.



These results matched the findings of the Alsharjabi (1994) in terms of diversity of materials published in the refereed scientific journal, who identified four types of materials in his study, while in the current study this number reached 9 types of published materials or forms of scientific journal writing.

The result of the current study is also consistent with previous results (Alsharjabi, 1994), in term of the high percentage (80%) occupied by the "research articles/papers" category which occupied only 60% in this study. The difference could be attributed to the lower total study sample and the limited number of types of published materials identified in the former study (4 types) which has jumped to 9 types in the present study. It is likely that the time gap between both studies was behind the emergence of new types published materials or other forms of refereed scientific writings among researchers. It could be considered as parts of the new addition, development and diversity that are characterizing the evolution of YJARS.

Such a diversity in particular, exists in many specialized scientific periodicals as stated by some earlier works (Alsaraj, 1990 and Mukbel, 2006). It seems that the specializing – and perhaps the more the non-specializing – journal readers need such diversity not only to break the monotony and boredom of a typical research writing forms, but also to obtain a variety of rich and varied material to enable them pursue new scientific and technical aspects directly and/or indirectly relating to his discipline such as review papers, book reviews, theses and dissertations' summaries and short communications and the like.

### **3. Coverage of Agricultural disciplines:**

The results mentioned in the previous sections of this paper (tables 1-2) provide clear clues about the nature of the YJARS and its publishing trends and concerns in terms of type or forms of material published.

However, the data depicted in Table (3) shows the distribution of materials published in the journal as per the agricultural disciplines, which is another angle to look at the nature of the trends and concerns of the scientific publishing that characterized the study sample of materials appeared in the YJARS.

It is clear from the data (Table 3) that the material published in the studied issues-sample of the journal has varied significantly and covered a wide range of disciplines or fields, albeit at varying degrees. About one-fifth of the total published materials (19.7%) belong to the category of "agricultural socio-economics", followed by "Plant Protection" (14.2%). The third, fourth and fifth ranks were occupied by "field crops"; "horticulture", "natural resources" categories at rates of 12.3, 10.5% and 10.2% respectively.

Representation or presence of most other agricultural disciplines or field categories has realized a percentages lower than 10% of the total study sample under investigation. Still some other disciplines scored a minimum of 2-3% of the total sample in terms of their portion of published materials such as "forests and pastures", "Plant breeding", mechanization and plant physiology .

Table (3) Distribution of published materials in various issues of the YJARS by Specialization

<b>Agricultural Disciplines/Fields</b>	<b>Frequency</b>	<b>%</b>
Socio-economics	65	19.6
Plant Protection	47	14.2
Field Crops	41	12.3
Horticultural crops	35	10.5
Natural resources	34	10.2
Livestock	31	9.3
Food Science and post-harvest technologies	27	8.1
Unclassified "General agricultural sciences"	23	6.9
Forests and Pastures	10	3
Agricultural mechanization	8	2.4
Plant Breeding / genetics	6	1.8
Plant Physiology	5	1.5
<b>Total</b>	<b>332</b>	<b>100.0</b>

Despite the presence of a large number of disciplines at varying percentages of the total number of materials published in the YJARS issues under investigation, the data shown in Table (3) indicate that there exists a state of imbalance in the published material in terms of the coverage of various disciplines of agricultural and other affiliated sciences. But, this case does not necessarily reflect a defect of poise in the research programs and activities being carried out in the country either by AREA or by any other relevant research and academic institutions involved in conducting farm research under which the researchers and scientists have published their intellectual production in any of the YJARS issues included in the present analysis.

The volume; rate and speed of research results may vary from one discipline to another according to the number of factors most important of which is the characteristics of researchers; the nature of the field of specialization, the management and organization of research among other factors.

In this respect, nonetheless, results of this study are partially consistent with the findings of Alsharjabi (1994) study mentioned earlier, and in which appeared only seven agricultural disciplines, while the number of disciplines identified in the present study has almost doubled though at varying proportions. This means that farm research human resources and program scope have become more diverse and multitude as compared to earlier stage. This also could be considered as an indication of the development of society as a whole alongside with the expansion of division of labor being witnessed as a sign of progress and growth.

On the other hand, results of the current study highlighted the large share of some disciplines in the total study sample such as "science socio-economics", "plant protection", "field crops", and to some extent "horticultural crop" and "natural resources" which ranked 1-5 in the same order. This result doesn't match with the findings of Alsharjabi (1994) mentioned above in this paper, which indicated that the disciplines of "crop" and "plant protection" occupied the highest rank in terms of number of articles published then in issues of journals studied. While in this study, the discipline of "science socio-economics" ranked first in terms of the proportion of materials published.

A further deeper look into these results reveals some differences between the nature and length of research period required to reach a concrete results, write up and prepare for publication. Some disciplines require less time than others. On the other hand, these findings may mean that agricultural researchers specializing in certain fields or disciplines are characterized by more active in scientific publishing as compared to their counterparts specializing in other scientific fields. Results may involve a reference signals to the research system as a whole, with respect to its inclusion of the task of research output's dissemination within the duties and responsibilities of researchers or just leave such a task to their own personal assessment and initiative; and whether or not such researcher's contribution is given a credit in the system's staff evaluation and promotion scheme.

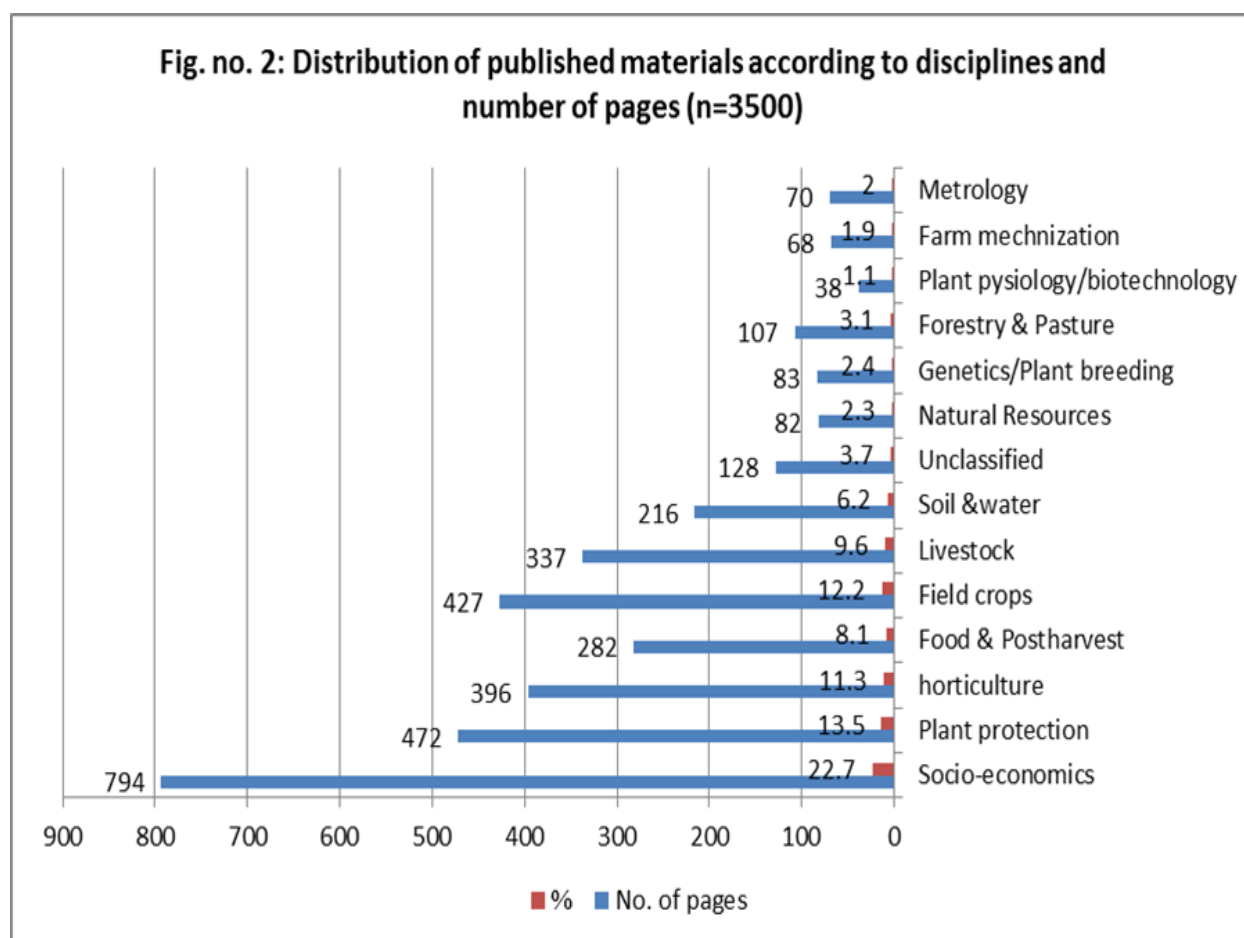
Similarly, findings of this study obtain support from the results of (Alsharjabi, 1994) in terms of the low presence of some agricultural disciplines in the published material under analysis. However, it is useful to note that the sample of that study was originally limited in terms of journals and number of materials published (It included a sample of four issues of two periodicals published during the period 88 -1990, with not more 38 articles/items only).

Additional investigation was made to the results pertaining to discipline coverage in the sample of the study in terms of space or number of pages occupied by each agricultural

disciplines. Results shown in fig. (2) are almost identical to that exhibited in table (3) with minor variation that doesn't change much of the overall picture.

Fig. (2) shows that the disciplines that have realized larger number of published articles (table 3), have also achieved greater number of pages in the whole volume of analyzed study sample and vice versa. This fact reconfirms the presence of discrepancy or imbalance representation of various agricultural disciplines as well as absence of some other disciplines in the YJARS published materials. The total number of pages of all journal issues reached 3500 pages (17x25cm) with an average of 159 pages per journal issue and an average of about 11 pages per a single article.

Based on these findings, it could be argued that the scene or structure of published materials doesn't reflect the true importance of ranked disciplines in the real situation nor the priorities or sizes of research programs, projects and activities or even the agricultural sector, and farm research policies.



(Total number of pages "n"= 3500 pages)

On the other hand, contributors to the YJARS are not totally from within AREA researchers as the journal contains from time to time some articles authored by researchers and academicians working for other Yemeni and foreign agencies and institutions. Nevertheless, AREA researchers themselves don't confine their contributions to the journal issued by their agency. Some of AREA researchers publish their research works in other scientific periodicals inside and outside the country. This was confirmed by some previous studies (Isnar, 1993 and Alsharjabi *et al.*, 1993) which stated that a number of AREA researchers have published some of their research work pieces in some Arab and Foreign scientific journals.

Similarly, Mukbel (2007) studied the "Journal of the Yemeni Agricultural Research" published by the Faculty of Nasser for Agricultural Sciences at the University of Aden. He included as a sample of his study all journal issues published for over 25 year. He stated that the materials published were contributed by researchers working for numerous agencies some of whom were researchers from different branches of AREA.

Researchers; research management and YJARS editorial board may need to re-assess the extent to which some of the disciplines require future greater presence in the published materials, in parallel to its importance to the agricultural sector, research programs, the scientific and farming community, as well as the procedure needed to realize it, on bases of certain criteria of relevance to various relating sectors, agencies and partners.

## **5. Conclusions and Suggestions:**

Since its appearance for the first time in 1994 until the end of 2010, YJARS published 22 issues, with a total of 332 published material or research articles. Although its start was embedded by some difficulties, it has witnessed more regular issuance since 2001 at an average of two issues per year with an exception in 2006. The average number of articles published was 15 articles per issue with the issue no. 2 with the lowest number of articles (8 articles) and the issue number 10 with the highest number (16 articles).

There were more than 8 categories of published materials identified in the YJARS, but the category of "Research Articles/papers" was the dominant among them. Similarly, the study identified more than 12 disciplines covered by the published materials in the YJARS, but the disciplines of "Socio-economic", "field crops", "plant protection", and "horticultural crops" were the most prevailing disciplines in terms of percentage of articles as well as space proportion or number of pages. Average number of pages per each single journal issue reaches 159 pages with an average of about 11 pages per a single article.

Based on the results of the study the researchers came to offer the following suggestions:

1. Development and implementation of a clear publication policy for the YJARS in the context of the agricultural research policies that is consistent with the national agricultural sector's strategy and other national strategies of environmental, water, developmental and rural economic development.
2. Encouraging researchers to publish outputs of their works resulting from their contribution to and their involvement in the execution of various research programs, network, and technology dissemination projects and activities.
3. Planning and execution of future in-depth bibliometric analysis studies on the published issues and materials of the YJARS to explore additional qualitative and quantitative aspects of published materials in the journal including authorships, geographical and institutional coverage, use of illustrations and the like, which were not dealt with in this study.

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