

## ABSTRACT

In this research the Mexican scientific production in the area of Agricultural Sciences is characterized, using for this, unidimensional and multidimensional bibliometric indicators of scientific activity, through these the production obtained in several databases is analyzed by a side: *Agricola*, *Agris*, *Cab Abstracts*, *Tropag & Rural*, *Science Citation Index (SCI)* and *Social Science Citation Index (SSCI)* and by the other, the production indexed only in the databases *SCI* and *SSCI*. The indicators that are used allow to characterize: The temporary evolution of the articles production of scientific journals; the national contribution by subject areas, states of Mexico, types of institutions and individual institutions; the languages in which the articles are published; the visibility of the scientific journals in which the articles are published; the collaboration between authors, the most productive authors, as well as the different collaboration patterns between institutions, at national and international level, the evolution of the collaboration during the period of study, and by thematic areas. We found that the scientific production during the period of study ascended to 15,736 journal articles, whereas the production in journals in the databases *SCI* and *SSCI* were of 5,942 articles that correspond to 37.76% of the found one in the national and international journals (all the databases used). According to *SCI* and *SSCI*, the subject areas in which more articles were published were Plant Sciences, (21,42%), Agronomy (10,55%), Entomology (9,02%), and Agriculture (7,27%), that altogether published 48,27% of articles. Both, the Federal District and the State of Mexico published more than half of articles, this shows a great concentration of the scientific research in these two states, whereas the states that less published were Tlaxcala, Hidalgo, Nayarit, Tabasco, and Campeche. The types of institutions that published more articles were the Public Universities and the Institutes or Research Centers, being the institutions that more published the National Autonomous University of Mexico, the National Institute for Forest, Agriculture and Livestock Research, the International Maize and Wheat Improvement Center, the Postgraduate College in Agricultural Sciences and the Centre for Advanced Studies and Research of the National Polytechnical Institute. The languages in which more articles of journals were published were the English (62,33%), rate that rose to 96,53% in main current journals, and the Spanish (37,89%), rate that lowered to 2,93% in main current journals. The average rate of articles signed in coauthorship was of 87,62%, same that rose 92,26 %, in the case of the main current journals. The coauthorship index in 2002 was of 4,08, almost similar to the observed one with the collected data of the main current journals (4,18). The higher coauthorship indexes were found in: Veterinary Sciences (4,22), and Food Science and Technology (3,97). The lowest coauthorship indexes were presented by: Ecology (2,87) and Zoology (2,9). The type of higher collaboration was the intrainstitutional one (average of 70,48%), followed by the International (average of 45,51%), Intrastate (average of 17,78%), and the interstate one (average of 13,22%). The collaboration that showed greater growth was the intrainstitutional one. The subject areas in which there was greater collaboration were: Food Science and Technology (97,28%), and Biotechnology and Microbiology (97,24%). The smaller collaboration was observed in: Entomology (87,13%), and Ecology (90,06%). According to the perception of the collaboration, the strongest collaborations occurred in institutions dedicated

completely to the investigation in Agricultural Sciences like the Postgraduate College in Agricultural Sciences, the National Institute for Forest, Agriculture and Livestock Research, the International Maize and Wheat Improvement Center, and the "Antonio Narro" Autonomous Agricultural University. In the collaboration between the states we perceived the formation of groups of states geographically together in several regions of the country, like the ones of the Federal District with Morelos and the State of Mexico, Querétaro with Guanajuato, Sonora with Baja California Sur and Coahuila with Nuevo León. The highest international collaboration was with the United States of America (55,55%), followed by France (8,5%), and the United Kingdom (7,15%). The countries of Center, South America and the Caribbean with which there was more collaboration were: Argentina (2,58%), and Brazil (2,38%). By thematic areas, it was with the United States the country with which Mexico collaborated the most; being the highest percentage in Zoology, Environmental Sciences, and Entomology; whereas, Applied Biotechnology and Microbiology were the subject areas in which it was less collaborated. One concludes that the bibliometric techniques assisted by statistical techniques, as the Correspondence Analysis and Multidimensional Scaling, showed to be very useful to "discover" characteristics of the Mexican scientific production in Agricultural Sciences, that by other means would not be possible to know.

### **KEYWORDS**

Mexico, scientific production, scientific productivity, scientific collaboration. coauthorship, agricultural sciences, scientific journals, databases, quantitative evaluation, research evaluation, bibliometrics, scientometrics, bibliometric indicators, bibliometric techniques, unidimensional indicators, multidimensional indicators, multivariate analysis, correspondence analysis, multidimensional scaling