One week Certificate Course on

"Skill Development for Pharmaceutical Industry"

Jointly organized by Microbiology departments of Shri. R.L.T College of Science, Akola and Shankarlal Khandelwal College, Akola and Global Institute for Self-Motivation

Date: 9/05/22-15/05/22

The Indian pharmaceutical industry is the world's 3rd largest by volume and 14th largest in terms of value. Major Segments of Pharmaceutical Industry are Generic drugs, OTC Medicines and API/Bulk Drugs, Vaccines, Contract Research & Manufacturing, Biosimilars & Biologics. India has the second-highest number of US FDA approved plants outside the US and is a global leader in the supply of DPT, BCG, and Measles vaccines. India accounts for 60% of global vaccine production, contributing 40-70% of the WHO demand for Diphtheria, Tetanus and Pertussis and Bacillus Calmette–Guérin vaccines, and 90% of the WHO demand for the measles vaccine. India is the largest provider of generic drugs globally. Access to affordable HIV treatment from India is one of the greatest success stories in medicine. India is one of the biggest suppliers of low-cost vaccines in the world. Because of the low price and high quality, Indian medicines are preferred worldwide, thereby rightly making the country the "Pharmacy of the World". Pharma sector currently contributes to around 1.72% of the country's GDP. Owing to India being a major component of the country's foreign trade, it brings with attractive avenues and opportunities for the youth.

With this increase in the global pharmaceutical industry opportunities in India, it is important to inform and prepare the rural youth about the job opportunities in the same. The Department of Microbiology of Shri. R.L.T College of Science, Akola and Shankarlal Khandelwal College, Akola and the Global Institute for Self-Motivation undertook this task and jointly organized One week Certificate Course on "Skill Development for Pharmaceutical Industry" for the students in Vidharbha region. This was a novel program initiated by the Berar General Education Society and Shikshan Prasarak Mandal, Akola. The mode of the workshop was both offline and online for the comfort of the participants.

The inauguration ceremony of the workshop was conducted in the Auditorium of Shri. R.L.T College of Science, Akola. Adv. M.G Mohta (President, The B.G.E. Society, Akola) was the inaugurator of the workshop. The dais was graced by Mr. P.N Maheshwari (Hon. Secretory, The B.G.E Society, Akola), Prof. R.D. Chaware (Vice-president, Shikshan Prasarak Mandal, Akola), Shri. A.Y. Kulkarni (Vice-president and Treasurer, Shikshan Prasarak Mandal, Akola), Dr. V.D. Nanoty (Principal, Shri. R.L.T College of Science, Akola), Dr. J.M. Saboo (Principal, Shankarlal Khandelwal College, Akola), Dr. R.L. Rahatgaonkar (IQAC coordinator, Shri. R.L.T College of Science, Akola), Dr. A.R. Deshpande (Head, Department of Microbiology, Shankarlal Khandelwal College, Akola), and the Resource person of the event Dr. Anil Fokmare (Director, Global Institute for Self-Motivation).

The participants came from various colleges in Vidharbha region including Shri. R.L.T College of Science, Akola, Shankarlal Khandelwal College, Akola, Shri. Shivaji College of Science, Arts, Commerce, Akola, and Shri. D.M. Burungule Science and Arts College, Shegaon. About 143 participants were involved in the workshop.

The inaugural ceremony was followed by the first day of the offline course. In the first session, Dr. Anil Fokmare introduced the students to basics of pharma industry, working and daily protocols of operations followed in the pharma industry. His interactive session also covered the importance of Good Manufacturing Practices (GMP) and the methods to maintain GMP standards in the industry. He made the students aware of the standard operating procedures that enable smooth and accurate functioning in industries. Through his presentation, he showed various areas in a working pharma laboratory and the do's and don'ts in these areas. He explained how simple habits can lead to maintenance of the GMP protocol and save the products and batches from contamination and spoilage.

The workshop also focused on the instruments and equipment quantification in pharma industry with respect to the design, installation, operating, and performance. It also included the certification and training details in pharmaceutical labs. The participants learnt about the role of microbiology laboratory in pharmaceutical research sector along with its key components like sterilization, safety measures, and machines. Good laboratory practices (GLP) are an important part of any laboratory. Similarly, GLP are followed in pharma industries to ensure that the products are accurate. Dr. Anil Fokmare educated the students regarding the various methods of GLP and the importance of following GLP protocols.

In the second session, the workshop was graced by Shri. V. Ranganathan, Ex-chief secretory of Maharashtra state. He is a retired civil servant from the IAS cadre with decades of distinguished service at senior level in state and central government. He currently devotes his time to social organizations and advises a prestigious trust and co ordinates its activities. He encouraged the students to attend such workshops and emphasized on the need to make the students ready to face the corporate world. He also congratulated the associated colleges, staff and students for organizing the workshop. Dr. Anil Fokmare concluded the session with feedbacks from the participants. The participants expressed that the 7-hour workshop was interactive and valuable in terms of learning.

The second day of the offline workshop was conducted in the Auditorium of Shri. R.L.T College of Science, Akola. The participants were exposed to various opportunities in pharmaceutical industries and the ways they can apply for specific positions. They also learnt about the career opportunities associated with pharma sector including clinical data management, analytical and green chemistry, regulatory affairs, consultation, sales representative, and others. Not only this, they were also informed about the certification and experience required for these jobs and the companies that hire freshers for work. The resource person also emphasized that candidates from all fields of life science and chemical science are employed and trained according to their requirements and area of expertise.

The participants were given a general idea about the instruments by visiting the laboratories of the college. This included microbiology, biochemistry, and chemistry labs. The session was progressed by exhibiting the techniques used in a microbiology lab which included basic tests for calibration, enumeration, and sensitivity and advanced tests like PCR and chromatography. During the lab visit, the participants were demonstrated the protocol of dressing and the importance of wearing the required attire which included cap, gown, shoe covers, and hand gloves. The hazards and problems associated with not following these protocols were also discussed. The laminar air flow containing HEPA filters were also shown and the importance of having an aseptic condition in microbiology was discussed. The other instruments were autoclave, hot air oven, incubator, ultrasonicate, pH meter, colorimeter, spectrophotometer, and other glassware.

After the instrumentation session, the participants were exposed to the techniques used in microbial identification. This included various media used in the lab along with other conditions that need to be maintained in order to promote the growth of microbes.

The day was concluded by a mock drill of the SOPs followed in a microbiology lab in pharma and the students actively participated in it.

The third day of the workshop was conducted in the Bhausaheb Godbole Sabhagruh of Shankarlal Khandelwal College, Akola). The president of the event was Shri. Gopalji Khandelwal (Secretory, Shikshan Prasarak Mandal, Akola) and the guests of honor were Adv. M.G. Mohta (President, The B.G.E. Society, Akola), Shri. P.N Maheshwari (Hon. Secretory, The B.G.E Society, Akola), Shri. A.Y. Kulkarni (Vice-president and Treasurer, Shikshan Prasarak Mandal, Akola), Dr. Anil Fokmare (Director, Global Institute for Self-Motivation), Dr. V.D. Nanoty (Principal, Shri. R.L.T College of Science, Akola), and Dr. J.M. Saboo (Principal, Shankarlal Khandelwal College, Akola).

The first session was started with feedbacks from the participants about the overall workshop of the initial two days. The participants expressed pleasure and gratitude that both the societies and colleges conducted such an informative workshop. Most students accepted that they were worried that a 7-hour workshop every day would be monotonous and involve lots of reading and self-study, but they were happy that the course was informative, wellstructured, engaging, and easy to understand. Many participants appreciated Dr. Anil Fokmare for being very enthusiastic and keeping them captivated with his activities. They also shared that the assignments and projects given to them were benefitting and promoted deeper understanding of the subject.

The highlight of this day was a 'Book launching event' of 3 Practical handbooks—i) Applied microbiology and biotechnology, ii) Environmental microbiology and biodiversity, and iii) Immunology and medical microbiology. These books have been authored and edited by the microbiology teachers of Sant Gadge Baba Amravati University, Amravati and published by My Rays Book Publication Center founded by Mr. Rajesh Dhakane and powered by International journal of microbial science.

The workshop was continued after the feedback session and book launch event. This day of the workshop focused on Good Documentation Practices (GDP) in pharma sector. Dr. Fokmare explained that to ensure smooth functioning of any industry, it is important to follow the guidelines mentioned for the documentation of every action. Documentation is an authenticated proof for GMP compliance and is a crucial part of the quality assurance system. Before documenting, the processes are validated, instruments are calibrated, staff is trained to maintain protocols, and SOPs are established. The documentation is examined during routine and annual audits and any problems in the documentation could lead to termination of the batch of products or cancelation of licenses. These were discussed in the workshop.

The workshop ended with a mock interview session to build confidence in the participants. The students were interviewed and were provided constructive feedbacks on their performance. They were also conveyed if they would be selected or not on the basis of the interview. The day was filled with hands on training and interview demonstration and the participants benefitted form it. The last 3 days of the workshop was conducted online using the Google Meet platform. The participants were asked to keep the camera on to ensure complete attention. These days emphasized on providing the students with information regarding the process of GDP and GMP compliance and the systems of auditing. Dr. Fokmare focused on the importance of document compliance and errors that occur during the same. He explained how 'root cause analysis' is done after finding the errors. The 'corrective action preventive plan' was also discussed by giving some examples from the industry. The Code of federal regulation (CFR) was explained along with its standards. Data integrity is simply the maintenance, assurance, accuracy and consistency of data and is of utmost importance. It can lead to many repercussions if not dealt with care. It aims to prevent any unwanted and unintended changes to information.

The one-week workshop was successfully conducted by the combined efforts of all participants, resource person, teaching and non-teaching staff of Shri. R.L.T College of Science and Shankarlal Khandelwal College, Akola, and the Berar General Education Society and Shikshan Prasarak Mandal, Akola.















Participants, resource person, and staff members at the workshop at Shri. R.L.T College of Science, Akola

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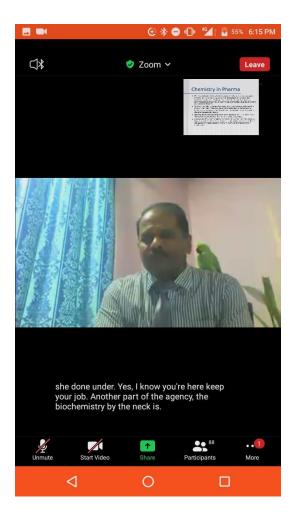
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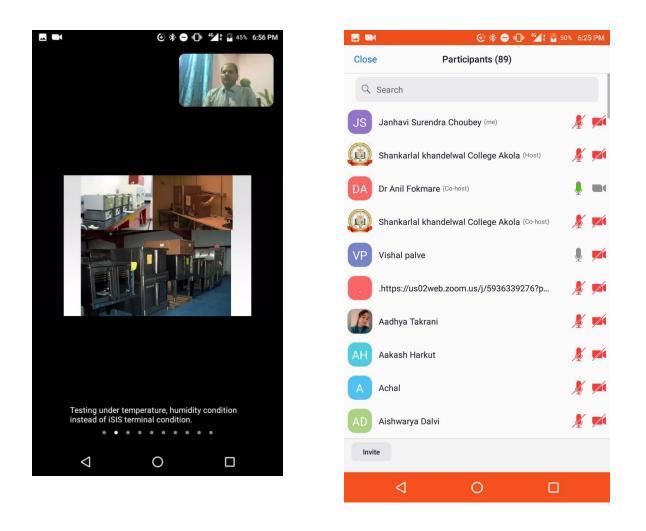
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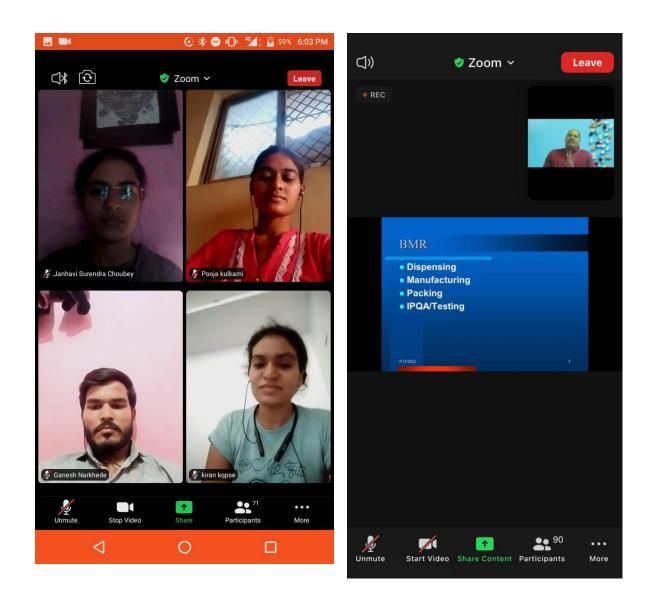
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Photo: Attendance of participants from various colleges









Dr. Harish S. Malpani Asst. Professor & Head Department of Microbiology & Biochemistry