

RESEARCH PRIORITIES FOR COFFEE IN THE NEW MILLENIUM

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Coffee industry of the World has many distinct features. The production is mainly concentrated in about 50 under developed and developing countries, while consumption is mostly by the developed countries like USA, Japan and the EU nations. World over coffee is basically a small growers crop with nearly 20 million people engaged in production. The producing countries except Brazil have very poor domestic market for coffee and rely heavily on exports for sustaining their economies.

For many decades, the World coffee market was well protected through a quota system between producing and consuming countries operated by the International Coffee Agreement. But the industry witnessed tumultuous changes during last one-decade with the collapse of International Agreement in 1989, liberalization of economies in many producing countries and emergence of new production centres leading to surplus supplies. For the past one year the prices of coffee have been tumbling rapidly, and at present the prices are at lowest level since 20 years. Owing to this situation the growers and economies of many coffee producing countries are severely hit by the recession.

In many producing countries, the research support for production is barely adequate because of their poor economic status. It is only in few countries like Brazil, Colombia, India, Kenya and Indonesia, the coffee research is being pursued on continuous basis. Even in these countries, the coffee research is constrained by perennial nature of the crop; non-availability of expertise in basic/fundamental research and poor infrastructure facilities for undertaking advanced research. On the other hand, the major consuming countries with their advanced research facilities and expertise are coming out with new findings on quality and health related aspects and are insisting on the producing countries to supply the coffees of their choice. This wide gap in research between the production stage to the consuming stage, is likely to hit the producing countries very badly in the coming years, unless the producing countries reorient their research priorities and approaches to meet the new challenges under WTO regime.

Cost reduction, sustainability and quality improvement are going to be the major priorities in coffee research. The approaches towards these objectives can be outlined as below.

Cost reduction: The cost of production of coffee is escalating steadily in almost all the producing countries mainly due to increasing labour wages, decreased efficiency, yield plateau of existing varieties and increased cost towards pest and disease control. Reduction in cost of production is possible only with increased productivity levels. Introduction of new high yielding, resistant varieties would go a long way in increasing the productivity of coffee. The conventional plant breeding programmes are time consuming and are constrained by difficulties in crossing the distant species owing to genetic barriers. For eg. evolving an arabica coffee with durable resistance has remained elusive despite many decades of conventional breeding, because it is practically difficult to assemble all the desirable s^H factors in one variety. Complementing of conventional breeding programmes with marker assisted molecular approaches would be an ideal way for development of super hybrids/ varieties with high yield potential and resistance to pests & diseases.

Sustainability: In recent years much is heard about sustainability in coffee linked with environment protection and health friendly product. This would mean additional investments on the part of poor coffee growers, especially in terms of ecofriendly pest management and pollution control measures in plantations. The research in integrated approaches towards crop nutrition, pest and disease management, low cost effluent treatment etc. needs to be strengthened in order to develop sound sustainable farming systems. Also, research on mixed cropping and diversification in coffee plantations would be of great significance for augmenting the farm income of small growers. Mixed cropping with compatible crops like pepper, orange, vanilla and diversification with sericulture, apiculture and dairying have been successfully adopted in coffee in India.

Quality improvement: Quality of coffee has assumed importance in the present oversupply situation. The quality requirements in coffee are both voluntary as well as mandatory. The Sanitary and Phytosanitary measures under the WTO Agreement on Agriculture would come under mandatory category. Thus, there is an urgent need to develop database on the extent of contamination of coffee with mycotoxins, pesticide residues and heavy metals etc., evolve methods for effective management of these contaminants and educate the growers and processors on these vital issues.

Besides these, the consumers in most of the developed countries are preferring specialty coffees identified with distinct cup qualities or distinct production methods like organic coffee, bird friendly coffee, eco-coffee and Fair Trade coffee et. The market share for specialty coffees is increasing at a steady

rate and it is estimated that it would reach 10% of global market by next few years. Specialty coffees are good opportunity for the growers as they fetch premiums and assured customers especially in the over supply situation. But unfortunately, in many countries the technology support for production and processing of such specialty coffee is rather limited. Thus, standardization of an integrated package for production and processing of specialty coffees is also an immediate priority.

Conclusion:

Hitherto coffee research has been done in isolation by different countries. Within the country itself the Coffee Research Institutes often maintained isolation from mainstream basic research. On the other hand the consuming countries have strong research base advanced areas like molecular techniques, quality evaluation, biological control etc. There is a strong felt need to integrate the research in producing and consuming countries for overall benefit of the coffee industry. The producing countries should adopt an open policy and freely exchange germplasm and forge collaborations with other countries for exchange of technical expertise and information. Common problems like coffee leaf rust, coffee berry borer, coffee berry disease and effluent disposal etc. needs to be addressed through multi-country collaborative research programmes. Likewise, transfer of technology through electronic media and farmers participatory method is the need of the hour to disseminate the research findings quickly in an effective manner. This approach alone would protect the interests of coffee producing countries in the present day liberalized, highly competitive global scenario.
