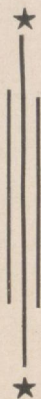
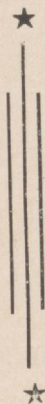


INDIAN AGRICULTURAL RESEARCH INSTITUTE



CONVOCATION-1966



INVOCATION

शुनं नः फाला वि कृपन्तु भूमिं
शुनं कीनाशा अभियन्तु वाहैः ॥
शुनं पर्जन्यो मभुना पयोभिः
शुनासीरा शुनमस्मासु धत्तम् ॥

विज्ञानं ब्रह्ममति व्यजानात् ।
वित्रानाद्ब्रूयेव खल्विमानि भूतानि जायन्ते ।
विज्ञानेन जातानि जीवन्ति ।
विज्ञानं प्रयन्त्यभिसंविशन्ति ॥

विज्ञानं यज्ञं तनुते । कर्माणि तनुतेऽपि च ।
विज्ञानं देवाः सर्वे । ब्रह्मज्येष्ठमुपासते ॥
तस्माच्चेन्न प्रमाद्यति ।
शरीरे पाप्मनो हित्वन्स का ।र्वामान्समश्नुते ॥

अक्षेत्रवित क्षेत्रविदं ह्यप्राट् ।
सप्रैति क्षेत्रविदानुशिष्टः
एतद्वै भद्रं अनुशासनस्य ।
उत त्नुति विन्दत्यञ्जसीनाम् ।

ऊं सह नाववतु । सह नौ भुनक्तु ।
सह वीर्यं कारवावहै ।
तेजस्विनावधीतमस्तु । मा विद्विषावहै ।
॥ ऊं शांतिः शांतिः शांतिः ॥

**THE NATIONAL RICE WEEK
AT
THE INDIAN AGRICULTURAL
RESEARCH INSTITUTE,
NEW DELHI
ON 17th December, 1966**

ADDRESS
by
C. SUBRAMANIAM

Friends,

I am sorry that due to ill-health, our respected President who had graciously consented to inaugurate the National Rice Week, is unable to be with us today. In his message to the International Rice Year Volume of "Indian Farming", the President had pleaded for determined efforts to complete successfully the task of bringing about a transformation in our agriculture and in achieving national self-sufficiency in food grains. I am sure you would like me to convey to him our prayers for his speedy recovery and our assurance that we will do our best to achieve the desired aims on the food front.

Although agriculture is man's earliest scientific triumph and provided the impetus for much international travel and contact, organised effort on a global scale for the exchange of scientific ideas and material for promoting agricultural production has not been as intensive as in the physical sciences. We have had projects like the International Geo-physical Year but this is the first time that an international programme of intensive efforts for studies on a specific crop plant has been initiated. Rice being the principal food crop of most developing nations, it is appropriate that the FAO chose it for special attention during 1966. During this International Rice Year we had the privilege of discussing our rice production problems with the members of the International Rice Commission. We have initiated during this year a series of activities, all designed for the rapid transfer of scientific inputs and know-how from the laboratories to the farm. Rice is particularly suitable for striving for a striking change in productivity, because

of the availability of adequate water in most of the rice growing areas. Hence, in any programme aiming at a rapid stepping up of production, rice ought to occupy pride of place, not only by virtue of the acreage it occupies but also because of the immense possibilities it offers for the manipulation of yield in a favourable direction. The Government of India, therefore, welcomed whole-heartedly the proposal of FAO for initiating during this year a programme of concentrated attention and concerted efforts for the improvement not only the yield of the rice crop in the field but also the facilities for storage, processing and milling.

It may be useful to underline on an occasion like this the new opportunities now open for improving production in a striking manner within a year or two. The Indica rice-growing regions in which the rice plant originally arose have always been considered to be incapable of producing high rice yields. The Japonica regions and varieties in contrast, were regarded as full of high yield potential. This earlier concept has now been disproved - thanks to the work of rice scientists in Taiwan and the International Rice Research Institute in the Philippines - who by developing dwarf, stiff-strawed, non-lodging, erect-leaf, photo-insensitive and short-duration varieties have shown that Indica varieties and Indica regions can not only produce the same amount of yield as the Japonica regions but even more. The additional advantage of the Indica areas is the more abundant sun-light which is so vital for food production by green plants. I am very happy that Dr. R. F. Chandler, Director of the International Rice Research Institute, who has played a major role in spreading this message of hope and optimism in the countries growing indica rices is with us to-day and that we have this opportunity to

express to him and through him to his colleagues, our deep gratitude and appreciation for their great contributions to rice production.

Although the rice crop occupies a substantial part of our cultivated area, the yields are still low. Even then the present crop is worth nearly four thousand crores of rupees per year, an index of the importance of this crop in our economy as a whole. India is probably the centre of origin of rice and since ancient times, rice culture has been developed into a highly skilled profession. The plant grows from the Himalayas to the Cape Comorin under diverse conditions of climate, soil and cultivation techniques. No other crop is as versatile and as highly adaptable to diverse growing conditions as the rice plant. It grows in dry areas as well as under deep water conditions, in saline soils as well as acidic ones, and in high altitudes as well as in the plains. Every part of the plant is valuable and it is hence that rice occupies such an important status in all functions in India, whether happy or mournful. The farmers of the Vedic age developed the technique of growing rice under puddled conditions as a means of fighting the vagaries of the weather as well as the menace of weeds. The technology of rice cultivation, however, has remained stagnant and has not been altered to suit the possibilities now available for controlling the nutrition and water requirements of the plant. Modern agricultural technology has enabled us to make the plant practically independent of seasons and all other natural factors. The new varieties can be grown at any time of the year provided there is water.

Rice is a crop where we can bring about a dramatic increase in production immediately, since a large proportion of the rice area has reasonable water supply. Therefore, 1966 is an appropriate year

to focus our attention on the problems and possibilities of rice production. We have now the technology to increase rice production by at least an additional ten million tonnes during 1967, if we have the determination to strive for such an increase and have the necessary quantities of fertilizers. Seeds of high yielding varieties would be available next year to cover the entire rice growing area, if we so desire. The area proposed to be covered next year under the high-yielding varieties programme is about 7 lakh hectares. The farmers, however, should try to exceed these conservative targets, because we do not have the time to go slow on the food front.

Now that it is known that by growing dwarf rice varieties along with suitable manurial, irrigation and plant protection practices we can get as high as 6 to 8 tonnes per hectare in one crop in our country, we can proceed with confidence in aiming at doubling our rice production within the next few years. The rapid Seed Multiplication Programme developed in the case of Taichung Native-I whereby seeds for nearly 250,000 hectares were produced in 1966 from the few kilograms of seeds available in 1965, is an index of what we can achieve if we have the will and if we deploy the requisite resources and efforts. I am confident that if the steps we have now initiated are carried forward to their logical conclusion, India could soon become an important rice-exporting nation. It may seem rather ironical to make this remark now, but we have seen similar situations in the past. Sugar-cane is an example where India was a sugar-importing nation until the time the late Dr. T. S. Venkataraman of the Coimbatore Station of the Indian Agricultural Research Institute developed the famous 'Co-canes'. The development of high-yielding varieties and hybrids in our major cereal and millet crops have

opened up similar opportunities in the important food plants.

All our efforts at increasing production on the farms would be futile if we do not simultaneously improve the conditions of storage, milling and utilisation. This is why we have paid considerable attention to the rice milling industries during the last two years. The Food Corporation of India has launched upon a programme of establishing 300 modern rice mills of the capacity of 2 tonnes per hour and 75 units of the capacity of 4 tonnes per hour. In addition, about a thousand of the existing rice mills would be modernised by installing new equipment such as paddy cleaners, shellers and polishers. If farmers, business-men, extension workers and scientists would all bend their energies to making improvements in all aspects of rice production and consumption, we can really make very speedy and remarkable progress.

Thanks to the foresight of the late Shri Jawaharlal Nehru, an era of planned development was initiated in India in 1951. The agricultural development programmes initiated during the last 15 years have contributed towards an appreciable increase in food production. The minimum production of food grains was 55.5 million tonnes and the maximum 72.2 million tonnes during the first Plan period with an average of 65.8 million tonnes. In the Second Plan, the minimum stood at 66.5 million tonnes rising to 82.0 with an average of 75.3 million tonnes. During the Third Plan period, the minimum stood at 72.3 with a maximum of 88.4 and an average of 80.4 million tonnes. Besides this increase in food output, the production of other economically important plants like jute, cotton and sugarcane have also risen appreciably. Nevertheless, the

steady rise in the imports of foodgrains during the past 15 years indicates that while progress has been made, the rate of growth in food production has not been adequate to meet the increased demand arising partly from the growth in population and partly from a rise in consumption levels and alterations in food habits caused by a general increase in the standard of living of our people. The fact that our food problem is in part a consequence of the rise in national income tends to be often overlooked. Whatever the reasons are, it is imperative that serious efforts are made for transforming the present scarcity conditions into one of adequate food availability.

Science has shown that the production potential of Indian agriculture is enormous. At the Indian Agricultural Research Institute more than ten tonnes of food grains are being produced per hectare per year from the same land using techniques which are within the reach of an average farmer. We have abundant sun-light which is a primary requisite for crop growth. Our water resources, although over-shadowed by the drought of this year and the last, are quite considerable. There is hence no scope or need for gloom in facing our food problem. It is, however, obvious that any problem which is not faced squarely and solved expeditiously would continue to face us. Therefore, agricultural programmes should not only be given very high priority in the spoken and written words but should also really receive the first priority in action and implementation. There is much that can be done with our existing resources and it is on this possibility that Mahatma Gandhi laid stress in all his plans for rural reconstruction. Clean and careful work, either in the farm or home or office, does not cost anything additional but makes a large difference in the end result.

An efficient plant, like an effective human being, needs to have an integrated personality. Only when all the aspects of a plant are in balanced harmony, will it be able to perform well under good conditions of cultivation. Minds which cannot comprehend the purpose and philosophy underlying the unity and diversity of living forms cannot really cope up with problems of agriculture. We have lost much time in harnessing science and technology for increasing the production of crops and farm animals because of the low stress and support we have given to agricultural research. The rest of the world has taken rapid strides, so that whenever the average yields of crop plants or milk production by cows or egg production by poultry are compared country-wise, we occupy an un-enviable place. We are today paying the price of years of inadequate attention to agriculture, which ought to have become by now our primary industry. But for our average rice yield being as low as 1.1 tonne per hectare, the drought and floods of this year which affected only about 2 million hectares out of over 60 million sown to crop plants, should not pose such a threat even to the very survival of many of our countrymen. In a country of our dimension, floods or drought may occur in one part of the country or the other every year. It would hence be unrealistic and short sighted if we do not base our plans for increasing production, providing always a margin for unfavourable seasons.

Because of the rich diversity of growing conditions in our country, we have such a wide variety of crops seldom seen in one country. For getting the best out of this endowment, it is essential that we grow each plant in an area where it would grow best. If Kerala grows plantation crops, the country benefits by earning foreign exchange. On the other hand, if Andhra

Pradesh or Orissa or Madras is most suitable for producing rice production we should concentrate our efforts on increasing rice production in that area. But it is obvious that in order to take advantage of these natural factors, there must be a strong sense of unity of purpose and willingness for mutual sharing of produce within the country. Otherwise, all the advantages which could accrue to us through our being blessed with such enormous agricultural potential would be lost. It is for the purpose of developing this unity in outlook and action resulting in a national food budget that organisations like the Food Corporation of India and the Price Commission have been set up. Any organisation, however sound it may be conceptually, can never deliver the goods unless all concerned cooperate fully.

The explosion of scientific knowledge which has taken place in recent years holds out both great promise to the future of man-kind as well as great threats to human survival. Realising that only science can help to convert natural resources into economic wealth, the late Shri Jawaharlal Nehru made science as the base for the building of a new India. We see from the rapid increase in the average life of our people how potent the tools of modern science are. The application of science in the fields of public health and preventive medicine has enabled us to almost double the average life of an Indian within a span of 20 years. However, a single track approach in the application of science for social welfare would retard rather than promote progress. This is again clear from our present situation where science has helped in reducing death rate in a dramatic manner. The lack of application of science to food production has in contrast led to our present food problem. In human affairs every action has a reaction and in

formulating national policies and development programmes the possible reactions on the economy as a whole of the action which we propose to initiate in an individual area of development should be carefully considered.

Even the meagre efforts made since the beginning of this century to apply science to agriculture did not bear the fruits they ought to have for the reason that most of these efforts tended to be carried out in isolation. We have a few agricultural colleges and many small research stations located all over the country but these tended to work largely independent of each other and did not have either the requisite facilities or capable scientists who could help in opening new vistas in crop production. A few occasionally great scientists like those who worked in sugarcane or rice did have an impact but their number was too few in relation to the magnitude of our problems. Even after independence, the research work carried out with funds from the Central Government was fragmented under diverse organisations like the Ministry of Agriculture, the Indian Council of Agricultural Research, the Commodity Committees, Agricultural Universities and the Research Institutes of State Governments. Separate institutes were started for some of the major crops but it was soon found that inbreeding of thought is as harmful in scientific work as in living organisms. It is to remedy this situation that last year the Government of India decided to reorganise the Indian Council of Agricultural Research and develop it into an organisation which would provide scientific leadership and administrative coherence to all the institutions which were formerly under diverse control. It is the purpose of the reorganisation of the Indian Council of Agricultural Research to bring together scientists working

in different locations into a joint team, all striving for a common cause. Such an intensive and unified endeavour is urgently necessary at the present time, when our farmers are willing and wanting to discard old practices and take to a new agriculture involving the cultivation of high yielding varieties along with suitable fertilizer and water management practices. Research is neither essential nor effective under primitive conditions of agriculture but is a must for initiating and sustaining progressive farming. Hence, increased agricultural productivity can be built only on a sound research base. With the spread of fertilizers and water new problems relating to diseases and pests, soil fertility and plant type would arise. We should anticipate these problems and have solutions ready as and when they crop up. This is a challenging task and the extent of success we achieve would depend upon the extent to which we are able to attract good scientists and adequate support for work in this field. Our achievements in the field of atomic energy provide ample evidence of the competence and capability of Indian scientists and technologists. Given the necessary quantum of financial, political, administrative and public support there is no doubt that we can do the same in the field of agriculture. A heavy responsibility, therefore, rests upon those who have been charged with the task of providing leadership to the reorganised ICAR. Our ability to sustain increased production over a long period of time would largely depend upon the degree to which they rise upto this challenge.

While science and technology can help to provide the basic building-blocks necessary for increasing agricultural productivity, real progress in agriculture will come only if there is a complete change in the outlook not only of the farmer but the society as a

whole. All talk of priority in the allocation of resources without a real change in our approach and outlook towards agriculture will not be rewarding. Unfortunately, interest in agriculture wanes as soon as the food position becomes comfortable. Agriculture is given a very low priority by parents when they choose careers for their children. In so complicated a science as agriculture, requiring for striking accomplishments a consortium of skills and talents, it is not possible to make much progress if only second and third rate brains enter the field. It is a common sight in the rural areas today for only the older generation to be involved in agricultural operations. The young boys and girls prefer to lead an easy and many times even a miserable life in the cities rather than tend farms. This is because of the generally low level of prestige and social recognition attached to agriculture. An obscure hypothesis in, say, astronomy receives public recognition and approbation, while great contributions in the field of food production remain unhonoured and unsung. Our newspapers take interest in the discoveries made abroad but seldom report the remarkable work now being done in our research laboratories which is of such significance to the present and the future of our country. Reporting on the social and technological revolution now taking place in our farms has not unfortunately received the attention it deserves. If only we take adequate interest, we have now the ingredients to convert agriculture into our primary industry in a short time. It is hence that I am particularly happy that on this occasion we are honouring some of the leading farmers and scientists who have become path-breakers in the agricultural prosperity of the new India we are striving to create.

I am glad that in addition to rice scientists and farmers, those who have made outstanding contri-

butions towards increasing jowar and sugarcane production are also being honoured today. This is in keeping with our desire to view all these crops as parts of a balanced and remunerative rotation, rather than in isolation. Hybrid jowar can be cultivated widely in paddy fallows. Several farmers in Andhra Pradesh and Madras have harvested 5 tonnes of jowar per hectare in crops raised in January-February after the harvest of paddy. It is extremely gratifying that private growers like the Coimbatore Seeds Corporation have come forward to express their appreciation of the contributions made by our scientists. This is a very encouraging sign and is a real index of the value of recent scientific research as well as the beginning in our country of a sound seed industry. Our agricultural scientists are still poorly paid in contrast to those working in less important fields and I do not think that in any other field of scientific activity there is such a wide disparity between what one gives and what he is given in return. We are hence particularly grateful to the private farmers and seed growers who have taken the initiative in expressing to agricultural scientists the gratitude of the society.

I congratulate both my farmer and scientist friends whose work is being recognised today. While doing so, I need hardly stress the fact that we equally appreciate and honour the dedicated work and contributions of numerous others who have been engaged in our research, training, extension, development and technological programmes. For the wheel of progress to move effectively all links in the chain should be equally efficient. Looking back, during this year we can lay claim to certain major achievements in the science and technology of rice production. First, we initiated the All-India Co-ordinated Rice Improvement Project and the effectiveness of this team approach

involving cooperation among scientists working at different locations and in different disciplines, is clear from the fact that within a year, we were able to test extensively the new rice variety IR-8 and accumulate data sufficient to enable the Central Variety Release Committee to approve the release of this high yielding strain developed at the International Rice Research Institute. This variety has yielded in many parts of the country about 25 per cent more than Taichung Native-I, which itself yields about 100 per cent more than our earlier tall varieties. This provides a glimpse of the pace of progress now possible in enhancing yield.

Secondly, we have stepped up the production and supply of inputs. Seed production which according to the past surveys of Planning Commission could somehow never get on its feet during the first Three Plan periods and was our major weakness, is now our major triumph. Seed is no longer a limiting factor and as I mentioned earlier, we have now developed a machinery by which large quantities of high quality seeds can be produced very rapidly. Similarly, the production of plant protection chemicals has been stepped up and the Hindustan Antibiotics Factory at Pimpri now takes care of not only the illnesses of man but also of rice.

Thirdly, we have made a new break-through through the national demonstration programme in the rapid transfer of scientific know-how both to farmers and extension men. In the national demonstration organised by the IARI in the fields of Shri Daryo Singh of the Nangal Takaran village in the Delhi State, 8.7 tonnes of grain per hectare were harvested with the new variety IR-8. If you visit this village and see the barren and patchy fields rendered practically unfit

for crop growth by salinity and high water table, you can appreciate the significance of the achievement of this small farmer who has shown clearly what an integrated application of know-how, inputs and hard work can do to revolutionise crop production even under the most adverse conditions.

Finally, we have set in motion a process of modernisation of rice mills and storage houses, thereby plugging all avoidable losses after the grain is harvested.

On behalf of the Government of India, I wish to express our deep appreciation to Dr. K. Ramiah, Chairman, Dr. M. S. Swaminathan, Convenor and the other members of the Indian National Committee for the International Rice Year for the trouble they have taken to ensure the success of the programme. 1966 will come to an end shortly but this does not mean that the intensive efforts initiated as a part of our International Rice Year Programme should either come to an end or get slackened. The year should only be regarded as the beginning of an era of intensive activity in stepping up rice production. It is only to remind ourselves of this fact, that we decided to organise the National Rice Week at the end rather than at the beginning of the year. Let us rededicate ourselves today to the task of producing more and better rice.

Thank you,

DECEMBER 17: 1966

Inauguration of the National Rice Week

PROGRAMME

1. Prayer
2. Welcome : Shri B. Sivaraman.
3. Inauguration of the National Rice Week : Shri C. Subramaniam.
4. Presentation of Awards:
 - i) Rice Scientists
Dr. N. Ramiah.
Dr. R.F. Chandler.
Shri V. Srinivasan.
Dr. S.K. Roy.
Citations to be read by: Sh.K.P.A. Menon.
 - ii) Krishi Pandits
Citations to be read by: Sh.D.V.Reddy.
 - iii) Winners of Sugarcane Crop Competitions ;
Citations to be read by: Sh.K.S.Subba Rao.
 - iv) Hybrid Jowar Awards:
Citations to be read by: Sh.K.P.A. Menon.
 - a) Sh. N. Ganga Prasada Rao.
 - b) Director-General, I.C.A.R.
 - c) Field Director, The Rockefeller Foundation.
 - d) Director, I.A.R.I.
 - e) Dean, Agricultural College & Research Institute, Coimbatore.
 - f) Head, IARI Regional Research Centre, Coimbatore.
5. Vote of Thanks : Dr. B.P. Pal.
6. National Anthem

Presentation of 'Shri C. Subramaniam Award' of an Escort-s 37 Tractor.
Visit to the Exhibition and Demonstrations.

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ESTIMATES OF WHEAT PRODUCTION IN INDIA
from 1951-52 to 1965-66 and 1967-68(Advance)

<u>Year</u>	<u>Production</u> <u>(' 000 tonnes)</u>
1951-52	6,343
1952-53	7,613
1953-54	8,106
1954-55	9,146
1955-56	8,869
1956-57	9,504
1957-58	8,005
1958-59	9,957
1959-60	10,322
1960-61	10,997
1961-62	12,072
1962-63	10,776
1963-64	9,853
1964-65X	12,290
1965-66X	10,424
1967-68	Final Estimates of Wheat for 1967-68 have not yet become available but the production is expected to exceed 16 million tonnes.

X :- Partially Revised estimates.

IMPORTS OF WHEAT ON GOVERNMENT ACCOUNT

	(Thousand tonnes)
1951	3019
1952	2498
1953	1638
1954	200
1955	442
1956	1113
1957	2898
1958	2716
1959	3553
1960	4386
1961	3092
1962	3250
1963	4073
1964	5621
1965	6583
1966	7784
1967	6348
1968 X (Estimated)	6600

X Source Department of Food - Policy III Section.

Area under High Yielding Varieties of Wheat

Million Acres

1966-67

1.34

1967-68

7.25 (anticipated achievement)