Bangladesh Rice J. 2(1&2): 1-7, 1991

PATH COEFFICIENT ANALYSIS OF SEVEN CHARACTERS IN COLD-TOLERANT RICE (Oryza sativa L.)

Md. Enamul Haque, A. Baset, Z. Zeenat and N. M. Miah*

ABSTRACT

Phenotypic and genotypic Correlations and path coefficients were studied in seven characters including yield per plant for two indica and one japonica rice groups. In most of the cases, genotypic associations were higher than the phenotypic associations. Yield per plant was found highly and positively associated with plant height, growth duration and fertile grain per panicle. Modern varieties/lines had negative association between yield and panicle per plant. The traditional group showed no association except yield and 1000-grain weight showed negative relation. In path coefficient analysis, direct effects on yield were high for plant height, growth duration and fertile grain per panicle. The direct effects as well as correlation coefficients between 1000-grain weight and yield were negative for traditional varieties. Improvement of yield could be effective by direct selection for plant height, growth duration and fertile grain per panicle for modern and japonica groups and decreasing 1000-grain weight for traditional varieties. Direct effects did not fit always with the association because of the influence of indirect causal factors like panicle per plant. In such situations, causal factors should also be considered during selection.

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Bangladesh Rice j. 2(1&2): 8-10, 1991

INHERITANCE OF STEM ELONGATION ABILITY IN RICE

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ABSTRACT

The inheritance of stern elongation ability in four crosses of semi-dwarf rice was studied. Segregation analyses indicated the dominance of the stem-elongating gene (s) over the non-elongating gene (s), and that at least two genes were responsible for the expression of the stem-elongating feature which were epistatic in nature. The distribution of F_2 populations suggested multigenic control of stem elongation ability.

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Bangladesh Rice j. 2(1&2): 11-16, 1991

VARIETAL RESPONSES Of RICE TO MOISTURE STRESS

MS. Islam, M. Z. Haque and J. K. Biswas*

ABSTRACT

Water stress tolerance of several rice varities/breeding lines were tested. The ability of root penetration through high bulk density soil varied widely among the varieties/ lines and depended on the number of thick roots. The extent of reduction in plant drymatter due to water stress varied widely among the varieties/lines. Polyethylene, glycol ‘6000' and sucrose solutions with water potentials of-10 and -7bar, respectively, were used to evaluate water stress tolerance of the varieties/tines. The results suggested that sucrose solution maybe used to screen tolerant breeding materials in the laboratory, while growing plants in water stressed soil in concrete tanks may serve as a toot to s materials having a deep root system and both tolerance and avoidance mechanisms.

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Bangladesh Rice J. 2 (1&2): 17-22, 1991

INFLUENCE OF MOTIVATIONAL FACTORS TO THE ADOPTION OF AZOLLA BY RICE FARMERS

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Key words: Azolla, Adoption, Motivationnal factors, Farmer's characteristics.

ABSTRACT

The study was carried out in the Koronadal Municipality of South Cotabato, Philippines in I985 aimed to findout the interrelationship among farmer internal characteristics, external factors and motivational factors towards the adoption of azolla technology. There were 200 respondents comprising 103 farmer adopters and 97 farmer non adopters of azolla technology randomly selected from a sample frame. Data collection was through personal interview with structured interview schedule. Among external factors (azolla characteristics, change agents efforts and accessibility to infrastructures) azolla characteristics were only related to perception and attitude of the farmers. Change agent efforts were found related to attitude, experience and risk taking capacity and accessibility to infrastructure (incentive) related to perception, attitude and experience of the farmers. Farmers those who had irrigation facilities could take significantly more risk. Among farmer characteristics age was found related to aspiration and experience of the farmers. Education related to attitude, family size to aspiration and risk taking, farm size to perception and aspiration, income and organization affiliation were found related to experience of the farmers. Organization affiliation, income and family size were found related to the adoption of azolla technology. The others had no significant relationships. The farmer's adopters of azolla advanced some reasons in the continuan-ce use of azolla in the future. Among them, main reasons were:

a. Azolla use improves soil condition and thereby increases grain yield (mentioned 82 times).

b. Lessen additional fertilizer cost (67 times).

c. Can be used as food for poultry and pigs (27 times).

Constraints of azolla adoption were unfavourable soil condition (Low pH), irrigation facilities and entrance of sulfuric water from mountain spring.

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Bangladesh Rice J. 2 (1&2): 23-26, 1991

SEED DORMANCY IN SUMMAR RICE (Oryza sativa L.)

J. K. Biswas, M. Z. Haque and MS. Islam*

ABSTRACT

Seed dormancy of 14 Aus r varieties at the pre- and post-maturity stages was determined at 25°C, 30°C and 35°C. Germination percentages increased from pre-maturity to post-maturity stages in the modern verities, BR1, BR6. BR12, BR14, BR1S, and BR16 in threshed condition. BR1 and BR6 seeds on intact panicles were strongly dormant at maturity stage at 25°C and 30°C. Temperature and maturity interaction was highly significant. Varietal selection was considered important for risk areas where flash flood and lodging at grain ripening stage and absence of adequate drying facilities after harvest may cause unwanted grain germination in the field and on the threshing floor.

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Bangladesh Rice J. 2 (1&2) 27-31, 1991

EFFECT OF IRRIGATED RICE CROPPING PATTERNS ON THE PRODUCTIVITY AND PESTS INCIDENCE

S. B. Naseem, S. Alam, N. Islam, M. H. Ali, N. U. Ahmed, M. Fazle Rabbi and A. Nahar *

ABSTRACT

Experiments were conducted to determine the long term consequence of improved cropping patterns along with the farmers one on the agronomic productivity and pest incidence. Three years (1984-1986) data revealed that total rice yield of improved patterns declined with the advancement of time, whereas farmer's pattern produced similar rice yields over the years. The rice yield during Aus (Mar-Aug) and Boro (Dec-Jun) seasons did not vary. Green manuring crop in a pattern produced significantly higher rice yield than patterns without green manures. Wheat and gram yields reduced with the progress of year. High insect infestation was recorded in the Aus and T.Aman (Jul-Nov) seasons while Boro rice was relatively insect-free. Among the insects hispa, stemborer and short-horned grass hoppers were prevalent. The improved pattern gram-BR3-BR11 was severely affected by bacterial leaf blight (BLB) and leaf scald (LSC) as compared to wheat-BR1-BR10, BR3-sesbania-BR4 patterns. BLB was the single most common disease in all the tested patterns over these years. Rainfed low land rice (T.Aman) season experienced more disease incidence than other two seasons.

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Bangladesh Rice J. 2 (1&2) :32-39 1991

ESTIMATION OF WATER REQUIREMENT OF RICE AT DIFFERENT GROWTH STAGES BY USING MICROLYSIMETER

L. R. Bhuiyan, and M. J. Islam*

ABSTRACT

Microlysimeters were fabricated to estimate water requirement of rice at different growth stages. Daily evapotranspiration, evaporation, seepage and percolation rates were directly measured and transpiration rates were derived. During the seedling establishment stage evapotranspiration rates ranged from 2. 8 to 3.3 mm/day and transpiration rates ranged from 0.2 to 0.5 mm/day. Mean daily transpiration rates at tillering stage during irrigated season were higher than mean daily evaporation rates. Transpiration was the major component of evapotranspiration loss during the booting stage. Evapotranspiration rates reached to the peak point at the flowering stage. Mean daily evapotranspiration rates at the flowering stage were 8.1, 6.2 and 4.9 mm/day in Boro 1981, 1982 and T. Aman (rain fed lowland rice) 1982 and mean daily transpiration rates of the corresponding periods were 63, 4.1 and 3.1 mm/day. The results indicated high demand of water at the flowering stage. Evapotranspiration gradually decreased with maturity of rice. Mean daily evapotranspiration rates at maturation stage were 3.3, 4.4 and 3.9 mm/day in Boro 1981, 1982 and T. Aman 1982 respectively. Mean daily seepage and percolation ranged from 1.1 to 1.7 mm/ day. Estimated water requirement for field duration of 112 days for DR3 variety in irrigated Boro in 1981 and 1982 were 700.3 and 618.9 mm. Total water required from seed to seed were 940.3, 858.2 and 727.9 mm for irrigated Boro in 1981, 1982 and 1. Aman 1982, respectively.

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Bangladesh RiceJ. 2 (1&2) :40-43, 1991

EVALUATION OF HERBICIDES IN DIRECT-SEEDED RICE

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ABSTRACT

Effect of herbicides, Machete, Goal, Ronstar, 2, 4-D, Ioxynil + 2, 4-D and Oxadiazon+ 2, 4-D with or without one hand weeding, were compared with that of hand weeding at three locations in a randomized complete block desing having three replications of direct-seeded upland rice. Machete produced the highest yield of 4.61 t/ha. Ron-star, Goal. Oxadiazon + 2, 4-D and post emergence application of 2, 4-D with one supplemental hand weeding was comparable with Machete and were superior to hand weeding. All the herbicides controlled most of the weed species except Cynodon dactylon.

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Bangladesh Rice 5.2(142) :44-48, 1991

INTERCROPPING OF UPLAND RICE WITH MUNGBEAN AT DIFFERENT PLANTING GEOMETRY

A. H. Khan, N.I. Miah, N. Islam, M. H. Ali and N. U. Ahmed*

A field experiment on upland rice-mungbean intercropping was conducted to assess the agro-economic advantages of intercropping in terms of grain, biomass and crude protein yields over rice monoculture. Rice yield was significantly reduced by intercropping with mungbean. A similar reduction in grain yield of rnungbean occurred due to intercropping. However, land equivalent ratio (LER) and competitive ratio (CR) values indicated a beneficial effect of intercropping and thus the crops were considered mutually adaptable.The crude protein yield was the highest with mungbean monoculture. Intercropping increased the crude protein yield of rice. The rice-mungbean intercrop was found to be economically more profitable than rice monoculture.

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Bangladesh Rice J. 2(1 & 2): 49-52, 1991

ENVIRONMENTAL EFFECT ON THE GRAIN CHARACTERISTICS OF SELECTED RICE VARIETIES IN BANGLADESH

R. K. Das, N. M. Miah, Md. E Haque and M. S. Pathan *

ABSTRACT

The experiment was conducted to determine the seasonal effect on the physical grain characters of five varieties of rice. The characters varied significantly both among the varieties and seasons except milling outturn in Boro season. Significant variations were observed for varieties, seasons and variety x season. The results indicated that seasonal variation for temperature, humidity, rainfall so radiation etc. should be considered in selecting grain quality of rice.

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Bangladesh Rice J. 2 (1 & 2) : 53-58, 1991

MEASUREMENT TECHNIQUES OF SUBMERGENCE TOLERANCE IN RICE

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Key words : Lowland rice, Submergence tolerance

ABSTRACT

Measurement of submergence tolerance in rice (Oryza sativa L.) under completely submerged condition at the seedling stage was studied using three indices, viz, percent survival, submergence tolerance score and calculated duration. Data on percent survival, submergence tolerance score and calculated duration to 50% destruction were recorded and analysed. Calculated duration to 50% destruction and submergence tolerance score were efficient in judging varietal differences for submergence tolerance while percent survival gave a vary high error variance resulting low efficiency of the index.

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Bangladesh Rice J. 2 (1 & 2) : 59-62, 1991

YIELD OF MODERN IRRIGATED RICE VARIETIES UNDER DIFFERENT POPULATION DYNAMICS

M. A. Mannan, M. B. Rahman A. A. Choudhury, and S. B. Siddique *

ABSTRACT

Experiments were conducted at the Bangladesh Rice Research Institute (BRRI) farm, Gazipur, during 1986 and 1988 Boro seasons. Modern rice varieties, BR1, BR3, BR12, BRI4, and BR20, were planted at 25cmx30cm, 25cmx20cm, 25cmx15cm, 25cmx10cm and 15cmx10cm spactings. The objective was to determine the optimum population density for a higher yield. The number of tillers, panicles and grain yield per unit area increased with the increase in plant densities. Planting at 25cmx10cm and 15cmx10cm spacing gave Identical and significantly higher grain yield. Among the tested varieties, BR14 yielded the highest grain with 150-155 days growth duration.

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Bangladesh Rice J. 2 (1 & 2): 63-68, 1991

THE INFLUENCE OF INCREASING LEVELS OF NITROGEN AND PHOSPHORUS ON THE GROWTH AND MINERAL NUTRITION OF RICE ON A COASTAL SALINE SOIL

M. A. M. Miah[1] and G. M. Panaullah[2]

ABSTRACT

A greenhouse experiment was conducted with three levels on N viz. 0, 50 and 100 mg/kg soil and three levels of P viz, 0, 50 and 100 mg/kg soil and two rice's, a salt-tolerant experimental line, lR9764-45-2-2, and a salt-sensitive variety, IR26, to study the effect of increasing levels of N and P on the growth and mineral nutrition of rice on a coastal saline soil with an initial ECC of 6.8 DS/m. The higher rate of P fertilizer decreased the plant height of 1R26. The application of 50 mg P/kg soil increased the leaf area and dry matter yield of lR9764-45-2-2. The salt-tolerant line, lR9764-45-2-2, had a greater leaf area and gave a higher dry matter yield than IR26. The application of P had no significant effect on mineral nutrition. An increase in the applied N level increased the N concentration in the shoot of 1R9764-45-2- 2 while in IR26 it increased the N, Na and Cu concentrations and decreased the P concentration. The concentration of Na, Fe, Mn and Cu were higher in the salt- sensitive IR26 than in IR9764-45-2-2. The Na concentration in the salt-tolerant line was lower and K concentration was higher than in the salt-sensitive variety.

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Bangladesh Rice J. 2 (1 & 2) :69-74, 1991

YIELD STABILITY OF SOME RICE GENOTYPES

Q. A. Haque, N. M. Miah, M. A. Kabir, P. K. S. Ray, M. U. Ghani, M. L. Ali and M. S. Islam *

ABSTRACT

The South-Asian Association of Regional Cooperation (SAARC) multiplication trial of 16 rice genotypes was conducted during 1988 under rainfed condition covering nine location5 in five SAARC countries Bangladesh, India, Pakistan, Nepal and Bhutan. The RCB design was followed with three replications. Combined analysis and stability on grain yield of 16 test entries over six locations-three from Bangladesh, two from India and one from Nepal were included to determine the stability of genotypes. Four entries from Bangladesh out yielded all the test entries. Genotype- location interaction and stability parameters were studied for all the test entries. Variation due to location genotype, and genotype-location interaction were found significant. Performances of six top ranking test entries in grain yield were critically evaluated among six diverse rice environments. Two entries, BR8SO-22-1-4 and BRI53- 2B-10-1-3 from Bangladesh, were high yielder but unstable across locations whereas BR425-189-1-6-2-1-2 from Bangladesh and IET7975 from India were found to be very stable with high mean yield. Responses of BR1867-20-1-4 from Bangladesh and NR15013-40-10-1-1 from Nepal were found positive and more sensitive towards increasing environments.

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Bangladesh Rice J. 2 (1 & 2): 75-78, 1991

EFFICIENCY OF DIFFERENT FORMS AND APPLICATION METHODS OF N FERTILIZER ON RAINFED LOWLAND RICE

A. C. Roy, M. A. Mazid and S. B. Siddique *

ABSTRACT

Deep placement of urea super granules (USG) by hand and machine, and prilled urea (PU) by 2 to 3 split applications in rainfed rice were compared during 1986 and 1967. USG performed better than PU in all the parameters tested. The highest grain yield was obtained from hand placed USG which was identical with machine placed USG and three split application of PU. The highest agronomic use efficiency of nitrogen and nitrogen recovery percentage was obtained with the hand placed USG followed by machine placed USG and the three split application of PU.

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Bangladesh Rice J. 2 (1 & 2): 79-82, 1991

EFFECTS OF SHADING ON YIELD OF MAIN RICE CROP AND THE FOLLOWING RATOON RICE

M. A. Quddus[1] and J. W. Pendleton [2]

ABSTRACT

Effects of shading on the yield of IR50 and on its ratoonability was studied at the International Rice Research Institute (IRRI) Farm, wet season. Shading at different growth stages reduced the grain yield of the main crop. Other yield components of the main crop were not significantly affected. Shading the main crop from flowering to 7 DAH had a significant effect on grain yield of the ratoon crop. Shading reduced yield of the ratoon crop by about 72%. Irrespective of growth stages shaded plots had a higher percentage of missing hills than nonshaded plots. Yield components and other plant character were not significantly affected by different treatments.

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Bangladesh Rice J. 2 (1 & 2): 83-89, 1991

EFFECTS OF GREEN MANURING AND NITROGEN FERTILIZER ON THE GROWTH AND YIELD OF RICE

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Keywords Rice (Oryza sativa L.) Green manure, Sunnhemp (Crotalaria juncea L..), Cowpea [Vigna unguiculata (L) Walp]

ABSTRACT

The effects of green manuring with cowpea and sunnhemp on irrigated rice was studied on a heavy clay soil in the BRRI research farm during 1985 Boro season. The aim of the trial was to examine the effects of green manuring in association with applied fertilizer nitrogen on the growth and yield of rice cultivar BRI4. Both cowpea and sunnhemp alone and with applied nitrogen increased tiller number and yield. Cowpea with 80kg N/ha produced grain yield of 4.8 t/ha and was very similar to that obtained by 120 kg N/ha alone. Green manuring with sunnhemp appeared to be superior to cowpea. Sunnhemp with 40 kg N/ha produced the highest grain yield (5.3 t/ha). Applied nitrogen beyond 40 kg/ha in association with sunnhemp did not increase yield. It was concluded that a good crop of green manure could provide about 50% of the total nitrogen requirement of a rice crop on a similar soil type.

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Bangladesh Rice J. 2 (1 & 2): 90-95, 1991

ECONOMIC IMPACT OF SEEDLING AGE OF IRRIGATED RICE

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ABSTRACT

Due to low temperature during December-January the growth of irrigated rice seedlings is retarded making them too short to transplant. To overcome this, usually older seedlings are planted. In order to ascertain the optimum seedling age, two experiments were conducted consecutively at the Bangladesh Rice Research Institute farm, Gazipur during the 1986 and 1987 dry seasons. The varieties, BR3 and 1R50 were transplanted in 1986. and BRI4 and IR50 were used in 1987. In both the years, 20-, 40-, 60-, and 80-day-old seedlings were planted, respectively, on 15 January and 15 February. Although 20-day-old seedlings of both the varieties performed well in terms of yield and gross return, from the economic view point, 40-day-old seedlings proved profitable.

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Bangladesh Rice J. 2 (1 & 2): 96-103, 1991

EFFECT OF WATER REGIMES ON YIELD AND NITROGEN UPTAKE OF DRY SEASON RICE

A. A. Choudhury , S. A. Sattar[1], M. A. Gaffar [2] and S. B. Siddique[1]

ABSTRACT

Rice was grown in the dry season of 1986 and 1987. Effect of four water regimes viz, continuous flooding, alternate drying and flooding, continuous soil saturation and saturation to field capacity on yield components, yield and nitrogen uptake of 5R14 were studied. Continuous flooding increased the number of grains per panicle and decreased unfilled grain as compared to other moisture regimes. Grain yield was the highest with continuous flooding and started to decrease with reduction of added water. Nitrogen uptake by rice crop was highest with continuous flooding which was statistically identical to that with other moisture regimes. Though less frequent Irrigation was needed for continuous flooding, the amount of water added was the highest and that was decreased with the decrease in water regimes.

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Bangladesh Rico J 2 (1 & 2) 104-106 1991

EFFECT OF SEEDLING AGE AND DATE OF PLANTING ON THE GROWTH AND YIELD OF PHOTOPERIOD-SENSITIVE RICE

M. A. Mannan and S. B. Siddique *

ABSTRACT

An experiment was conducted at the Bangladesh Rice Research Institute (BRRI) farm, Gazipur, in the late transplanted Aman season with four photoperiod-sensitive rice varieties as BR11, BR22, BR23 and Nizersail to determine the effect of seedling age and date of planting on the growth and yield of rice. Thirty-, 45-, 60- and 75- day- old seedlings were planted on 30 September. Similarly 45-, 60-and 75- day- old seed lings were planted on 15 October. Most of the varieties produced higher number of tillers, panicles and grain yield when 45- to 60- day-old seedlings were planted in both the planting dates. Higher yield was obtained from BR23 followed by BR22, Nizersail and BR11 Per day yield reduction was higher in BR11 followed by BR22, BR23 and Nizersail for transplanting after 30 September.

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Bangladesh Rice J. 2 (1&2): 107-112, 1991

INFLUENCE OF ORGANIC MATTER ON THE YIELD AND MINERAL NUTRITION OF MODERN RICE AND SOIL PROPERTIES

Mustaque Ahmed and Shamsur Rahman*

ABSTRACT

A microplot experiment was conducted to compare organic matter from dhaincha (40 t/ha) and well decomposed cowdung (60 t/ha) and standard fertilizer treatment (80-60-40 kg N-P_2O_5-K_2O/ha) in terms of their effects on the performance of rice and on soil properties. The application of organic matter and chemical fertilizer increased tiller and panicle production and straw and grain yields of the first crop. However, dhaincha caused excessive vegetative growth which hampered grain formation owing to mutual shading, so that the grain yield increase was minimal with dhaincha. In the subsequent crop, significantly higher grain yield over control was obtained from the plots which received organic matter in the previous crop season. The concentrations of Zn in both the soil (available) and rice straw were lower for the organic matter treatments. Relatively higher levels of exchangeable K, total N and CEC of soil were observed in the organic matter treated plots. Remarkable improvement in soil physical properties, such as, decrease in bulk density and an increase in moisture retention at field capacity were brought about by the application of dhaincha.

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Bangladesh Rice J.2 (1 & 2): 113-116, 1991

RECOVERY FROM SUBMERGENCE AS A SELECTION CRITERION IN RICE

M. S. Pathan, N. M. Miah, M. E. Haque, S. M. B. Quader and H. C. Sarker *

ABSTRACT

Relations of recovery from submergence with submergence tolerance and seedling heights were studied using BR5, Nizersail, Kumragoir, Dudmona, FR13A and their ten F_1 hybrids constituting a 5x5 half diallel set under controlled conditions. The results showed that submergence tolerance, shorter seedlings before submergence and taller seedlings at recovery stage are positively associated with recovery ability. The recovery score should be a criteria for selection in submerged condition as the seedlings looked poor and almost dead immediately after drainage. The indices for selection should be initial short seedling, tall seedling at recovery and phenotypic recovery score.

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Bangladesh Rice J. 2 (1 & 2): 117-121, 1991

EFFECFS OP GROWTH REGULATORS ON THE YIELD OF MAIN CROP AND THE FOLLOWING RATOON CROP

Md. Abdul Quddus* and J. W. Pendleton**

ABSTRACT

The experiment was conducted at the International Rice Research Institute (IRRI) Farm, wet season. Aqueous solutions of 10,100 and 500 ppm of IAA, NAA and 100 ppm of GA_3, and 2, 4-D were sprayed at the rate of 300 litres of spray volume per hectare at flowering and late milk stage. The application of IAA. NAA, CA and 2, 4-D to the main crop at 10, 100 and 500 ppm during the flowering and late milk stages had no beneficial effects on ratoon rice.

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Bangladesh Rice J. 2 (1 & 2): 122-127, 1991

YIELD AND NITROGEN NUTRITION OF MODERN RICE AS AFFECTED BY NITROGEN FERTILIZATION UNDER IRRIGATED CULTURE

A. T. M. A. Choudhury and N. I. Bhuiyan

ABSTRACT

A field experiment was conducted during 1990 dry season (Boro season) to study the effect of four rates of N fertilization on the yield performance and nitrogen nutrition of three modern rice varieties and a promising line, varying in tillering habit, plant height and growth duration under irrigated culture. The experiment was laid out in a split-plot design with variety/line as the main plot and nitrogen rate as the sub-plot, replicated thrice. Grain yield of BR1 and BR14 increased significantly up to 120 kg N/ha. But in case of BR3, yield increase was significant up to 80 kg N/ha and for BRSO2-118-3--1, N application at 120 kg/ha only significantly increased the grain yield over the control. Agronomic efficiency of added N was higher in short statured BR1 and BR3 than the tall statured BR14 and BR802-118-3-1. Grain yield N was the highest in BR802-118- 3-1 followed by BR14, and lowest in BR1. Nitrogen recovery was also higher in short statured varieties than the tail ones irrespective of their growth duration. The promising line BR802-118-3-1 and the variety BR14 may be economically advantageous over the short statures ones.

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Bangladesh Rice J. 2 (1 & 2): 128-133, 1991

EFFECT OF PRE-RICE LEGUME AND RESIDUE INCORPORATION ON RICE YIELD

Md. Murshedul Alam[1] and Dr. Garrity[2]

ABSTRACT

A field experiment was conducted during 1988 to determine the effect of green manure or grain legume residue incorporation on the yield of irrigated rice us influenced by different gap periods between incorporation and rice transplanting. Delay in planting after 29 April showed a decreasing trend in legumes' grain yield. This was artibuted to more rainfall and high soil moisture content. Mungbean was found more susceptible to heavy rainfall and high soil moisture content than cowpea and showed a decreasing trend in residue yield due to leaf senescence with delay in planting dates. Frequent rainfall at later growth stages was found favourable for the vegetative growth of cowpea but heavy rainfall during entire growth period adversely affected it's growth and development. Green manure or grain legume residue incorporation substituted 60 kg N ha in the following rice. The release of Sesbania green manure N was faster than grain legume residue N and thus resulted in the availablity of residue N for longer periods than green manure N. Increasing gap period between incorporation of legume residues and rice transplanting reduced the effectiveness' of green manure more than that of grain legume residues, The rice grain yield per kg of green manure N added was reduced by 2% and 1% for 21- and 35-day-gap periods, respectively, from 7-day-gap period.

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Bangladesh Rice J. 2 (1 & 2): 134-139, 1991

YIELD STABILITY OF A COWPEA CULTIVAR IN RAINFED RICE LAND

Md. Murshedul Alam* and D. P. Garrity**

ABSTRACT

There is potential in the tropical regions to include cowpea [Vigna unguiculata (L) Walp] as a dual purpose crop for food and manure as a pre-rice crop under pre-monsoon environment to intensify rice based cropping systems. Grain yields are unstable for drought and excess moisture in different growth stages in this environment. Stability of simulated grain and residue yields of an early maturing cowpea cultivar (CV IT82D-889) over 20 years was observed using a simulation model. The grain and residue yields of cowpea were well predicted by the model under poorly drained soil condition. Delay in planting after 15 and 30 April under poorly-and well-drained soil condition% respectively, resulted in reduced grain and residue yields. Longterm yield stability analysis showed that grain and residue yields were loss variable when planted on 15 April compared to delayed planting dates under well drained soil conditions. Under poorly drained soil conditions, the early planting dates were more variable than delayed planting dates, but yields were very low in delayed plantings.

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DEVELOPMENT OF RAINFED RICE CROPPING PATTERNS IN BANGLADESH

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ABSTRACT

Field experiments were conducted to develop alternative transplanted Aus-Aman rice cropping patterns for maximizing yield in rainfed favourable environment. Transplanting of Aus in late May to mid-June with several Aus-Aman advance line cropping pattern combinations produced 1.5 t/ha more yield than the existing recommended patterns of BRI-Nizersail. For Aus, the line IR50, IR8608-298-3-1-1-2 and IR 9729-67-3 and for Aman IR50, BR593-698-5-1-8 and BR593-676-4-1-2 in general showed superior performance in achieving high total cropping pattern yield. Twenty to 25 days reduction in Aus-Aman total field duration can be obtained by using short duration Aus lines such as IR9729-67-3, IR50 or 1R8608-298-3-1-1-2 and photoperiod insensitive Aman lines, such as IR50.

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EFFECF OF PLANTING METHODS ON GRAIN YIELD OF AUS + DEEPWATER RICE MIXED CROPPING

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ABSTRACT

Field experiments were conducted in farmers' fields at Shibalaya, Manikganj during 1984-85. The soil of the experimental field was silt loam to clay loam. The experiments were carried out to determine the effects of planting methods on grain yield of Aus + deepwater rice (DWR) mixed cropping. The number of tillers of DWR were influenced by the methods of planting. Grain yield of Aus was reduced by mixed cropping with DWR. Similarly transplanted DWR produced higher grain yield than mixed cropping excepting simultaneous sowing in 1985. Therefore, the farmers in the DWR environment may be suggested to adopt simultaneous sowing or transplanting of DWR after Aus harvest.

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MARKETING OF PADDY BY INTERMEDIARIES IN TWO SELECTEX AREAS OF BANGLADESH

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ABSTRACT

The study was undertaken to analyse the economics of Aman paddy marketing in two selected secondary markets of Barisal district during 1990. Study showed that different intermediaries like pharia, paiker aratdar and retailer, functioned under different channels. The average purchase of aman paddy/rice for all intermediaries were 1232 quintal for six months. The average per quintal marketing cost for miller was highest (Tk 53.4) and the profit was also highest for miller (Tk 20/quintal). On the other hand, the marketing cost for retailer was lowest (Tk 16.6/quintal) but their profit was higher than the profit of pharia (Tk 13/quintal), paiker (Tk 12/quintal) and aratdar (Tk 14/quintal). Price spread and farmers share of consumers price under three different paddy/rice marketing channels have been worked out. The result indicated an inverse relationship between the marketing channel and the farmers share i. e, shorter marketing channel leads higher amount of share for the rice farmers.

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EFFECT OF POST EMERGENCE RAKING FOLLOWED BY LADDERING ON THE GROWTH AND DEVELOPMENT OF AUS RICE

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ABSTRACT

Post emergence raking followed by laddering is a common practice in dry seeded rice in Bangladesh. An experiment was conducted in a Chiata series of grey terrace soil during Aus season of 1987 at the BRRI Gazipur. The treatments were no raking, one raking and one laddering after 10 days, two raking and one laddering after 10 days, one raking and one laddering done twice after 10 and 30 days, and two rakings and one laddering done twice on 10 and 30 days of rice seedling emergence. The objective was to known the effect of post emergence raking and laddering on the growth and development of rice plant. Post emergence raking followed by laddering stimulated the rice plant to produce more tillers and dry matter. This was mainly attributed to overcome the injury caused to the plants during raking and laddering as compared to that produced by unranked plants. Two rakings done twice-one at 10 and the other at 30 days after seedling emergence was more effective than single raking once or twice.

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— Short Communication

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AN APPRAISAL OF SEED STORAGE MANAGEMENT IN AGRICULTURAL FARMS OF BANGLADESH

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EFFECT OF POPULATION DENSITY AND SEEDLING AGE ON THE YIELD OF LATE PLANTED RAINFED LOWLAND RICE

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