Bangladesh rice j. 4(1&2): 1- 4, 1993

EFECT OF PLANTING METHODS AND NITROGEN ON GROWTH AND NITROGEN UPTAKE OF LOWLAND RICE

M. G. Ali, S. A. Sattar[1], M. A. Gaffer[2] and A. A. Mamun[2]

ABSTRACT

Effect of different planting methods and nitrogen rates on the growth and nitrogen uptake of lowland rice was studied in the Bangladesh Rice Research Institute (BRRI) farm, Gazipur during 1987. Direct-seeded rice having higher plant density produced taller plants and more tiller per unit area than the transplanted crop. Nitrogen application increased tiller number and plant height in direct-seeded crop but not in transplanted one. Direct-seeded and transplanted crops consumed similar amount of nitrogen. Nitrogen application increased the total nitrogen uptake by both crops.

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TIDAL WATER FOR IRRIGATION IN COASTAL REGION OF BANGLADESH

Nazrul Islam[1], M. A. Ghani[2], Golam Mowla[1] and Manoranjan K. Mondal[1]

ABSTRACT

This study was conducted in some selected areas of greater Khulna and Barisal districts with a purpose of exploring possibility of using tidal water for irrigated rice. Existing canals in the study area are receiving water from the river Baleswar. It was found that the natural canals slope towards downstream. But during high tide the hydraulic gradient changes and the flow is towards upstream. The approach velocity of tidal water rises upto 0.8 m/sec (2.5 ft/sec). And it is enough to build-up the water head for irrigation. It was observed that 2.83 to 5.66 m^3/sec (cms) of water is available for feeding the irrigation canal after head development of 0.8 m (2.5 ft) by tidal water. The maximum salinity level varied from 2000 to 2500 micromohs/cm during dry period (April- May).

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Bangladesh rice j. 4(1&2): 9-13, 1993.

EFFECT OF LONG-TERM GROUNDWATER IRRIGATION ON SOME PHYSICO-CHEMICAL PROPERTIES OF RED LATERITE SOIL

M. Nuruzzaman and M. W. Zaman[1]

ABSTRACT

A study was conducted to determine the effect of long-term ground water irrigation on some physico-chemical properties of soil of Madhupur upazilla in Bangladesh. Respective irrigated and non-irrigated soil samples from different deep tube well areas of the upazilla were collected during December, 1988, in order to observe the change in physico-chemical properties of soil due to ground water irrigation. The analyses of the soil included pH, electric conductivity (EC), organic carbon, texture, bulk density, particle density, porosity and maximum water holding capacity. Results reflected that the soil of the study area was slightly acidic to nearly neutral in reaction (pH 52-6.9) and long-term ground water irrigation did not bring differential change in pH (5.6-6.7). The EC of the non-irrigated (82-204 micro mhos/cm) and irrigated soils (63-204 micro mhos/cm) indicated that the salinity of the study area was negligible The results of the physical analyses of both irrigated and non-irrigated soil showed that long-term groundwater irrigation failed to bring remarkable change to physical properties of the soils.

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Bangladesh rice 4(1&2): 14-16 1993.

FARM LEVEL EVALUATION OF A SARI POWER TILLER

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ABSTRACT

An experiment was conducted in the farmers held at Jhalokathi district to determine the performance and endurance of the BRRI power tiller. It was observed that the land preparation was easier in wet land than the dry land condition. Wet land preparation required two to three passes of ploughing followed by one or two passes of laddering by bullocks. Fuel consumption was less in low land (0.75 l/hr) condition than that of the upland (0.84 l/hr) condition. Tilling time (18.93 hr/ha) was higher when land was submerged with 18.50cm standing water than that of the upland condition (16.5 hr/ha). Tiller depth was low for both upland (6.25 cm) and submerged condition (6 cm). It was observed during the operation that due louse of sub-standard material in manufacturing; the power tiller developed major malfunctioning in tiller assembly. Based on the study, the BRRI power tiller reeds some modification before recommending it for farm level use.

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PROFITABILITY OF IRRIGATED RICE CULTIVATION IN SOME SELECTED AREAS OF BANGLADESH

M. A. Quayurn, M. R. Islam, M. E. Harun and B. A. A. Mustafi[1]

ABSTRACT

The average farm size and cultivated and found in the outreach area were 1.48 ha and 1.27 ha whereas in the BRRI project area they were 1.56 ha and 1.32 ha respectively. Farmers management practices and fertilizer application were better and accurate in the BRRI project area compared with outreach area. Most of all varieties of MV and LV gave higher yield in the project area. The average yield of MV found in the project area were 4481 Kg/ha but in the outreach area it was 3959 Kg The average gross returns and total cost of MV in the project area was Tk.23929/ha and Tk.14869/ha but in the outreach area it was Tk.21 299/ha and Tk.15039/ha respectively. Thus the net returns obtained was higher (Tk.9060/ha) in the project area. than that of the outreach area (Tk 6260/ha) for MV on full cost basis. High cost of inputs, irrigation problem and insect/diseases were the main constraints in both the outreach and the project area. Therefore reduction of input price, proper and timely management practices and expansion of MV adoption could expedite the Boro productivity which in turn accelerates economic development.

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ECONOMIC ANALYSIS OF UREA SUPER GRANULES APPLICATION IN IRRIGATED RICE

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ABSTRACT

Two field experiments were conducted separately in the farmers plot of Masterbari and Gachha of BRRI project area, during Bore seasons of 1988-89 and 1990-91 to compare the benefits of Urea Super Granules (USG) application over Prilled Urea (PU). In 1988-89, the doses of fertilizer application were 29, 58 and 87 kg N/ha from both USG and PU whereas, in 1990-91, the doses used were 58 and 87 kg N/ha. In addition, in 1990-91 Boro season, a group of 21 farmers were selected in BRRI project area to conduct demonstrations of both USG and PU in their own plots in order to have their reactions regarding the use of USG. Each of them were supplied with 87 kg N/ha of both USG and PU along with 60-40-10 kg/ha Of P_2O_5, K2O and S. Marginal analysis and partial budgeting techniques were used for analyzing the data. The marginal rate of return (MRR) was highest for USG at 58 kg N/ha in both the years. Demonstration plots using USC produced at least 25% higher yield than those using PU in both the single and double crop situations. Of the survey farmers 60% showed positive attitude for using USC over PU.

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Bangladesh rice j. 4(1&2): 28-33, 1993.

AN ECONOMIC ANALYSIS OF TUBEWELL IRRIGATION IN AN AREA OF BANGLADESH

F.I. M. Golan Wahed Sarker and S. M. Munzur Murshed[1]

ABSTRACT

The study was aimed to analyze the - (a) effect of tube well irrigation on cropping intensity, farm income and labour employment; and (b) to make an economic appraisal of alternative investment on deep tube well (DTW), shallow tube well (STW) and hand tube well (HTW) irrigation system in an area of Bogra district. The cropping intensity was higher in irrigated plots than non-irrigated plots. A substantial difference existed in the farm income between irrigated and non-irrigated he plots. In all types of irrigated plots more than 72 percent of the annual income above gross expenses were obtained during Boro season compared to 40 percent In non-irrigated plots. Labour employment was increased by 15.24, 28.45 and 35.85 percent on DTW, STW and HTW irrigated plots respectively. The net present worth (NPW) and benefit cost ratio (BCR) of DTW projects were more sensitive to the changes in the discount rates than those of HTW projects while NPW and BCR of HTW projects were more sensitive to the changes in the discount rates than those of STW projects. The internal rates of returns (IRR) from investments on DTW, STW and HTW projects were 14, 36 and 17 percent respectively. It can be safely concluded that STW project is more profitable compared to HTW and DTW project. The investment on HTW project is better than that of DTW project.

[1]Scientific Officer, Farm Management Division BRRI and Professor, Agril. Economics Department BAU Respectively.

Bangladesh rice j. 4(1&2): 34-41 1993.

PRODUCTION AND MARKETING OF PADDY BY FARMERS IN A COASTAL DISTRICT OF BANGLADESH

M. Mizanur Rahman, M. Shahe Alam, Tara Chand and B. A. A. Mustafi[1]

ABSTRACT

The study was undertaken to analyze the economics of production and marketing of Aman paddy by farmers in some selected areas of Barisal district. The average production per hectare of local Aman paddy for the marginal, small, medium and large farms were 21.3, 20.5, 19.8 and 19.5 quintal and the production of modern variety of Aman paddy were 29.8, 29.5, 30.5 and 30.9 quintal, respectively. The average production of all farms being 20.3 and 30.2 quintal per hectare respectively. The marketed quantity of paddy for all categories of farms were 2.46 quintal on per farm basis. The average per quintal marketing cost was more or less same for all farm groups. Gross margin per hectare was the highest (7729 Tk/ha) in case of marginal farmers and the lowest (6493 Tk/ha) in case of the large farmers for local paddy but for MV paddy, it was the highest (10532 TK/ha) in case of the large farmers and the lowest (9900 Tk/ha) in case of the small farmers. The analysis indicated lesser farmers' share of consumers price with longer marketing channel.

[1]Scientific Officer, Senior Scientific Officer, Principal Scientific Officer and Senior Scientific Officer respectively, Bangladesh Rice Research Institute, Gazipur 1701.

Bangladesh rice j. 4(1 &2): 42-46, 1993.

EVALUATION OF PRILLED UREA AND UREA SUPERGRANULE AS NITROGEN SOURCES FOR UPLAND AUS RICE

S. K. Zaman, M. A. Razzaque, S. M. R. Karim and A. U. Ahmed[1]

ABSTRACT

Two field experiments were conducted on a coastal saline soil at the Bangladesh Rice Research Institute (BRRI), Regional station, Sonagazi in 1988 and 1989 Aus seasons to compare the efficiencies of prilled urea (PU) and urea supergranule (USG) as sources of N for upland Aus rice, The N doses used as treatments were 29kg and 58 kg/ha for both PU and USG. The test variety was BR2O, a modern upland Aus variety released by BRRI. The results showed that urea supergranule consistently produced

significantly higher grain yield than PU, Also, the total N uptake, apparent N recovery and agronomic efficiency of N were higher with USS than PU.

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Bangladesh rice j. 4(1&2): 47-53, 1993.

ECONOMICS OF LOWLAND RICE CULTIVATION UNDER DIFFERENT PRODUCTION SYSTEMS IN AN AREA OF BANGLADESH

B. A. A. Mustafi, M. R. Siddiqui, M. R. Islam, A. U. Ahmed, M. A. Razzaque and K. A. Billah[1]

ABSTRACT

The study was designed to identify resource use and productivity of modern and local rice varieties grown by farmers in some selected sites of Narshingdi district. Differences in the level of net return, resource use and productivity between MVs and LVs of rice were examined through gross margin analysis. Production function analysis was used to measure the factors contributing to the yield of modern and local rices. MVs incurred higher cost of production, but gave significantly higher yield of 2.91 t/ha and 2.79 t/ha in irrigated and rainfed conditions compared to LV rices as 2.29 t/ha and 2.06 t/ha. The gross margins obtained from MVs in both irrigated and rainfed conditions were substantially higher compared to LVs. Labour employed in modern variety was found to be substantially higher as 102 and 101 man-days per hectare for irrigated and rainfed conditions compared to local varieties as 92 man-days/ha and 87 man-days/ha, respectively. Four criteria of income distribution namely: hired labour, family labour, current inputs and operators residual were used to find cut the impact of modern rice on farm income distribution pattern. Modern variety provided 64% and 69% of its output as net benefits to the farmers when it was grown under irrigated and rainfed conditions. The Local variety provided 60% and 61% as net benefits when it was grown under the stated conditions. Thus income distribution from modern variety have shown marginally loss egalitarian than the local variety rice cultivation.

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EFFICIENCY OF AGRICULTURAL LASOURERS UNDER DIFFERENT TYPES OF SUPERVISION

Mohammed Jahan Ullah Chowdhury, Meer Md. Muniruzzaman, F. I. M. Golam Wahed Sarker and Tara Chand[1]

ABSTRACT

Working efficiency of the labourers by the four common methods of labour supervision viz. Direct Supervision, Indirect Supervision, Job Contract method and by the Contractor's labour supervised by the contractor practiced at the Bangladesh Rice Research Institute (BRRI) for transplanting,weeding, and harvesting of rice in the Aus, Aman and Boro seasons were studied.The study revealed that the labourers supplied and supervised by the contractor(s) required minimum man-hours/ha for all the operations and for all the seasons. But the quality of the works done by this method was slightly inferior to the other methods studied. Considering the BRRI's own labourers, it was observed that the Job Contract method required less man-hour/ha which was followed by the Indirect Supervision method. However, the quality of the works done by these two methods were more or less the same. The Direct Supervision method needed the maximum man-hour/ha. But the quality of works done by this method seemed to be superior to the other methods studied.

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Bangladesh rice j.4(1 &2): 59-62, 1993.

SURVEY OF THE POPULATION OF GREEN LEAFHOPPER (Nephotettix cincticeps Uhler) WITH DIFFERENT LIGHT TRAPS

M. A. Razzaque, A. U. Ahmed, Lininnahar and Gasiram Rema[1]

ABSTRACT

The incidence of rice Green Lealhoppor (Nephotettix cincticeps Uhler) in traps with three different types of lights were monitored in the International Agricultural Training Center (TAITC) in Japan from June 27 to

October 08, 1990. During the rice season three clear peaks of incidence of hoppers were observed at panicle initiation, flowering and maturity. Attracting power of the blue light (73%) was much higher than that of fluorescent (4%) and the tungsten (23%) lights. Traps with blue light appeared to be effective in monitoring N. cincticeps even at very low population densities.

[1]Bangladesh Rice Research Institute, Gazipur -1701.

Bangladesh rice j. 4(1&2): 63-69, 1993.

GROUNDWATER ASSESSMENT OF A SELECTED IRRIGATION SYSTEM IN BANGLADESH

M. A. Sattar and M. N. Islam[1]

ABSTRACT

A field study was conducted in 10 farmer-managed deep tubewell irrigated areas of Barind Tract ground water basin, Bogra, Bangladesh with the specific objective of (a) assessing the ground water recharge in the study area (b) evaluating the fluctuation of ground water table of aquifers arid its response on rainfall and river stage in the vicinity and (c) evaluating the aquifer characteristics and properties and (d) recommending the safe utilization of tubewells based on discharge-drawdown relationship and well spacing for sustainable ground water management in crop production. The 8 years (1979-1986) groundwater table indicated that the maximum lowering of groundwater table was 7.87 meter in the month of March which was below the operation level of shallow tubewell. A multiple regression relationship with groundwater table (y) as dependable variable, and raintall (X1) and river stage (X2) as independent variables was done. The study revealed that there is a significant direct relationship among rainfall, ground water table fluctuation and stream flow. The average transmissivity and storage coefficient values were 4388 m^2/day and 0.000587, respectively which indicated that the study areas has potential for tubewell utilization. A model for safe well spacing was developed for well discharge versus spacing of well. The findings indicated that for shallow well with discharge rate of 11 to 20 1/sec the spacing was in the range of 122 to 250 meters. However, for deep tubewell with discharge capacity of 47 to 54 1/sec the spacing was in the range of 300 to 390 meters for safe and sustainable utilization of ground water for irrigation.

[1] Respectively Senior Scientific Officer and Principal Scientific Officer, IWM Division, Bangladesh Rice Research Institute, Gazipur-1701.

Bangladesh rice j. 4(1&2): 70-72, 1993.

SULPHUR ADSORPTION ABILITY OF SOME RICE SOILS OF BANGLADESH

M. Mujibul Islam and Richard P Dick[1]

ABSTRACT

A study was conducted to measure the sulphate adsorption ability of three rice soils Bangladesh. The soil type and the location of the soils were: Madhupur tract soil (Ultisol), Joydebpur; Calcareous Brown Flood plain soil (lnceptisol), Faridpur; and Barind tract soil (Ultisol) Thakurgaon. Potassium sulphate solution containing 100 or 200 mg $S0_4$ -S/ml added per g of soil and the suspension was allowed to stand for two hours prior to extraction with 0.1 M LiCi solution. Sulphate remaining in the leachate was measured using Dionex ion chromatograph. Of the three rice soil, Madhupur and Barind tract soils (both Ultisols) from Joydebpur and Thakurgaon locations, respectively showed sulphate adsorption ability. The amount of sulphate adsorbed at the higher level of added sulphate (200 mg SO_4-S/g soil) was 33 kg/ha in Joydebpur soil and 36 kg SQ_4-S/ha in Thakurgaon soil. The sulphate adsorption ability of these soils showed the linear adsorption patterns and was found to be dependent on the added suIphate concentration.

[1]Senior Scientific Officer, Bangladesh Rice Research Institute, Gazipur Bangladesh and Professor Oregon State University, USA, respectively.

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COMPARISON OF GYPSUM AND THIOVIT AS SOURCES OF SULPHUR FOR WETLAND RICE

M. Mujibul Islam and N.I. Bhuiyan[1]

ABSTRACT

Field experiments were conducted at Bangladesh Rice Research Institute (BRRI) farm, Joydebpur (Ultisol) during the transplanted Aman season of 1986 and 1987. The objective of the experiment was to study the

effectiveness of Thiovit, a S-containing fungicide, as a source of sulphur for wetland rice in comparison with gypsum on the straw and grain yields and N and S nutrition of wetland rice.

Addition of S either as gypsum or as thiovit along with NPK fertilizers significantly increased the grain and straw yields of BR11 rice over NPK with no S treatments. The highest total N and S uptake of BR11 was observed in thiovit treated plots. It appeared from the experimental results that thiovit may be used as an alternative source of S for wetland rice.

[1]Principal Scientific Officer and Chief Scientific Officer, Soil Chemistry Division, Bangladesh Rice Research Institute, Gazipur.

Bangladesh rice. 4(1&2): 76-79, 1993.

NITROGEN BALANCE IN SOIL UNDER WETLAND RICE CULTURE

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ABSTRACT

Pot experiments were conducted at the Bangladesh Rice Research Institute (BRRI) from 1987 to 1989 to determine the effect of native soil N on the yield performance of rice and apparent N balance in soil under wetland rice culture. Five soils with different native N content were used in the study. Two rice crops were grown per year without adding N fertilizer having a dry fallow period of about 60 days. The grain yield progressively decreased in all the soils from the beginning year. However, the magnitude of yield decline was higher in the soil where the initial yield of rice was higher. After 6 crops in three years, the apparent N balance was higher where the native N content of the soil was lower. The correlation co-efficient of initial total N content and its depletion and incubated NH_4 with its depletion were significant ($r > 0.90$ and $r = 0.959$).

[1] Soil chemistry Division, Bangladesh Rice Research Institute, Gazipur 1701.

Bangladesh rice j. 4(1&2): 80-83, 1993.

WEED CONTROL PRACTICE FOR IRRIGATED RICE

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ABSTRACT

Combinations of two weeding methods- manual and mechanical weeding, applied at two growth stages of irrigated rice were evaluated. Early weeding was done at 18-28 days after transplanting (DAT) and late weeding at 38 - 46 DAT during different seasons were done. Weed population, total weeding cost and rice grain yield were considered for comparison. Weeding cost was lowest (Tk.520-1231/ha) with single manual weeding at early weeding in all seasons and was similar to that by s mechanical weeding at early weeding. Highest weeding cost (Tk.1780-3569/ha) was with two mechanical weeding.Based on least cost involvement and highest yield, only one mechanical weeding at 18-28 days alter transplanting is better in irrigated rice cultivation in different seasons.

[1]Senior Scientific Officer, Scientific Officer, Principal Scientific Officer and Senior Scientific Officer respectively, Farm Management Division, Bangladesh Rice Research Institute, Gazipur 1701.

Bangladesh rice j. 4(1&2): 84-88. 1993.

EVALUATION OF TWO GREEN MANURES FOR BIOMASS PRODUCTION, NITROGEN ACCUMULATION AND THEIR EFFECTS ON SUBSEQUENT RICE YIELD

M. R. Ahmed, M. N. I. Miah and L. Nahar[1]

ABSTRACT

The experiment was conducted at the Research Farm of the Bangladesh Rice Research Institute, Gazipur to evaluate the performance of sunnhemp (Crotalaria juncea L) and cowpea (Vignaunguiculata (L) Walp) as green manure crops and their effects on rice grain yield. Green matter yields of sunnhemp and cowpea were 15,270 and 5,050 kg/ha, respectively and their corresponding dry matter production were 3,246 and 859 kg/ha. Sunnhemp accumulated about 90 Kg N/ha which was about three times higher than that of cowpea. Suonhemp increased rice grain yield by 13.32 percent and total dry matter production by 15.51 percent over cawpea, However, the increases due to sunnhemp cultivation were 31.19 percent for grain and 36.47percent for total dry matter production over fallow. Nitrogen content and uptake by rice were

greater in sunnhemp treated plots over cowpea and fallow. It is concluded that sunnhemp is a superior green manure crop, because of its faster growth rate and larger amount of biomass accumulation.

[1]Bangladesh Rice Research Institute, Gazipur -1701.

Bangladesh rice j. 4(1&2): 89-94, 1993.

PERFORMANCE TEST OF A CENTRIFUGAL RICE HULLER AND A SCREEN-ROLLER POLISHER

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ABSTRACTS

An experiment was set up to test a Centrifugal rice huller and a Screen-roller polisher for finding the speed, feeding rate, capacity and quality of the products. The test results showed that both the huller and polisher were suitable for parboiled paddy. The speed of the huller was about 3200 rpm. The capacities of the huller and polisher for parboiled paddy were about 350kg/hr and 300kg/hr respectively. The broken percentage of the polished rice was about 5% which is within the range. The power requirement for both the huller and the polisher are 7 kW. The adjustment of the huller is satisfactory and the polisher needs some refinement. This machine is better than the existing huller, which is used tot both hulling and polishing.

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Bangladesh rice j. 4(1 &2): 95-99. 1993

STUDY ON THE STEEPING CHARACTERISTICS OF A MODERN PADDY VARIETY

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ABSTRACT

The parboiling of paddy, a hydrothermal process, is a treatment given to raw paddy to enhance the quality of milled rice during milling. Modern methods of parboiling involve steeping (soaking) the raw paddy at higher temperatures and then steaming. The steeping characteristics of different paddy varieties are essential for the rice processors. An experiment was conducted to study the steeping characteristics of BR14 variety. The saturated soaking moisture content was found about 30% (wet basis) and the maximum soaking temperature and duration was found 60°C and 5 hours respectively. Initially the soaking rate was very high, but it gradually decreased and finally came to zero. The condition of high temperature paddy soaked was better than that of the soaked paddy at room temperature. No fermentation or bad smell was found at higher temperature. It is suggested that the steeping characteristics of all the popular modern varieties of paddy should be determined for better rice processing.

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Bangladesh rice j. 4(1&2): 100-104, 1993

A COMPARATIVE PERFORMANCE OF RICE VARIETIES UNDER UPLAND AND LOWLAND CULTURE

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ABSTRACT

Four modem varieties namely BR1, BR9, BR2O and BR21 were grown to compare their performance between upland and lowland culture. All varieties were not found to adapt equally under two growing cultures. Based on the comparative grain yield between upland and lowland culture BR1 was found to be moderate adaptive while BR9 was poor adaptive under upland culture, BR2O and BR21 were equally adaptive under upland and lowland cultures. In fact BR20 produced significantly higher grain yield under lowland culture compared to upland culture.

[1]Bangladesh Rice Research Institute, Gazipur 1701, Bangladesh.

Bangladesh rice j. 4(1&2):105-109, 1993

NITROGEN RESPONSE OF MODERN AND LOCAL RICE VARIETIES UNDER FLOOD PRONE AND FLOOD FREE LANDS

K. Ahsan, A. R. Gomosta and N. I. Bhuiyan[1]

ABSTRACT

An experiment was carried out in Bangladesh Rice Research Institute (BRRI), Regional Station Farm, Habiganj during Boro season of 1990 under flood prone and flood free lands to study the nitrogen response and grain yield of MV and local rice varieties. Two rice varieties BR14 and HBJB.VI were studied under 5 levels of nitrogen, viz, 0, 20, 40, 60, and 80 Kg/ha. Both the varieties produced higher grain yield in flood prone land than that in flood free land. Grain yield increased with increased added nitrogen upto 80 kg N/ha in both land types. But the nitrogen response in terms of tiller number, green leaf area, grain yield and nitrogen uptake by plants wore higher in flood free land.

[1]Bangladesh Rice Research Institute, Gazipur 1701, Bangladesh.

Bangladesh rice j.4 (1&2): 110-115, 1993

GROWTH AND YIELD OF BR14 AS AFFECTED BY ADDED NITROGEN IN FLOOD PRONE AND FLOOD FREE LANDS

K. Ahsan, A. A. Gomosta and N. I. Bhuiyan[1]

ABSTRACT

A field experiment was conducted to know the influence of added nitrogen on growth behaviour and grain yield of BR14 in flood prone and flood free land. Crop growth rate (CGR), Relative tillering rate (RTR), Leaf area ratio (LAR), N-uptake and grain yield were higher in flood prone land compared to those in flood free land with or without added nitrogen. All growth data, N-uptake and- grain yield data indicated remarkably higher nitrogen response in flood free land and than that in annually flooded land.

[1]Bangladesh Rice Research Institute, Gazipur 1701, Bangladesh.

Bangladesh rice j. 4(1 &2):116-122, 1993.

RESPONSE OF SOWING TIME ON GROWTH AND BIOMASS PRODUCTION OF DHAINCHA (Sesbania canabina) AS A GREEN MANURE CROP

F. I. M. Golam Wahed Sarker, Meer Md. Muniruzzaman, J. U. Chowdhury, Tara Chand and Monotosh Howlader[1]

ABSTRACT

The experiment was conducted at the experimental farm of Bangladesh Rice Research Institute (BRRI), Gazipur, to determine the response of seeding time of Dhaincha (Sesbania canabina) for higher biomass yield. Seeding on first June was found best for higher biomass production (9.60 t/ha) when harvested at 60 days after sowing (DAS). For green manuring, Dhaincha may be seeded during March to June, and produced 5.5-9.6 t/ha biomass. Green biomass production increased with the increase in growth duration. However, Dhaincha may be incorporated into soil at 45 DAS from mid March to 1st week of June sowing. Among three agricultural seasons Kharif-I is the best possible seeding time for Dhaincha production. During the turnaround time in between irrigated (Boro) and rainfed lowland (T. Aman) rice, Dhaincha may be grown as green manure crop to improve soil fertility.

[1]Respectively scientific officer, and Senior Scientific Officers and Principal scientific officer, Farm Management Division and Senior scientific officer, Agril. Statistics Division, Bangladesh Rice Research Institute, Gazipur -1701

Bangladesh rice j. 4(1&2): 123-127, 1993.

EFFECT OF MISSING HILLS ON GRAIN YIELD AND YIELD COMPONENTS OF RICE

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ABSTRACT

Effect of missing hills on the grain yield and yield components of rice (BRI4 and BR23) was studied. Missing hills significantly affected grain yield, number of panicles per hill, panicle length and spikelets per panicle. With the increase in percentage of missing hills (10 to 90%) the panicle number per hill became almost double in both the varieties; the panicle length increased by about 5 cm in BR23 and about 4 cm in BR14. The highest spikelet number per panicle was found with 80% missing hills in BR23 and with 60% missing hills in BR14. Ninety percent missing hills gave the highest filled grain percentage. However, the number of missing hills and grain yield showed a negative correlation. The yields obtained from 0% and 10% missing hills were statistically similar in BR23 and it was identical up to 20% missing hills in BR14. Results indicated that yield loss compensation through improvement in yield contributing character is possible only up to certain level of missing hills.

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EFFECT OF TILLER SEPARATION ON THE YIELD AND AGRONOMIC CHARACTERISTIC OF LATE TRANSPLANTED AMAN RICE

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ABSTRACT

Two experiments were conducted on farmers field during late Transplanted Aman in 1990 and 1991 at Gazipur district with BR22 (Kiron) to determine the effect of tiller separation on the growth and yield as compared to those of intact mother hill It was observed that the intact mother hill gave significantly higher yield (4.15 and 4.47 t/ha) followed by the plants where 4 tillers were kept with the mother hill (3.34 and 3.62 t/ha). The replanted tillers gave poor yields (1.44-2.51 t/ha). The separated tillers when replanted with 4 tillers/hill gave at least a halt of the main crop yield with about 2.5 times more area coverage. The intact mother hill produced more panicles/m^2 (250-271) and more spikelets/panicle (121-125) along with minimum sterility percentage (19-21%) as compared to the separated and replanted hills. Thousand grain weight significantly varied among the treatments (15.7-18.2g). Plant heights were shorter by 7-23 cm, straw yields were lower by 1-3 t/ha and flowering and maturity were delayed by 5-10 days in separated and replanted hills as compared to the intact mother hills,

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EFFECT OF ACCELERATED AGING ON GERMINATION AND SEEDLING EMERGENCE OF SOME RICE CULTIVARS

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ABSTRACT

Experiments were conducted both at the Agronomy laboratory and field of the Bangladesh Rice research Institute (BRRI), Gazipur during Boro and Aus seasons. 1990 to study the effect of accelerated aging on germination and seedling emergence of some rice cultivars.Cultivars used were BR1, BR14, Pashusail and Banazira in Boro season and BR1, BR3, BR8, BR14, BR20, Dular and Kataktara in Aus season, Two day accelerated ageing at 40°C and 100% relative humidity had an stimulating effect on increasing percent

germination and seedling emergence. But the ageing treatments extended to duration of four to six days markedly depressed the above characters for both the group of seeds in Boro and Aus seasons.

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RESPONSE OF RICE TO SULPHUR AND ZINC FERTILIZATION IN A DEFICIENT SOIL

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ABSTRACT

A field experiment was conducted to evaluate the response of rice to applied S and Zn fertilizers on a course-textured S-and Zn-deficient soil and to study the interactions of S and Zn in relation to the nutrition and yield of rice. IR62 was used as the test variety.

Sulphur application at the rate of 50 kg/ha significantly increased grain yield over control, but Zn application had no effect on grain yield. Zinc content in straw and Zn uptake at harvest decreased with increasing applied S levels but Zn level did not influence S content and uptake. Sulphur uptake was positively and significantly correlated with grain yield while Zn uptake correlated well with dry matter yield up to the panicle initiation stage.

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SPLIT APPLICATION OF UREA IN IRRIGATED RICE

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EFFECT OF PLANTING METHODS AND NITROGEN ON GRAIN FILLING, WEED BIOMASS AND COST OF PRODUCTION OF LOWLAND RICE

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