Studies on the Time of Irrigation in the Non-transplanting Method of Rice Plant (II)

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The project concerning irrigating date on drained field in which rice plant seeds were sown directly, was taken place. The equipment was Lysimeter of ¼ Tsubo area and 1 m depth in duplicate, also with transplanting division in comparison. Outline of results is as follows:

(1) Irrigating entire period division (Control) shows almost similar appearances to the transplanted.

(2) Under drained condition plant growth is suppressed, but as soon as irrigation takes place, growth measure increases very much.

(3) As for early period irrigation (early tillering period), it is less in available stem ratio and spike number, so that displays "Akiochi" (late degradation) appearance, perhaps owing to early declination of root vitality. In such a manner, it was 10% less in yied compared with the control, and even with divided application of nitrogen fertilizer, no compensation was possible.

(4) As for late period irrigation (maximum tillering period and spike differentiating period), it is superior in available stem ratio and spike number even of a little shortage in individual spike size and weight, so that over 10% more yield than the control, owing mostly to available turn of second degree stems.

(5) The longer under drained condition, the more NO_3-N differentiates. Nevertheless, in this apparatus it is not lost by rainfall or percolation. After irrigation, it may be lost by denitrification, but as for late irrigation, we suppose that rice plant may make use thereof in some high degree, also diminished in reduction.

(6) From investigation of young root in maximum tillering stage, deformation of parenchyma was more in irrigated division than the drained, perhaps owing to measure of oxygen supply.

(7) In field test, also late period irrigation was a little better. But no man may can say that in all cases under different conditions it is always same trend therewith.