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Agronomical aspects of rice quality in Hungary

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Abstract

Rice is traditionally cultivated as a flood-irrigated crop in Hungary. Due to different economical, agronomic and other reasons, the area of rice production have been continuously decreasing for many years. To maintain the former level of domestic production, new methods were also initiated to rice cultivation. During the last two decades a non-flooded rice production technology - named Sanoryza - was evaluated in Szarvas, Hungary. Genotypes were selected to irrigated upland condition. Water supply was based on sprinkler irrigation.

Besides the improvement of sprinkler irrigated rice production technology, comparison studies were also undertaken between the different cultivation practices. Agronomic and morphological studies were carried out to develop better understanding of some productivity and quality aspect of rice grown in lowland and upland conditions.

Keywords

-  Lowland / upland rice, sprinkler irrigation, Sanoryza
-  Hungaria

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In the 1980's rice growing area was between 11000-12000 hectare per year. Rice was produced in large farming units like state- and co-operative farms with 100 to 1000 hectare units. By this way half of the country's need had been provided, and the rest had been imported.

Fundamental political and economical changes - started in 1990 - has affected farming structure as well, the land privatisation introduced a new situation in the rice production. In the course of land compensation rice fields too had been divided amongst small holders thus rice growing in Hungary never been the same again. Cutting up most of the rice fields, growing production cost, insufficient capital for loans, shortage of technological know-how and other conditional difficulties resulted to the major set back we face today both in quality and quantity.

Most of the above mentioned problems had direct links to some agronomic disadvantages of rice fields during the last years, such as inaccurate levelling, inadequate crop rotation, insufficient chemical and water supply. To maintain or achieve the former level of domestic production, new methods of rice growing should also play role. Sprinkler irrigated production could be a practicable way of rice growing on some areas.

The effects of different agronomic/technological treatments on the performance of rice genotypes were studied during the last decade. The results of plot- and farm-experiments showed that some of the tested japonica genotypes were highly suitable for use in Sanoryza cultivation system. The best lines yielded between 4-6 t/ha, not less than the yield of traditionally practised flooded rice.

Studies were also done to determine whether differences in technologies correlated with any differences in development of rice.

Depending on the method and way of water supply, some of the plant and grain characteristics showed significant differences.

Milling quality was harder affected by the way of water supply and the tillering behaviour of rice in upland than in flooded conditions.

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