

Nearly 100 new and improved plant strains, including many basic food crops, developed here and abroad through mutation by radiation have been released for commercial use. Included are high-yield disease-resistant varieties. Development of still other new strains continues.

A good example of the new strains is Reimei, the highest yielding rice variety in Japan. This mutant contains twice as much protein as conventional varieties. Other important new rice varieties offer high yields, shorter growing periods, or both. One new mutant, discovered in Hungary, shortens the growing period by three weeks, a development that could expand the cultivation of rice in Europe.

Sonora wheat was developed in work supported by the Rockefeller Foundation. This new variety is high in protein, matures early, and produces short straw. However, it was not well accepted in some Indian communities until the strain was further altered to produce grain in the amber color to which the people were accustomed. Radiation treatment was used to gain this final refinement.

Closer home, at the University of Georgia in Tifton, a strain of pearl millet has been selected from radiation-treated materials which produces seed heads in 43 days instead of the usual 60. Breeding this characteristic into lines with other desirable features could result in an exceptionally useful crop plant, particularly in Africa and India. The AEC is supporting this joint project of the university and the U. S. Department of Agriculture. Although this millet is not yet in use commercially, it is expected to offer farmers hope for a crop where adverse weather conditions restrict the growing season.

Another example of a radiation-induced mutant is a castor bean with a drastically shortened maturity period. Farmers in India may now use a mutant seed that matures in 120 days instead of the usual 270; this gives a 150-day growing season, which would allow rice to be grown as a second crop.

An additional illustration of the usefulness of radiation-induced mutations is to be found in the peppermint crop in the United States. For 14 years growers fought a plant disease, *Fusarium* wilt, which threatened to wipe out the peppermint crop in this country. Recently a new strain was developed using neutron radiation treatment which is resistant to the disease and which retains the important flavor quality. No other plant-breeding method has been successful in producing a disease-resistant variety.