"Should I pay a premium price and buy pure seed, or should I hold on to that extra money?" This is a valid question—one which faces every rice grower when he prepares to purchase planting stock for his crop. He would find it less difficult to answer the question if it were asked in this way: "Should I buy pure seed, or should I risk planting rice which contains mixtures and noxious weeds, and which may not germinate well?"

The grower is thus faced with a decision which involves both the purity and the viability of the product he wishes to buy. And the wrong choice can affect the yield as well as the quality of the product he must eventually sell.

These are basic reasons for giving serious consideration to seed rice purchases, for insisting on seed which has varietal purity, good germinating capacity, and which is free of noxious weeds.

The Effect of Weeds

Few would dispute the statement that inferior seed is capable of introducing weed pests into "clean" (uncontaminated) land, or that a small infestation of weeds will quickly become widespread if not checked.

Consider also these effects of weeds on rice production:

1. They compete with rice for space, nutrients, water and light.
2. Present in sufficient quantity, they can cause lodging and uneven maturity of the rice crop.
3. They can make harvesting time-consuming and costly.
4. By depositing seeds or plant parts in the rough rice, they downgrade the sample and reduce its value.
5. Weed seeds high in moisture content make rice more difficult to dry, hazardous to store, more attractive to insects, more susceptible to attach by fungi.

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1/ Taken from The Rice Journal, October, 1970.

2/ Mr. Sonnier is an agronomist of the Louisiana State University Experiment Station, Crowley, Louisiana.
While these points make good argument for chemical weed control, they also emphasize the need for repeated use of pure seed rice. Herbicides have limitations in the types of weeds which they are capable of controlling, in the stage of weed growth during which they are effective, and in their residual action. For these reasons, pure seed must be used in order to take fullest advantage of weed control obtained by the use of herbicides.

Variatel Mixtures Are Costly

How serious are varietal mixtures? What can be done about them? The seriousness of such mixtures depends upon several factors, among them the concentration or amount present in the field, the variety being grown vs. the variety which constitutes the mixture, and finally, the purpose (i.e. seed or milling rice) for which the crop is being grown.

When numerous varietal mixtures appear in a field of rice it is seldom economical to remove them by roguing. If they mature later than the regular crop, the grain may enter the sample as green material or if very light and chaffy, it will tail over in the combine during harvest. In either case a substantial loss in either yield or quality may result.

There are sources of varietal mixture other than the planted seed. Seed rice regulations take this into account with small tolerances of other varieties in both field and laboratory tests, (certified seed). If the number of such plants is not excessive, they can be easily removed from a field during a routine roguing operation.

If anything good can be said about varietal mixtures, it is only this--it may be practical to remove them as cited above, and they usually affect only the immediate crop. Fallowing and recommended rotation practices will usually destroy volunteer growth prior to the succeeding rice crop.

Red Rice Is Big Concern

Perhaps the single greatest concern of the grower who is purchasing seed rice is that his product be free of red rice. He is wise in being cautious, because in red rice will be found the worst features of noxious weeds and varietal mixtures. As with other contaminants, seed rice is not the only source, but it is a common one; one which bears close watching. Contrary to ordinary varietal mixtures, red rice through seeds which shatter, can perpetuate itself in rice land even during idle years, without benefit of irrigation water or fertilizers. It can readily be seen, then, that unlike ordinary mixtures, red rice, unless rigidly controlled, will affect not only the immediate crop, but future crops as well.

The grower who is convinced of the value of pure seed finds that he must make still another decision. "How pure should my seed be?", sums it up. A practi-
cal answer to this question is, "As pure as your farming operation justifies."
To the rice producer who is farming "new" land, the use of registered seed is well justified. To the producer who is striving to "clean up" old rice soils, the use of pure seed may not seem to be so important. He may reason that it is not practical to invest extra money in pure seed to be used on land which is known to be contaminated with noxious weeds. But, in fact, pure seed rice is a tool which can aid the farmer greatly in the cleanup operation. While it may be impractical for him to invest in registered seed, he might well consider using certified seed rice for several crop cycles.

Pure Seed Is A "Tool"

Pure seed is, then, a cultural tool, which can help the rice producer to harvest rice of higher quality. However, he will get maximum benefits from pure seed only if he uses it in a program which includes other good cultural practices. It is essential that drill boxes, truckbeds, harvesting equipment, and other sources of seed mixture be cleaned carefully to prevent contamination. On-the-farm drying and storage installations must be thoroughly cleaned in order to avoid post-harvest mixtures, and to minimize insect injury to the incoming rice. Observing these common sense rules will assist the grower in making good use of pure seed. Failure to do so may well result in money and effort wasted.

As a cultural tool, pure seed differs from any other that is available to the rice farmer. Depending on conditions in a given year, he may see fit to eliminate or modify an accepted practice. For example, the grower would not apply 2, 4-D to growing rice unless broadleaf weeds appeared in appreciable numbers. He might chose to reduce his fertilizer application if soil tests so indicated.

But if pure seed rice has helped him to improve or "upgrade" the quality of his rice, he should not consider using anything less than pure seed for his next crop or for any future crop.
PURE SEED IS A "CULTURAL TOOL"

BY

EARL A. SONNIER
PURSE SEED IS A "CULTURAL TOOL"\textsuperscript{1/}

Earl A. Sonnier \textsuperscript{2/}

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