

Mixed Cropping in Dry land Maize

AMEF Foundation is born out of a concern for ecological agriculture. Embedded in this concern are the livelihood improvements and ecological balances. Choosing to work with resource poor families in fragile ecosystems of dry farming, AMEF seeks to enable them to generate and adopt alternative farming practices, that are acceptable and affordable.

Sustainable agriculture (SA) in dry lands requires adoption of a bunch of practices pertaining to rainwater conservation, soil fertility improvement, diversified crop production systems, along with rebuilding of environmental support.

Over the years, AMEF has found certain alternative farming practices highly accepted by farmers. Such practices are considered here as Good Agriculture Practices eligible to be widely disseminated. **This good agricultural practice pertains to crop management through mixed cropping in Maize.**

AMEF firmly believes that while farmers alone are the practitioners of these options, as end users, there are several agencies working with them as enablers. This brief seeks to help the enablers to promote SA in their specific context.

Maize (*Zea mays*) is the predominant crop grown by the farmers in dry lands of Southern India. Intensive practices like growing hybrids and high yielding varieties are leading to rapid nutrient depletion. With mono-cropping system and adverse climatic conditions, farmers face the risk of crop failures and losses in income.

Traditional practices like intercropping with legumes, strip cropping and border crops have been disappearing, due to many factors, in the post-green revolution period. Adopting suitable alternative cropping practices is crucial to improve the livelihoods of dry land farmers. One such practice, mixed cropping in maize is becoming popular among the farmers of Tamil Nadu in Southern India.

Over seven to eight intercrops are used in maize as alternative cropping practices. Farmers grow red gram (*Cajanus cajan*) with maize in the ratio of 1:8 to 10 rows besides lablab (*Lablab purpureus*), green gram and cowpea (*Vigna unguiculata*). Castor (*Ricinus communis*) and sun hemp (*Crotalaria juncea*) are grown on the border of the field. Alternatively, fodder sorghum (*Sorghum bicolor*) is sown as border crop. Farmers include vegetable crops like brinjal, onion, cluster bean, bitter melon, okra, etc in the available gaps in maize cropping system. Farmers follow east-west direction in sowing to utilize the sunlight effectively and avoid shade effect on crops.

Nutritional security and income

Farmers select these crops for mixed cropping based on the criteria like root system, nutritional requirement and crop duration for compatibility. Red gram and vegetables fulfill the nutritional requirement of the family adding the dimension of nutritional security, especially for women and children, of poor farmers. Legumes like green gram and cowpea are short duration crops and fix nitrogen from the atmosphere enhancing the soil fertility status. Fodder is used for feeding their livestock.

Farmers are realizing the income benefits from the intercrops grown with maize. They are able to obtain 100 kg of pulses like red gram, cowpea and lablab, 100 kg of castor and 200 kg of fodder sorghum per acre. It has added to the income both directly, by selling surplus and indirectly, as their external purchases are reduced. Farmers believe that the intercropping is helpful as buffer to escape the risks of climate adversities.

Mixed cropping practices are followed in other dry land crops in southern India, as well, as part of ecological agriculture approach. The practice contributes to soil health and livelihood security of the resource poor farming communities under these conditions.

AME Foundation promotes alternative cropping practices in dry land crops through group approach for crop resilience and better handling of natural resources to improve their farm incomes.

Limitations

Sowing of mixed crops is difficult with machinery as the requirement of crops varies in spacing and sowing depth. Farmers using draught animals for field operations find it easy to practice mixed cropping practices.



Red gram in Maize

What they say....

We should be proud to have AMEF in Dharmapuri for its wider approach and experience in dry land agriculture. The LEISA articles are delivering more experiences worldwide. As a resource organization, AMEF is having lot of scope in the district.

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