

Shelter belts may not be enthusiastically adopted by farmers unless some steps can be taken to relieve farmers' fears that the trees would serve as nesting sites for birds. Birds are a serious pest in this area, especially for millet. One way of dealing with the problem would be to introduce bird resistant varieties of millet and sorghum in conjunction with shelter belts. These varieties have long bristles protruding from the heads. Some of these varieties already can be found in some farmers' fields, however, they are recognized to be lower yielding. If higher yielding varieties of this type could be made available, farmers reluctance to plant trees next to their fields would be lessened.

B. Pests and Diseases

Crop pests are a significant problem which contribute to the low yields characteristic of farmers' fields in this area. Millet has the greatest number of pests of all the crops grown. Some of the major millet pests as well as those which attack other crops are listed below.

Millet - santa (*Cyrtocamenta* spp.), quelea birds, nafaasha (*Eulemna brachygonia*), abu dagiig (a type of moth), jiraad (locusts), joraan (a small black beetle), direena,⁹⁶ buuda (striga), downy mildew and long smut.

Sesame - joraan, ra9uuma, (caterpillar), surfa (millipede), jiraad, ants and termites.

Sorghum - quelea birds, jiraad, joraan, long smut, and buuda.

Groundnuts - surfa, ra9uuma, termites, crows, rats and ground squirrels.

Compensating Strategies

1. Farmers plant their millet early (May or early June) so that it reaches maturity before the peak seasons of major pests like santa and quelea birds (late August through October). One serious consequence of this strategy is that early-planted millet does not always germinate, so replanting is often necessary.
2. Several techniques are employed by farmers for combatting quelea birds, such as: (1) small children carrying noise makers through the fields; (2) farmers erecting "scare quelea bird" figures in their fields; and (3) farmers getting together and destroying any bird nests they find in trees adjacent to their cultivation areas. None of these methods is very effective in controlling the birds. (3) Farmers rotate their crops in a field from one year to the next. For instance, if they planted millet in a field this year they often plant sesame in it the following year. This strategy helps lessen the danger of a major pest build-up year after year in the same field.

⁹⁶Direena (small beetle) is a bug which attacks millet and sorghum stored in sacks.