Introduction
Maize yields are low (1.5 t/ha) and could be increased by 50% with the use of improved maize varieties. Farmers are reluctant to use modern varieties, as they are weevil susceptible.

Seeds of Life has begun regular evaluation of weevil tolerance as well as yield performance of approximately 20 introduced populations across four diverse locations. This paper shows the results of the first year of testing, for the 2004-2005 cropping season.

Methods
Weevil damage and sheath tightness of 21 maize populations were measured 9 months after the 2004-2005 season’s harvest. These included 3 local populations, and 18 introduced populations sourced by Seeds of Life from Indonesia, CIMMYT (India) and CIMMYT (Zimbabwe).

The populations were grown in four diverse locations, representing different agro-ecological zones. At harvest, yield was estimated from the centre four rows of the plot then 20 cobs were taken from the outer 2 rows of each plot, and stored for 9 months as whole cobs in the sheath in open polybags, in a rat-proof environment.

After 9 months, cobs were separated into loose and tight sheaths at the end of the cobs. Cobs were then opened and scored for the percentage of grains with evident weevil damage.

Results & discussion
Maize variety and test location had a large and significant (P<0.05) effect on the level of weevil damage. The ranking of varieties was similar in each of the 4 test locations.

Although there was a weak positive correlation between weevil damage and yield (Figure 1), there was a large range of weevil damage levels among the high-yielding populations (those yielding at least 50% above the local checks). One population from Zimbabwe had a high yield (over 50% above the local populations), and weevil damage at a similar level to the local populations.

Weevil tolerance was associated with tight sheaths on the cobs nine months after harvest (r²=0.66). All three local populations had more than 60% tight sheaths, and low level of weevil infestation. Many of the populations from Zimbabwe had a lower percentage of tight sheaths than the local populations, but had a similar level of weevil damage.

Conclusion
Yield of newly introduced maize populations in East Timor is not correlated with weevil tolerance.

Some newly introduced maize populations from CIMMYT Zimbabwe, yield 50-60% above local populations, and are also resistant to weevil damage, similar to local populations.

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