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SOURCES OF RESISTANCE TO THE MAIZE WEEVIL, SITOPHILUS
ZEAMAI MOTS, IN 1511 CULTIVARS OF SORGHUM

by

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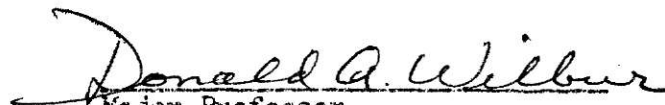
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INTRODUCTION

It is thought that sorghum originated in east-central Africa and was probably one of the earliest plants to be domesticated. Today grain sorghum is grown extensively in Africa, India, China, Manchuria, and the United States and to a lesser extent in other areas for human and livestock consumption.

Everywhere it is attacked by insect pests in the field and in storage. Total loss of the world production of cereals due to storage insects has been estimated to be as high as 10%. Among these storage pests, the maize weevil, Sitophilus zeamais, is one of the most destructive.

The female weevil eats a small hole in the kernel, lays an egg in it and plugs the hole with a gelatinous secretion. A small larva hatches from this egg and develops through four instars and a pupal stage inside the kernel before emerging as an adult.

Control is usually accomplished by either chemical treatment, sanitation or physical treatment such as cooling or heating. Chemical treatment is costly and there is a risk of residual contamination. Sanitation and physical treatment involve much time and often are not effective. If varieties were available to growers that were resistant to weevil attack, a cheap and easy method of control would be provided. This would be especially valuable in developing countries where the cost of other methods of control would render them prohibitive. In developed areas such as the United States, resistant varieties would also be very worthwhile since stored grain has a low profit margin and very little money would have to be spent on pest control.