

JOURNAL OF  
**Agricultural  
and Food  
Chemistry**

July 1958

Volume 6, No. 7

APPLIED JOURNALS, ACS

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## Tipping the Balance

A MAJOR OUTBREAK of grasshoppers in Colorado, Kansas, and three other states in the Southwest has pointed up once again the immense economic importance of modern pesticides. It points up, too, the futility of depending on natural checks and balances for insect control.

In Colorado alone, according to that state's Commissioner of Agriculture, the infestation had extended by mid-June to more than 10 million acres in 21 counties, and at that time it was still spreading. Through what means other than spraying with effective modern insecticides could man hope to halt this costly plague, and save the crops of wheat, forage, and rangeland grasses that have barely been re-established where drought and dust brought devastation a bare two years ago?

It is remarkable, and a tribute to modern agricultural chemistry, that man can now size up the most destructive grasshopper outbreak in decades and determine that a properly directed spraying program, based on chemicals that were unknown 20 years ago, can check the infestation in its tracks, and prevent its spread to adjoining areas. By the end of June, in fact, good progress against the attacking grasshoppers was reported, and the control program was rapidly gaining momentum. Thus no longer is there a question as to what effective action can be taken to cope with insects. The question now is "How much will it cost, and who is to put up the money?"

The cost of control measures, to be sure, will run in this case to millions of dollars. But even this cost is small in comparison with the value of the crops at stake: an estimated \$110 million for the wheat crop alone on the plains of eastern Colorado; additional millions for the hay crop needed to carry cattle through next winter. The alternatives are almost certain destruction of the grain and forage crops under attack, extreme economic losses for those growers whose lands are hardest hit, and doubtless some further increases in super-market prices of meats and other foods for millions of housewives (or husbands).

Just what would happen if there were no aldrin, or any other suitable insecticide that could be quickly and safely applied to stop the grasshopper attack? In time, no doubt, Nature's forces would bring the depredations to a halt. But by that time losses in crops, livestock, and other forms of plant and animal life would doubtless be staggering. And it is quite possible that severe deprivation—even starvation—would be the lot of part of the nation's human population. It has happened in other lands, even in very recent times.

In reality, it is nonsense to talk of natural checks and balances in a highly developed agricultural region. For on the day that man began to cultivate the land and raise crops to feed his growing numbers, the possibility of true natural balance was destroyed. Man's efforts to feed his own kind in ever larger numbers and at higher nutritional levels lead always in the direction of more intensive agricultural production. But the very steps that are taken to serve man's needs serve also, for the most part, the biological needs of insects and other enemies of man. Broad fields of lush, high-yielding crops are surely as attractive to hungry bugs as to hungry men.

So long as man seeks to maintain or improve his status through control of his environment, he must fight his natural enemies—whether they be insects, weeds, wild animals, or disease—through every means at his disposal. And until he is ready to revert to his aboriginal state, and settle for the nuts, berries, and other delights that a relatively unproductive Nature would yield without his aid, he might as well forget natural balance as the single answer to his pest control problems.