

1983 SUNFLOWER MIDGE SURVEY

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The sunflower midge, *Contarinia schulzi* Gagne', has been a serious though unpredictable pest of cultivated sunflower in the Red River Valley since 1971. It was first observed as an economic pest in southern Norman and northern Clay counties in Minnesota and in southern Traill and northern Cass counties in North Dakota. This area has remained the epicenter of the midge population which has now been found throughout the Red River Valley of the North and in areas outside the Valley in Minnesota and occasionally, South Dakota.

In 1981 NDSU entomologists determined the range and extent of damage by the sunflower midge. This survey was concentrated in the midge-affected areas of North Dakota and adjacent Red River Valley areas in Minnesota. In 1983 entomologists from Agriculture Canada, University of Minnesota, North Dakota Department of Agriculture and South Dakota State University cooperated with NDSU entomologists to expand the surveyed area and examine their respective states or provinces for sunflower midge-damaged fields (Kopp and Busacca, 1983). The 1982 and 1983 surveys were conducted in the same manner. Fields were examined for midge damage and scored on the basis of whether midge damage was present or not and how extensive the damage was. Damage was scored as light if only a few plants were affected near the margin of the field, moderate if damage extended up to 100 feet from the margin and heavy if damage extended beyond that point.

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Results

The 1983 survey indicated that midge damage was less severe than in 1981 or 1982 (Figs. 1 and 2). Fields with moderate to severe damage were found only in two areas. The first area was found along a line and 12 miles either side of the line from Mayville, ND to Felton, Minnesota. The second area extended along a line and 20 miles either side of the line from St. Vincent, Minnesota to St. Adolphe, Manitoba, Canada. Within these two areas, fields could be found with moderate to severe damage but they were found much less frequently than fields in the same area with light damage.

The area where midge has been found is expanding slightly. Some of this apparent range extension may be the result of more intensive survey procedures this past year. Minnesota entomologists feel that the sunflower midge can be found in most sunflower growing areas of that state. In most of these areas, though, midge damage was light and resulted in very little, if any, reduction in yield.

The range of the midge has expanded west in North Dakota. The westward movement has been slow thus far, and most of the range extension occurred along the northern half of the midge range in Cavalier, Walsh and Nelson Counties. As in Minnesota, most of the damage in these areas was light or barely detectable. Canada also experienced a range expansion this past season. The midge did not move northward but did expand to the east and west throughout its Canadian range. Losses due to the midge were greater in Canada than in either North Dakota or Minnesota.

Even though the range of the midge has expanded in the last two years, the yield lost because of midge damage has decreased. We did not see damage in 1983 that was in any way comparable to the extensive losses of 1981. Severely damaged fields were rarely found in 1983 where in 1981 they were very common in several areas near the Red River.

The midge population has decreased in the last two years but must still be considered a potential problem. Favorable environmental conditions and large sunflower acreage in areas where midge have previously caused damage may allow this pest to become a significant pest again. The way to minimize losses due to

midge is to utilize hybrids which are least susceptible to midge damage and to plant as late as possible in order to avoid the heaviest populations of adult midge.

REFERENCES

1. Kopp, D.D. and J.D. Busacca. 1983. Sunflower Midge — 1982. ND Farm Research Bimonthly 41(2):3-4.

