

ECONOMIC ASPECTS OF HAIL IN NORTHERN NORTH AMERICA

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ABSTRACT

Hailstorms constitute only a minor element in the climatology of northern North America because of (1) their low frequency of occurrence, and (2) the comparatively small acreages of damageable crops. That they do however, present a formidable local hazard to many agricultural communities, particularly of southern Canada, is evidenced by the measures which are taken to alleviate their damaging effects.

Data obtained by personal correspondence with various observers of the Canadian Meteorological Service point to three conclusions concerning the time-areal distribution of hail in Canada: (1) Hail in coastal British Columbia shows a late winter and spring maximum, indicating marine west coast influence. (2) Hail in interior provinces shows a maximum in the warm period, indicating strong influence of the continental location. (3) Terrain plays a discernible role in hailstorm genesis in many instances.

Hailstorms produce considerable damage, especially to wheat, in the prairie provinces and to tobacco and fruit in the Ontario Peninsula. Three types of insurance institutions (Canadian share companies, Canadian municipal insurance associations, and foreign companies), licensed to conduct business in Canada, ameliorate the conditions attendant upon hail loss.

In higher latitudes, hail occurs more frequently than was formerly believed, although it is doubtful whether all of the so-called hail in these latitudes is actually hail as it is correctly defined. It is probable that snow pellets (graupel) are sometimes recorded as hail. Statements by United States Weather Bureau observers in Alaska bear this out.

Most weather bureau stations in Alaska record one to four hailstorms each year. In the majority of cases hail accompanies frontal thunderstorms, although occasionally it is the concomitant of rather weak heat-convective thunderstorms which occur in the interior in summer. Hail occurs at all elevations ranging from sea level to considerable altitude.

Hail is rarely destructive in Alaska owing to the infrequency of its occurrence, to the small size of hailstones, and to the paucity of agricultural crops. Occasionally, however, fruit, garden vegetables, and crops are severely damaged by this phenomenon even as far north as the Arctic Circle.