Hein, Gary L.[1]*, and H. Randy Lawson[2], [1]University of Nebraska Panhandle Res. & Ext. Center, 4502 Ave. I, Scottsbluff, NE 69361, [2]Chadron State College, Dept of Biology, Chadron, NE 69337. Seasonal movement of sugarbeet root aphid from eastern Wyoming into western Nebraska sugarbeet fields.

ABSTRACT Studies were undertaken to determine the seasonality and the possible source of the sugarbeet root aphid migration into western Nebraska. Sugarbeet root aphid populations were monitored for three years on over wintering narrowleaf cottonwood hosts in eastern Wyoming. These narrowleaf cottonwood hosts were the closest narrowleaf cottonwoods to the sugarbeet growing areas in western Nebraska. In addition, the movement of aphids into sugarbeet fields in western Nebraska was monitored with yellow water-pan traps.

The results indicate that alate sugarbeet root aphids begin to emerge from galls in narrowleaf cottonwood trees in early to mid June. By mid-July all aphids have left the galls. The aphids developing in the sites sampled are probably the first alate sugarbeet root aphids to develop in the area because these trees are at about the lowest elevation that narrowleaf cottonwoods are found (ca. 1200m). Therefore, aphids growing at higher elevations may develop later because of cooler temperatures at the higher elevations. Using yellow water-pan traps, alate sugarbeet root aphids were found to be entering sugarbeet fields in late June and early July. Because of the low density of alate root aphids moving into these fields and/or poor trap efficiency, limited spring migrations were detected. However, enough alates were trapped to indicate the presence of alates moving into the fields and the approximate timing of this movement. In each year, we observed substantial root aphid populations on susceptible sugarbeet varieties in the Scottsbluff area (ca. 100km away from the sampled narrowleaf cottonwood sites). These populations were found in areas with low potential for aphids over wintering in the soil and no aphids were observed over wintering in these soils. Higher trap catches were observed for the fall flights, with a more concentrated alate population leaving the sugarbeet fields. The fall flight began in late August and continued through the fall into November with peak flights in late September and early October.