Chapter IV

EXPERIMENTAL RESULTS

From Chapter III the experimental results of calibration of orifice and of Sec.3.2.1 and Sec.3.2.2 are shown by graphs on page 38 to 59

Fig. 4-1 is the calibration curve for orifice meter. The air flow rate at a flowing condition with a known pressure drop across the orifice can be obtained by this graph.

Fig. 4-2 is the typical curve of flow rate of air V.S. pressure.This graph shows the relationship between the flow rate of compressed air at the standard condition and the regulated pressure of the compressed air.

Fig. 4-3 to 4-6 show the vacuums in Cyclones for constant Cyclone angles and heights. The results are obtained from Table C-2 to C-21.

From Fig. 4-3 to 4-6 at each constant of the compressed air supplied-Q_1, of 275, 375 and 475 Lit/min - the vacuum produced at each Cyclone can be read and the results are plotted in Fig. 4-7 to 4-10. These graphs show that the maximum vacuum in Cyclones with different Cyclone heights occurs at Cyclone angle 6°.

Fig. 4-11 to 4-15 were obtained by means of Fig. 4-3 to 4-6 . These graphs show the variation of the vacuum produced in Cyclones when the Cyclone heights are changed.

Fig. 4-16 to 4-19 show the rate of suction air into the Cyclones with variable Cyclone angles and heights. The results are obtained from Table C-2 to C-21.

Fig. 4-20 to 4-22 show the conveying capacity of Cyclones. The results are obtained from Tables C-22 to C-24.

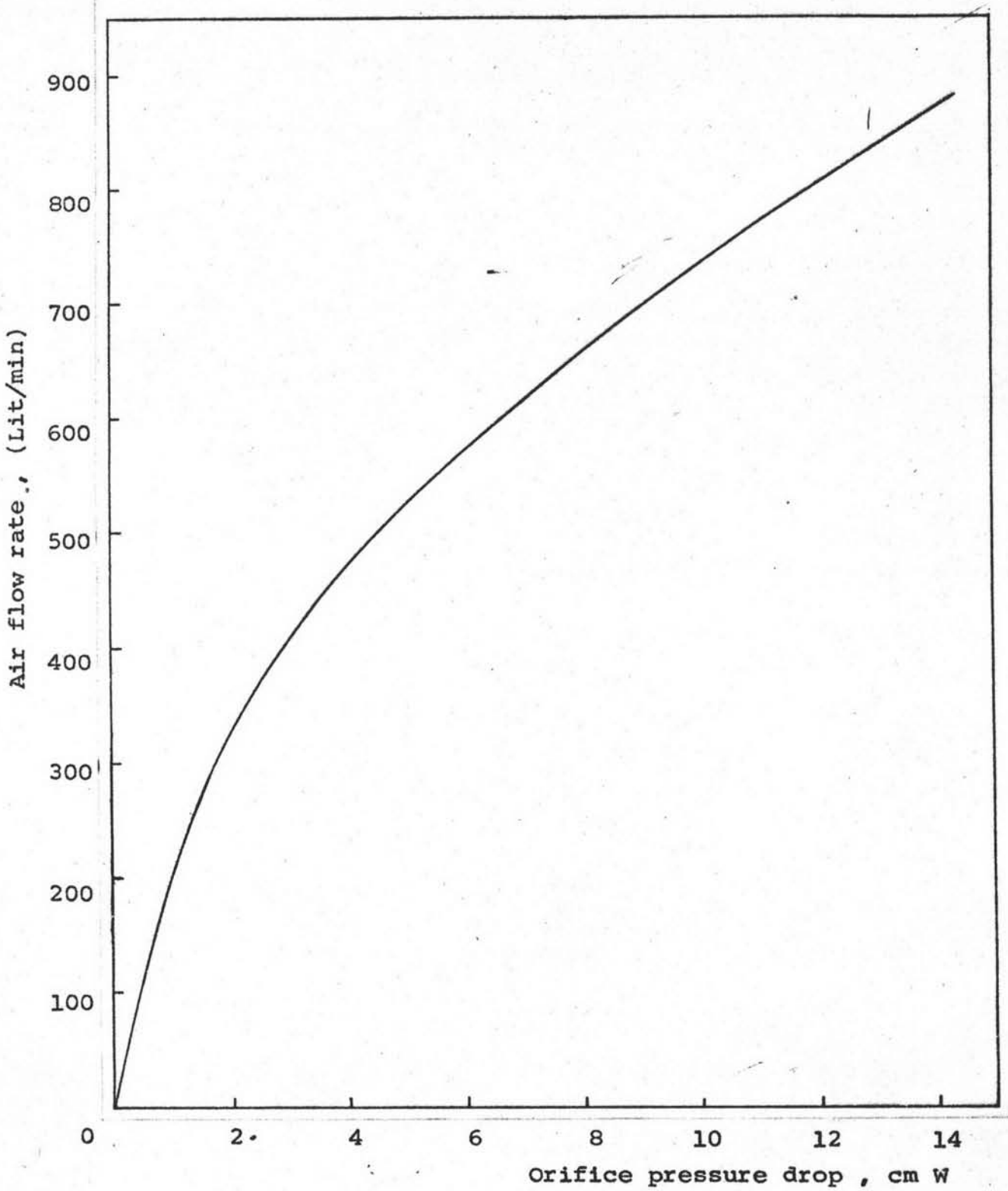

Fig 4-1 CALIBRATION CURVE FOR ORIFICE METER

(AT FLOWING CONDITION)

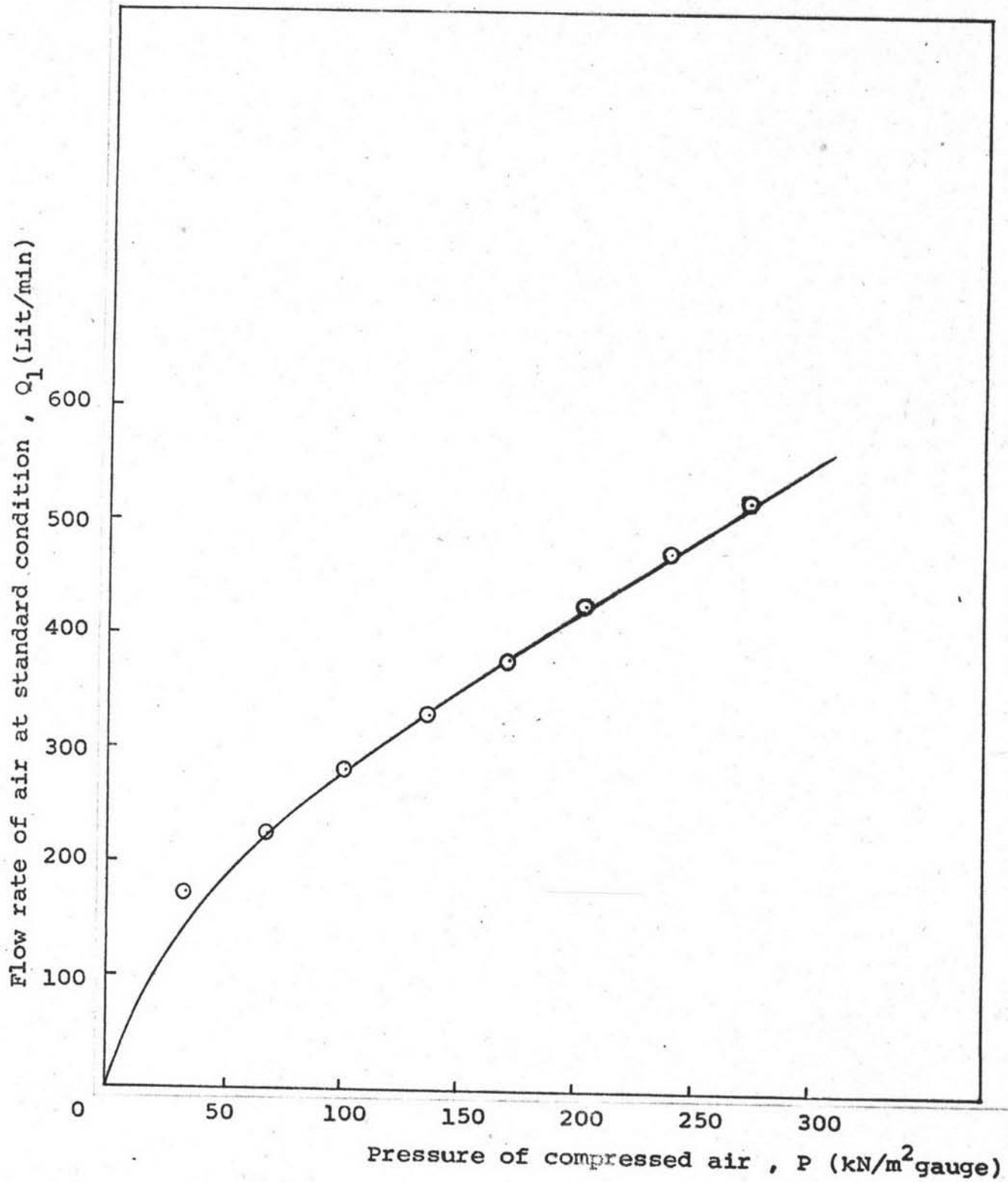

Fig. 4-2 TYPICAL CURVE OF FLOW RATE OF COMPRESSED AIR V.S. PRESSURE (DATA OF CYCLONE NO.3)

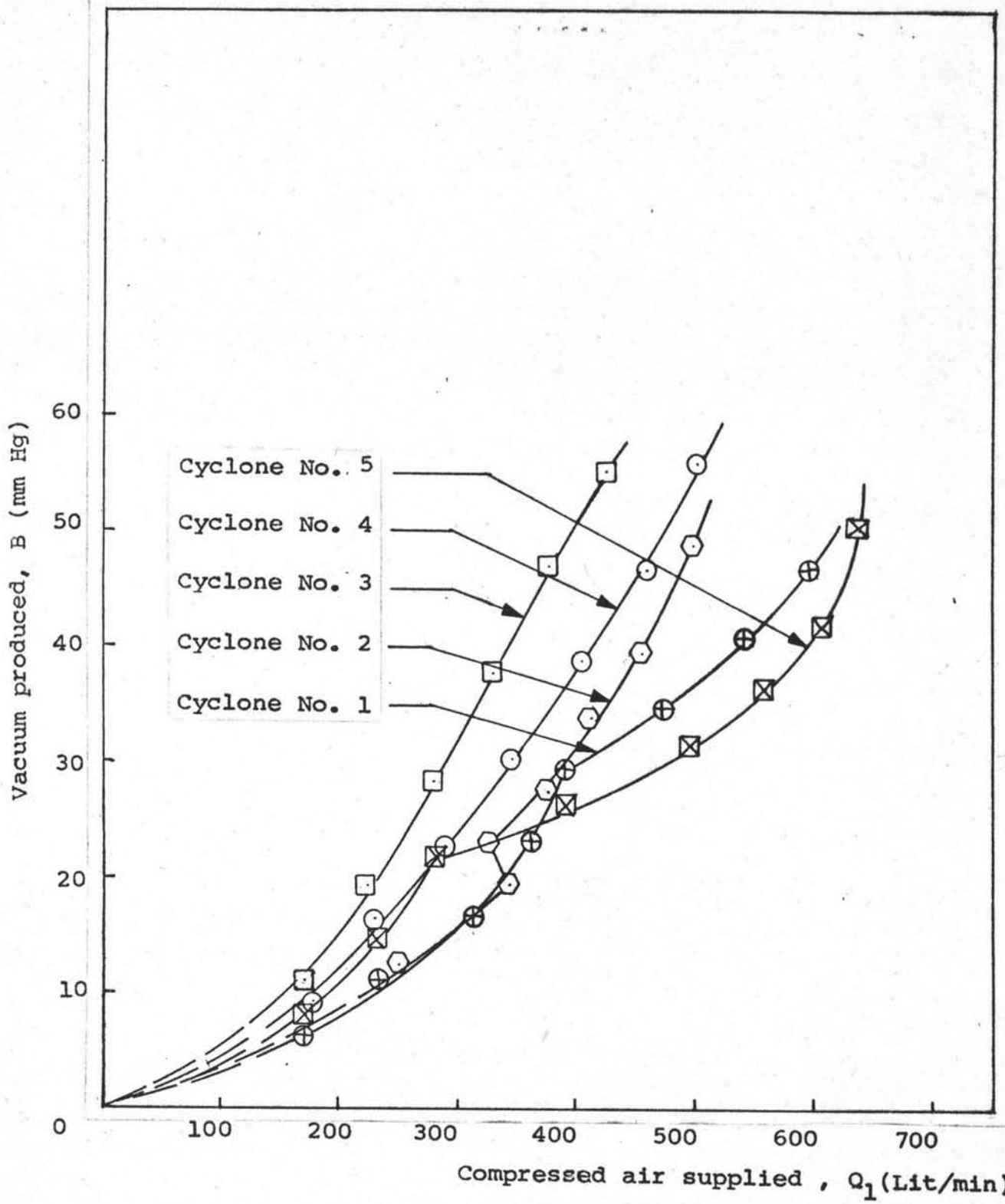

Fig. 4-3 VACUUM IN CYCLONE FOR CONSTANT CYCLONE ANGLES AND CYCLONE HEIGHT, H = 7.5 cm

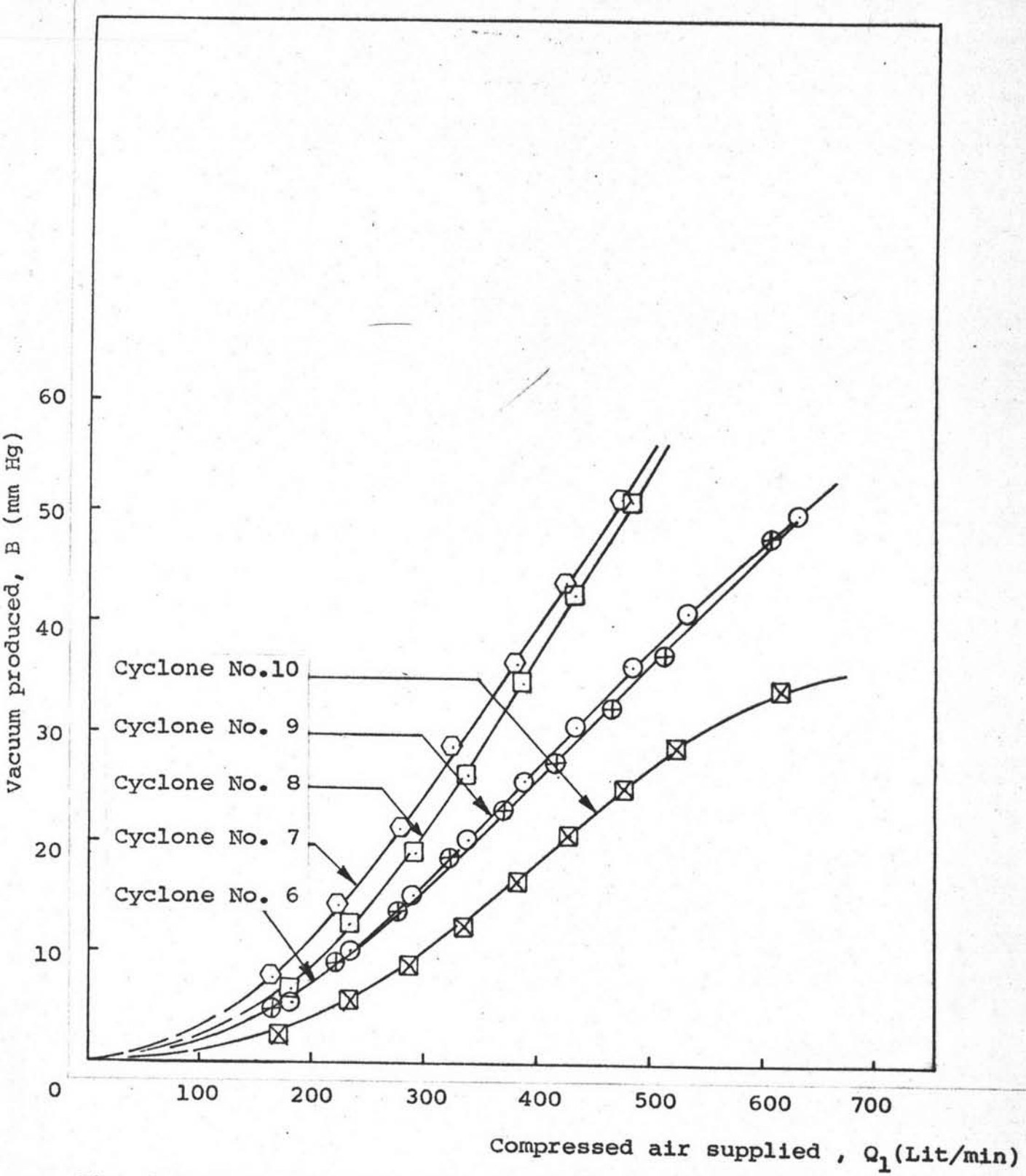

Fig. 4-4 VACUUM IN CYCLONE FOR CONSTANT CYCLONE ANGLES AND HEIGHT, H = 15 cm

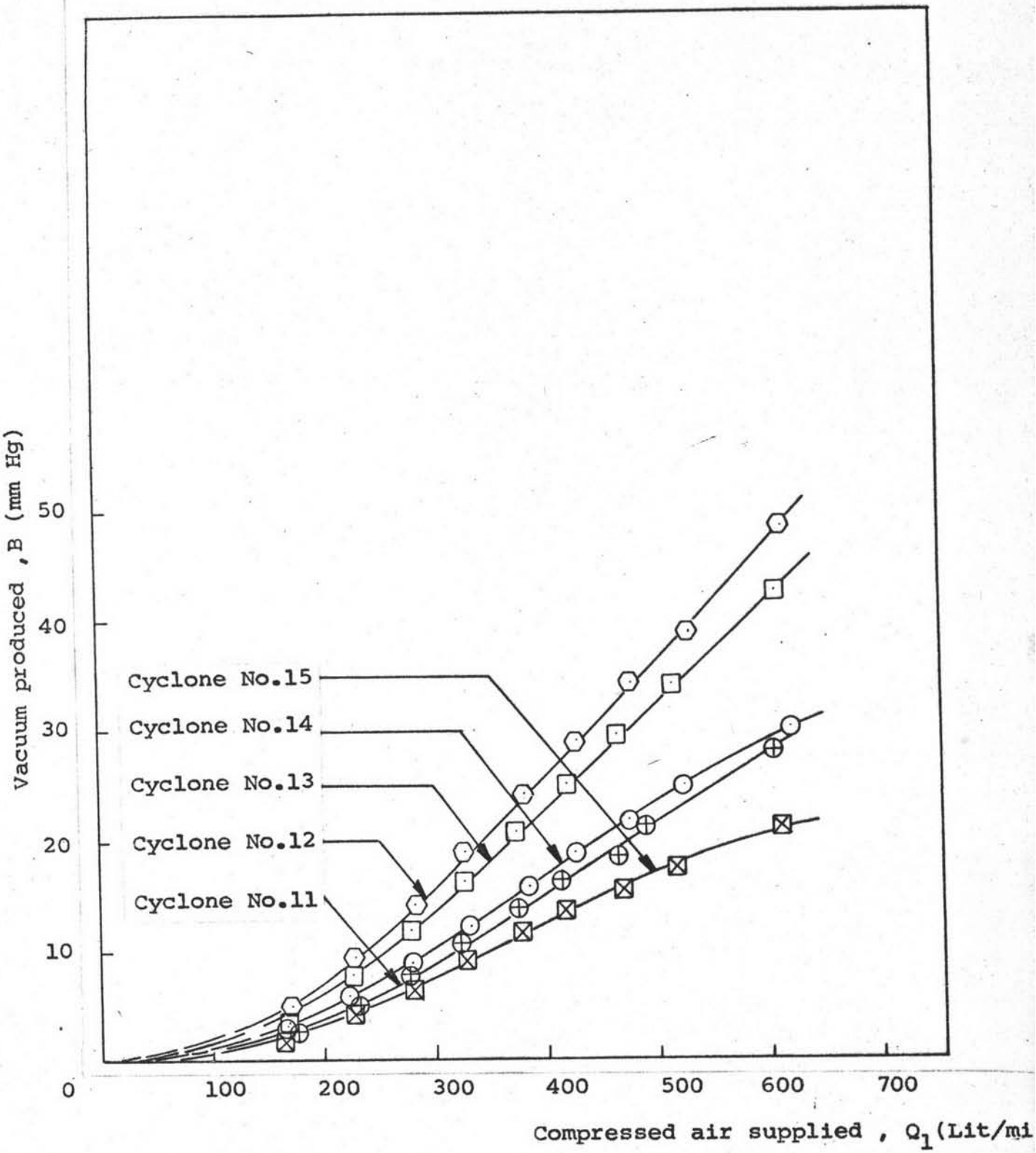

Fig. 4-5 VACUUM IN CYCLONE FOR CONSTANT CYCLONE ANGLES AND HEIGHT H = 30 cm

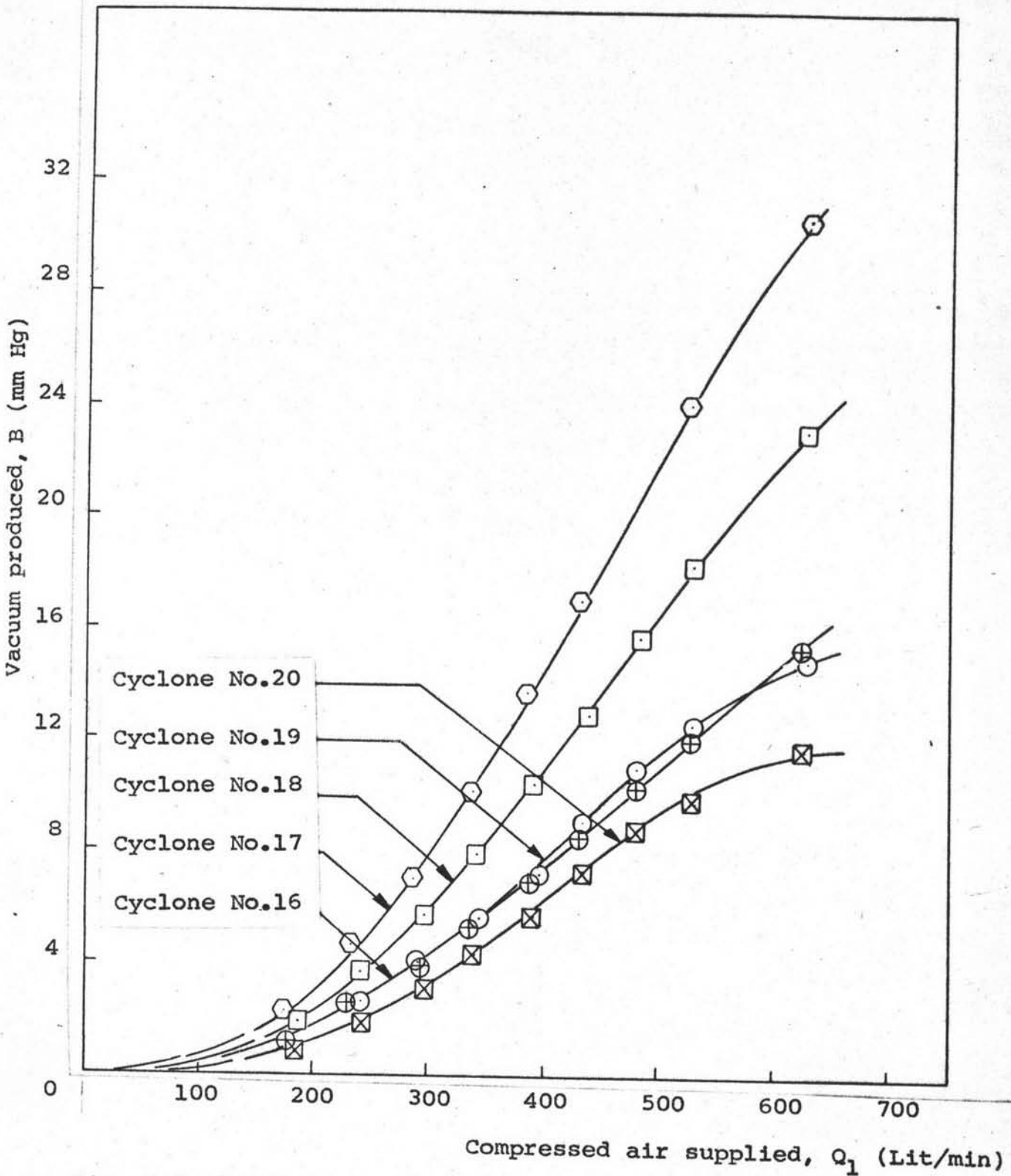

Fig. 4-6 VACUUM IN CYCLONE FOR CONSTANT CYCLONE ANGLES AND HEIGHT, H = 45 cm

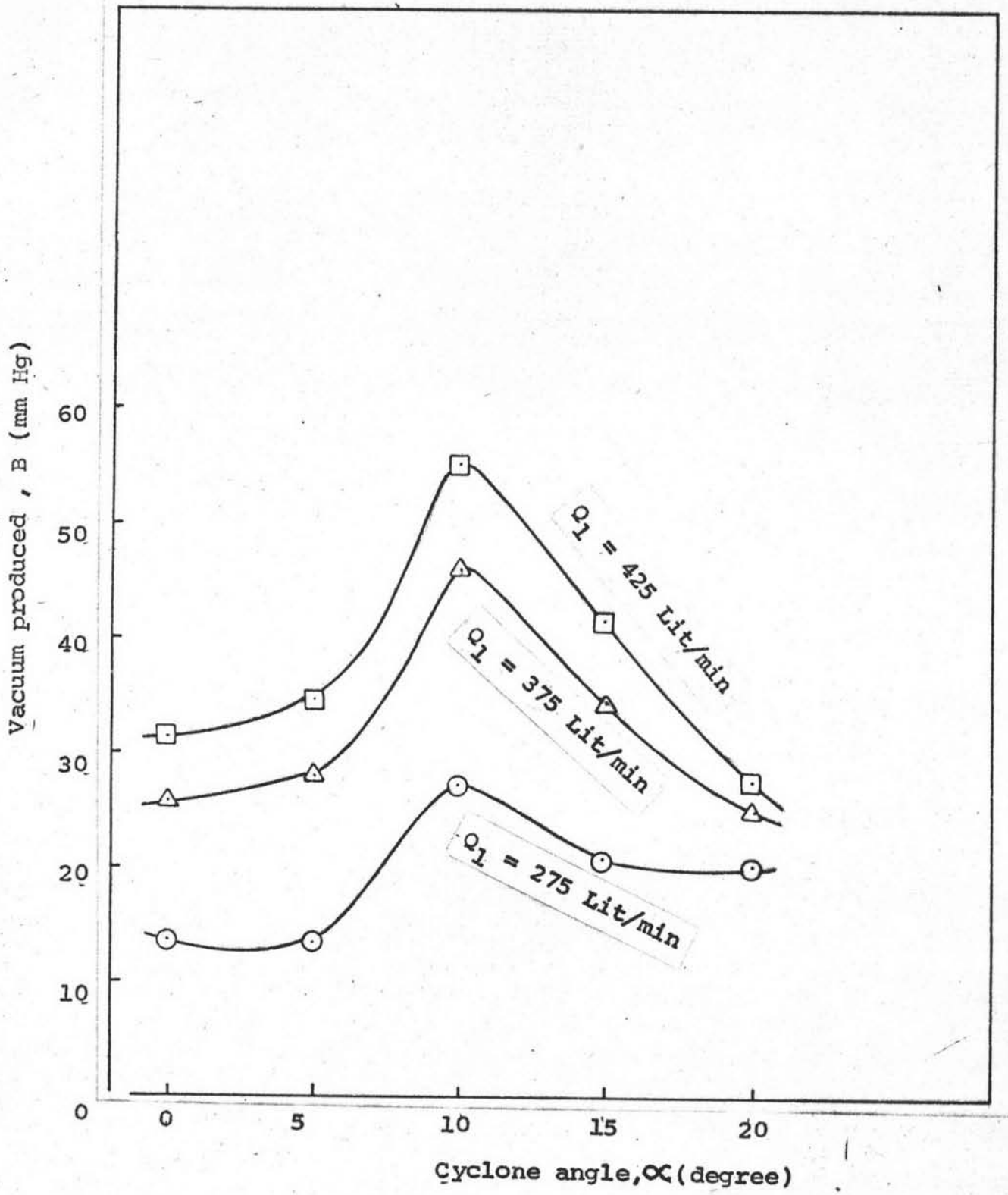

Fig. 4-7 MAXIMUM VACUUM PRODUCTION IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE HEIGHT , H = 7.5 cm

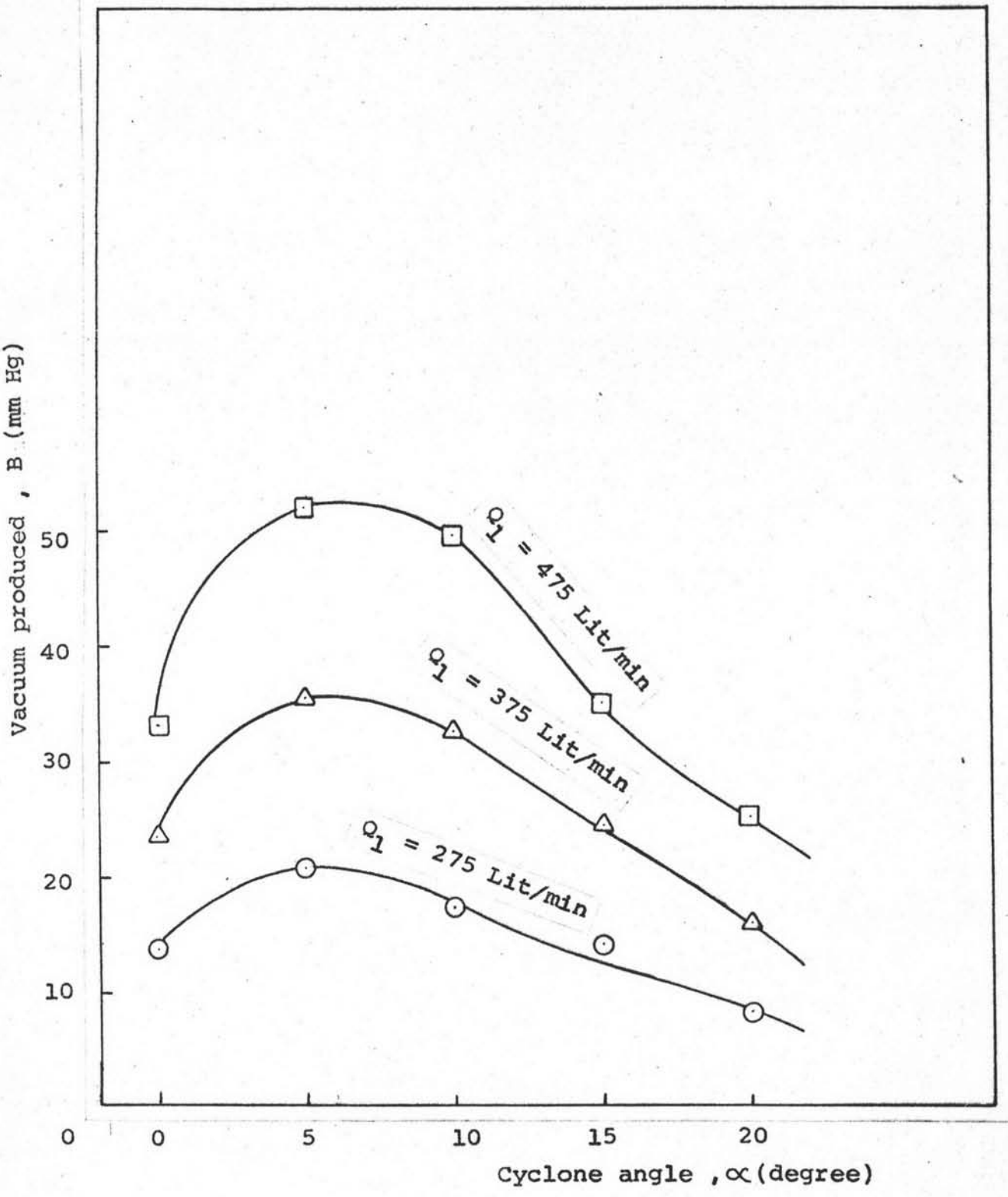

Fig. 4-8 MAXIMUM VACUUM PRODUCTION IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE HEIGHT , H = 15 cm

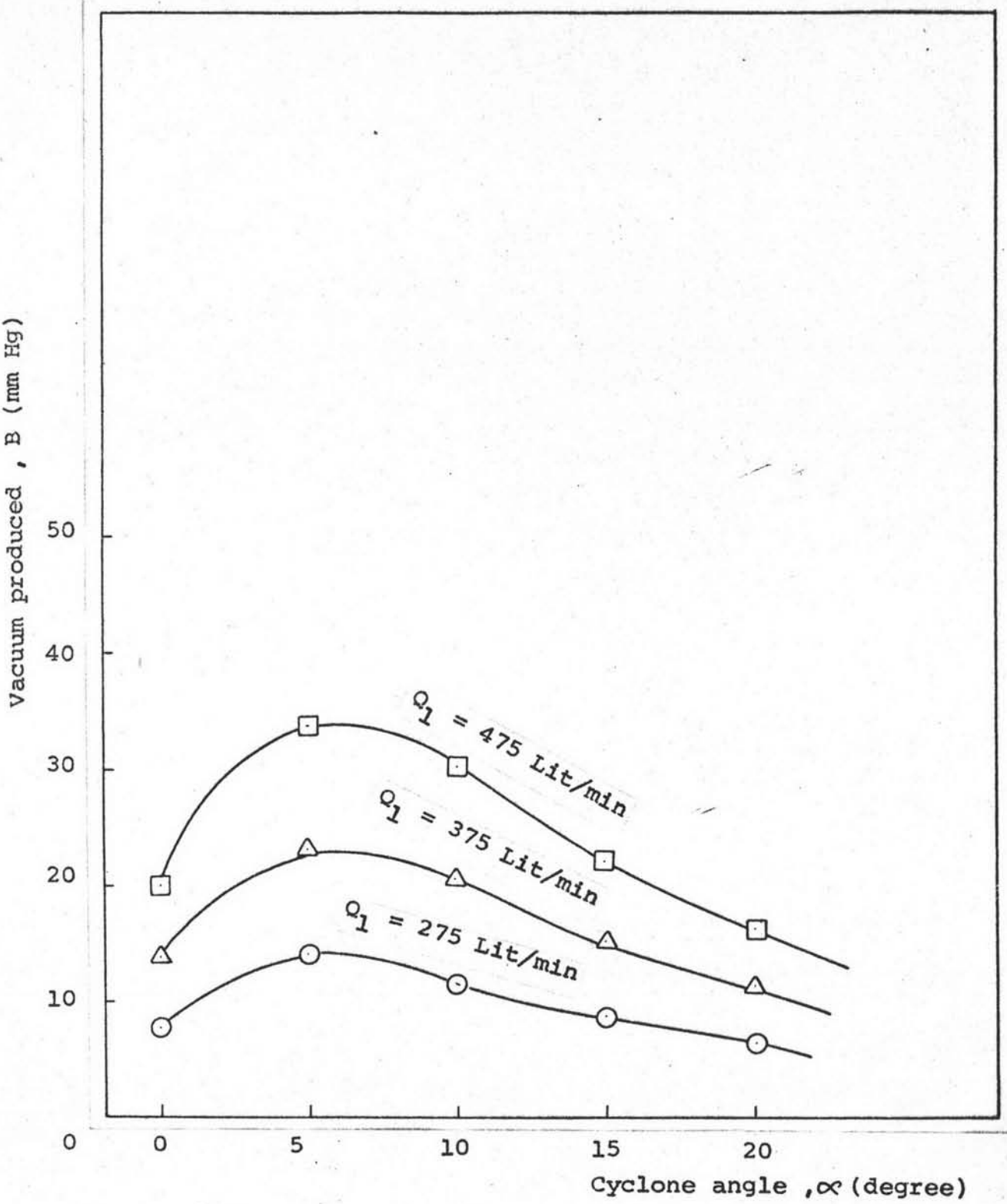

Fig. 4-9 MAXIMUM VACUUM PRODUCTION IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE HEIGHT , H = 30 cm

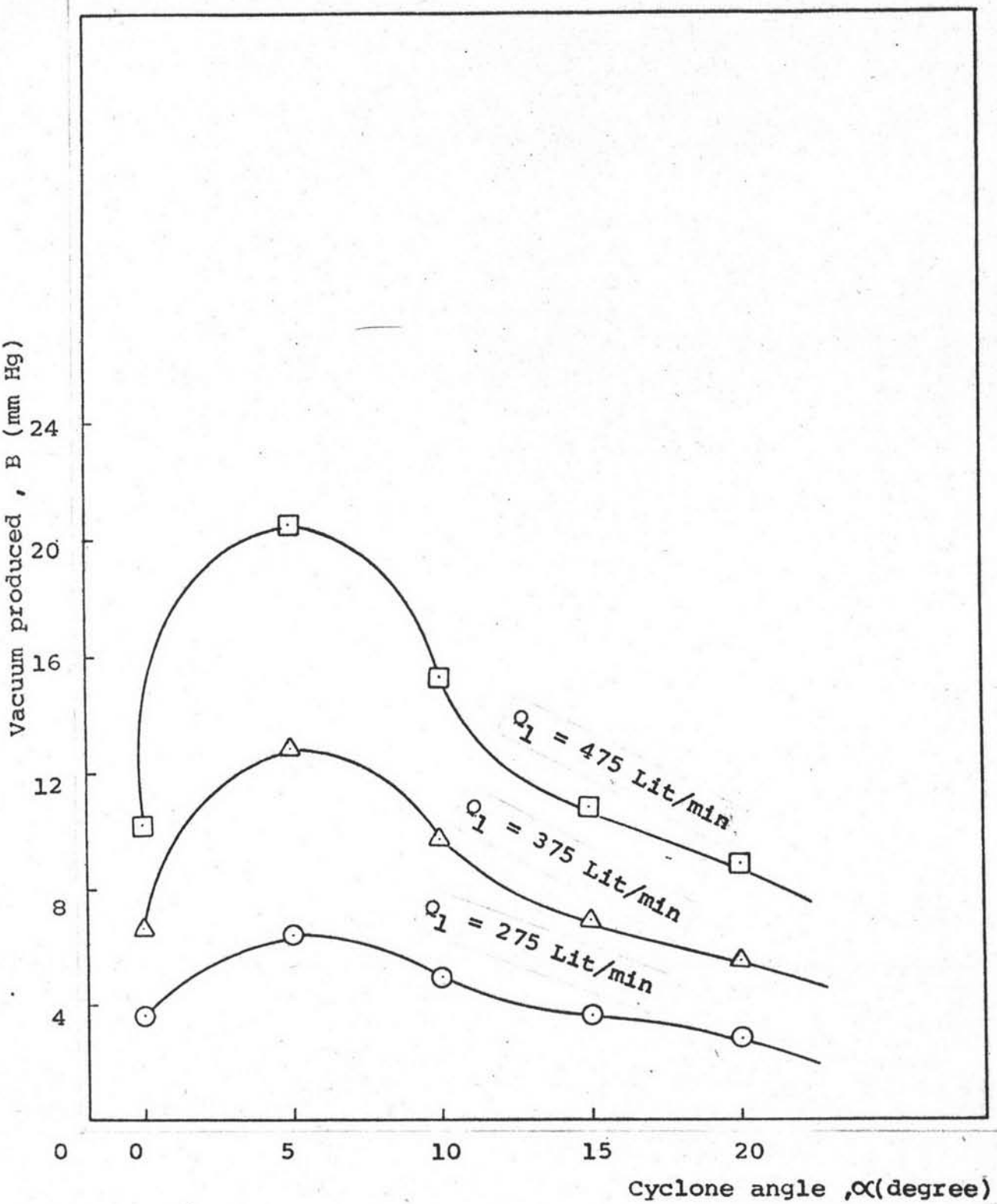

Fig. 4-10 MAXIMUM VACUUM PRODUCTION IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE HEIGHT , H = 45 cm

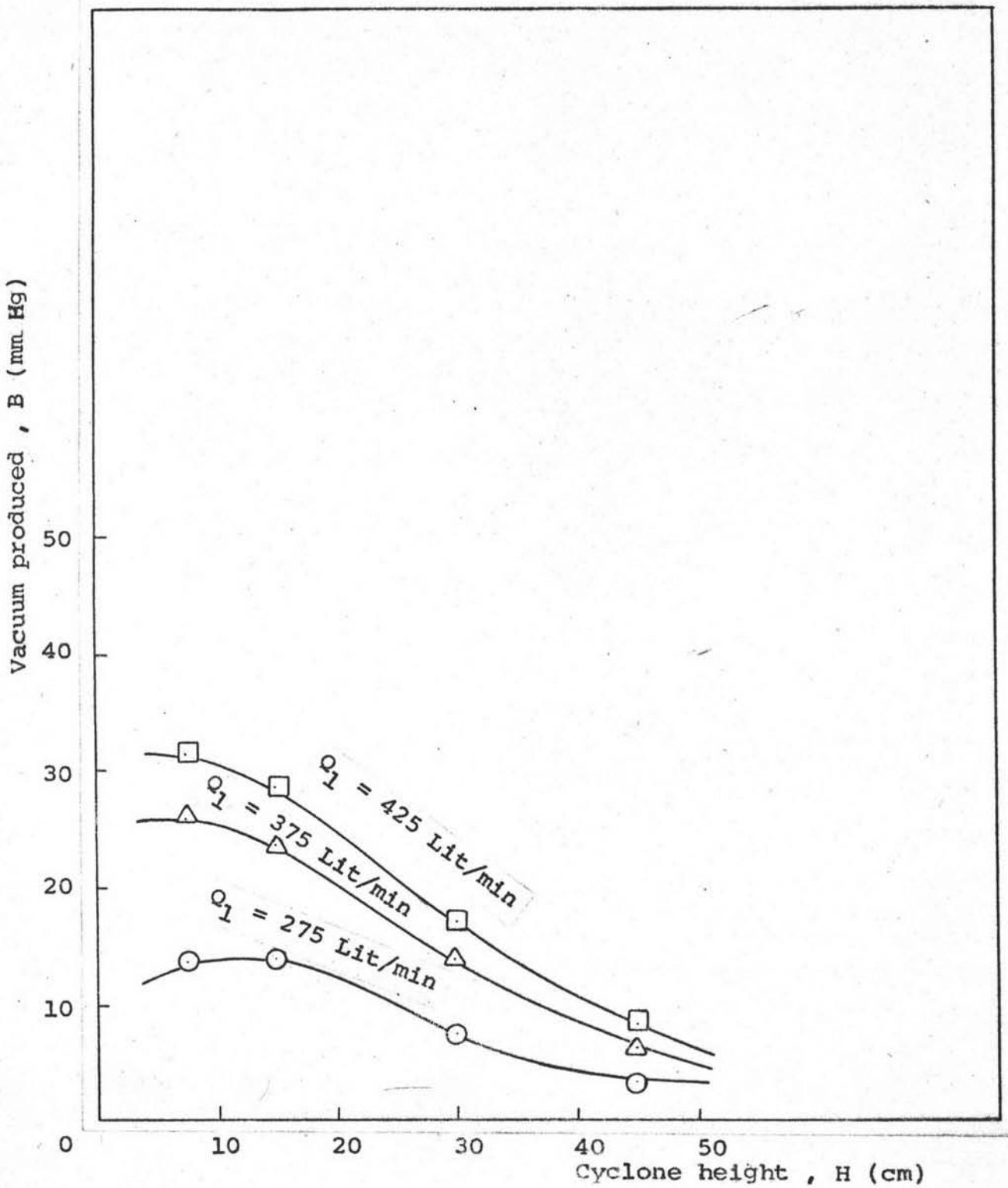

Fig. 4-11 VACUUM IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE ANGLE , $\alpha = 0^{\circ}$

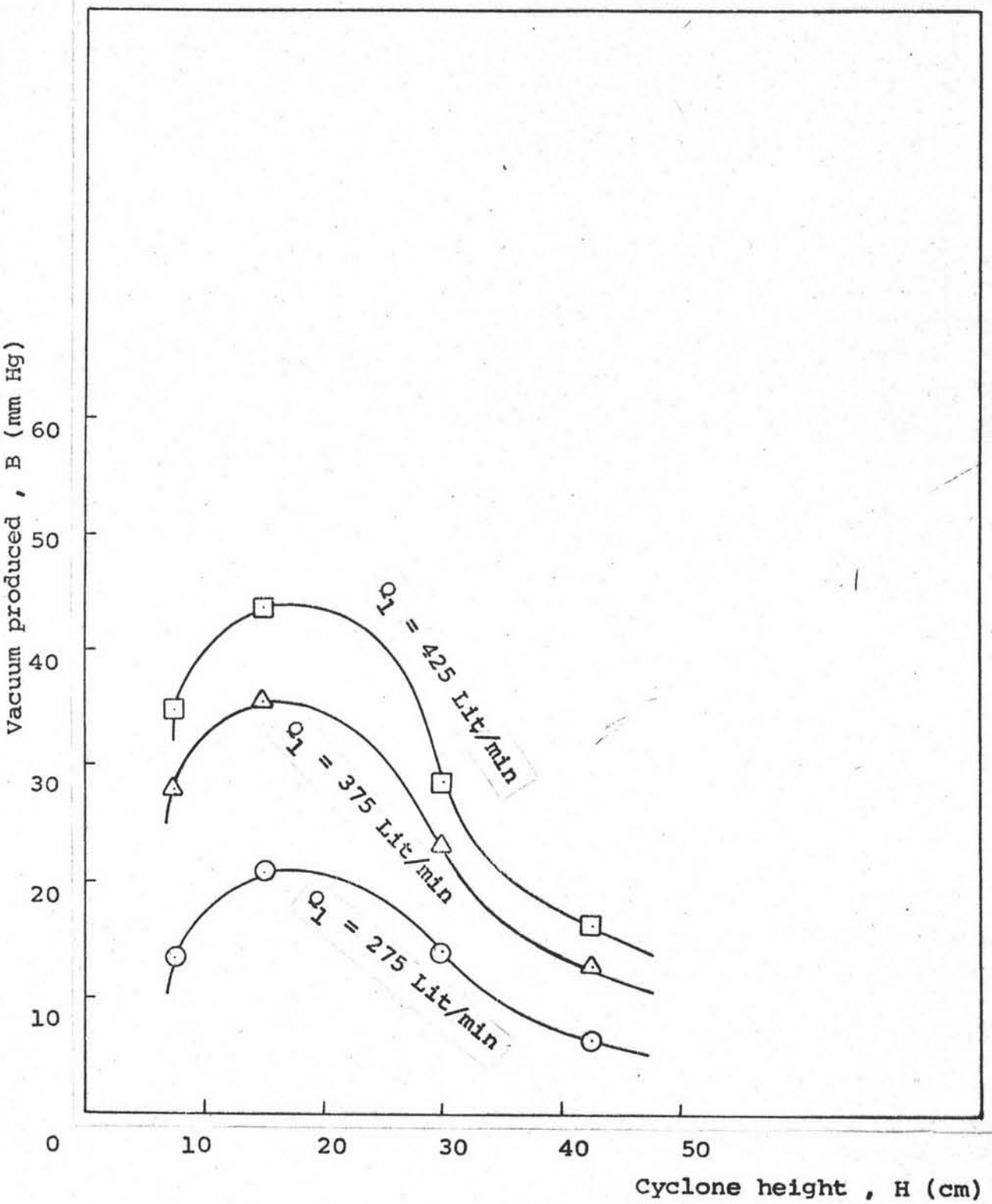

Fig. 4-12 VACUUM IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE ANGLE, $\alpha = 5^{o}$

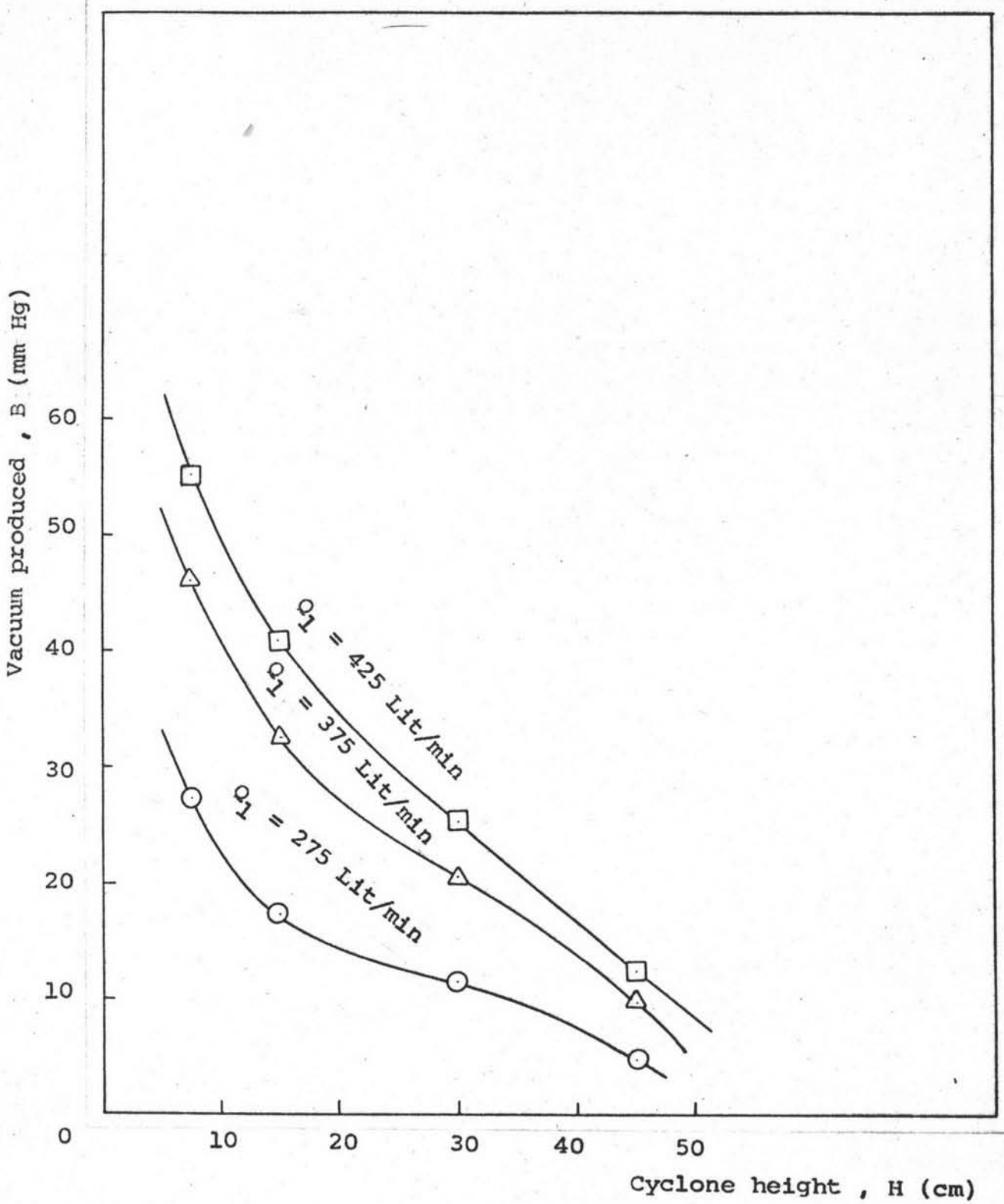

Fig 4-13 VACUUM IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE ANGLE , $\alpha = 10^{\circ}$

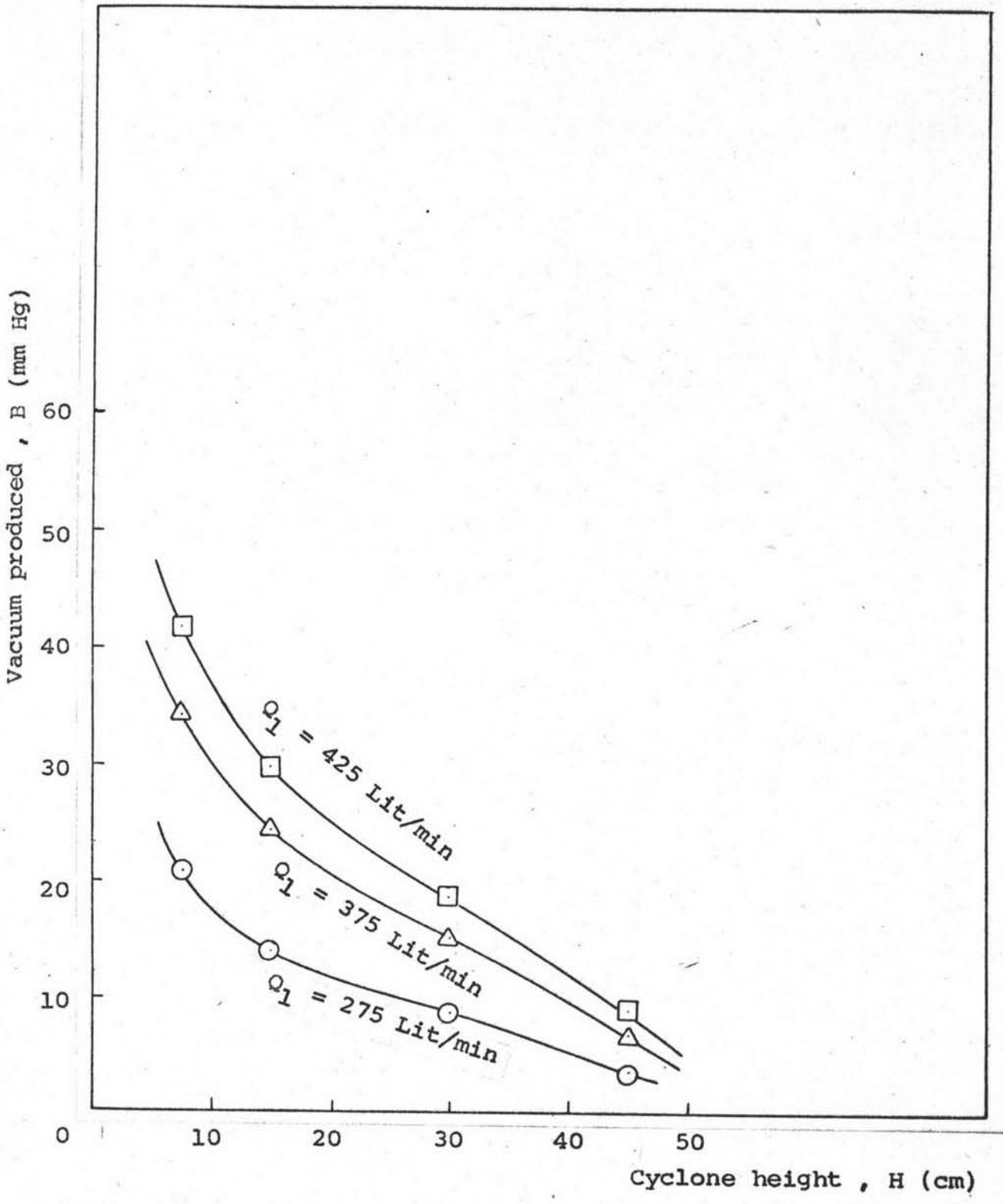

Fig. 4-14 VACUUM IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE ANGLE , $\alpha = 15^{\circ}$

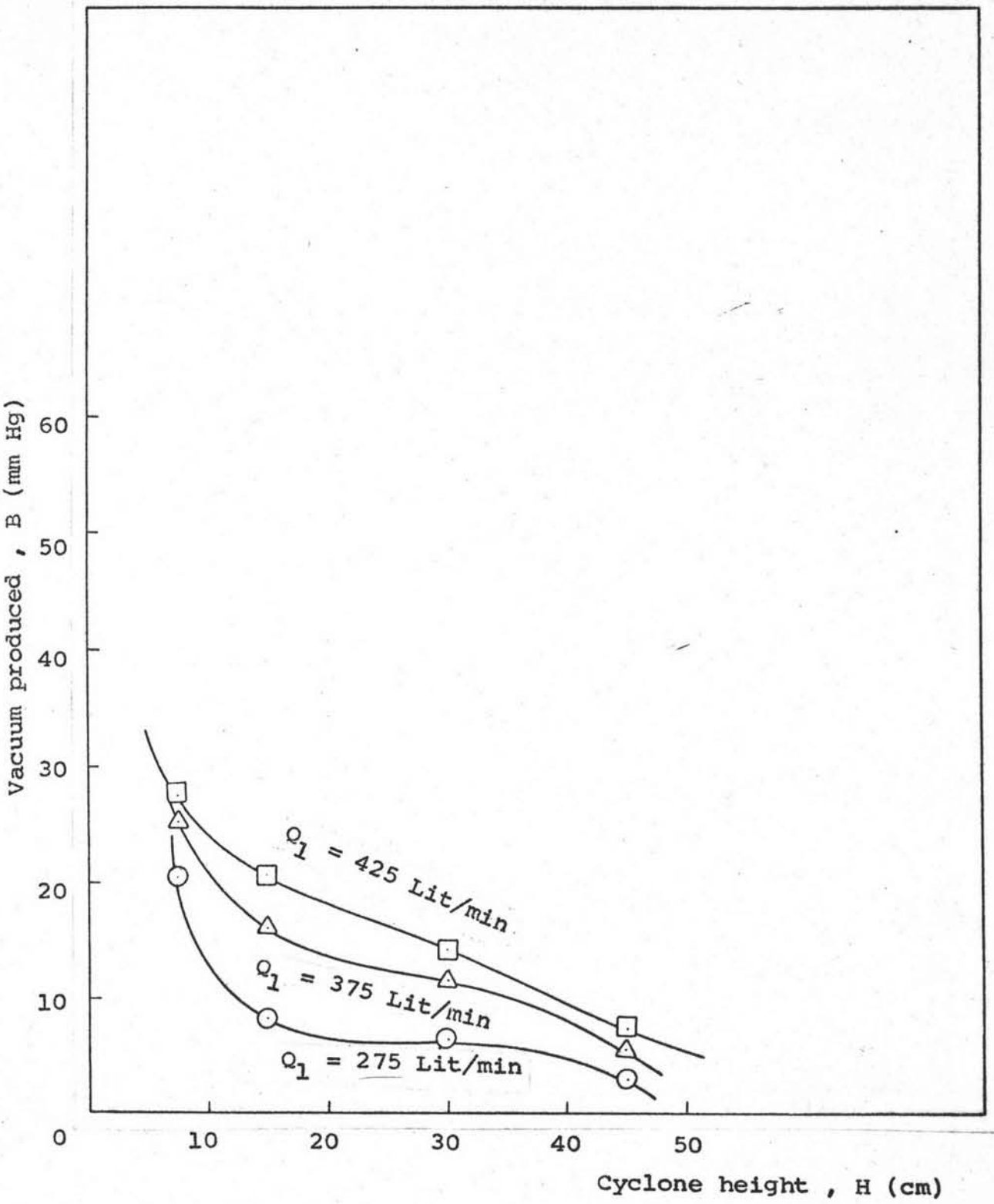

Fig. 4-15 VACUUM IN CYCLONE FOR CONSTANT FLOW RATES OF COMPRESSED AIR AND CYCLONE ANGLE, $\alpha = 20^{\circ}$

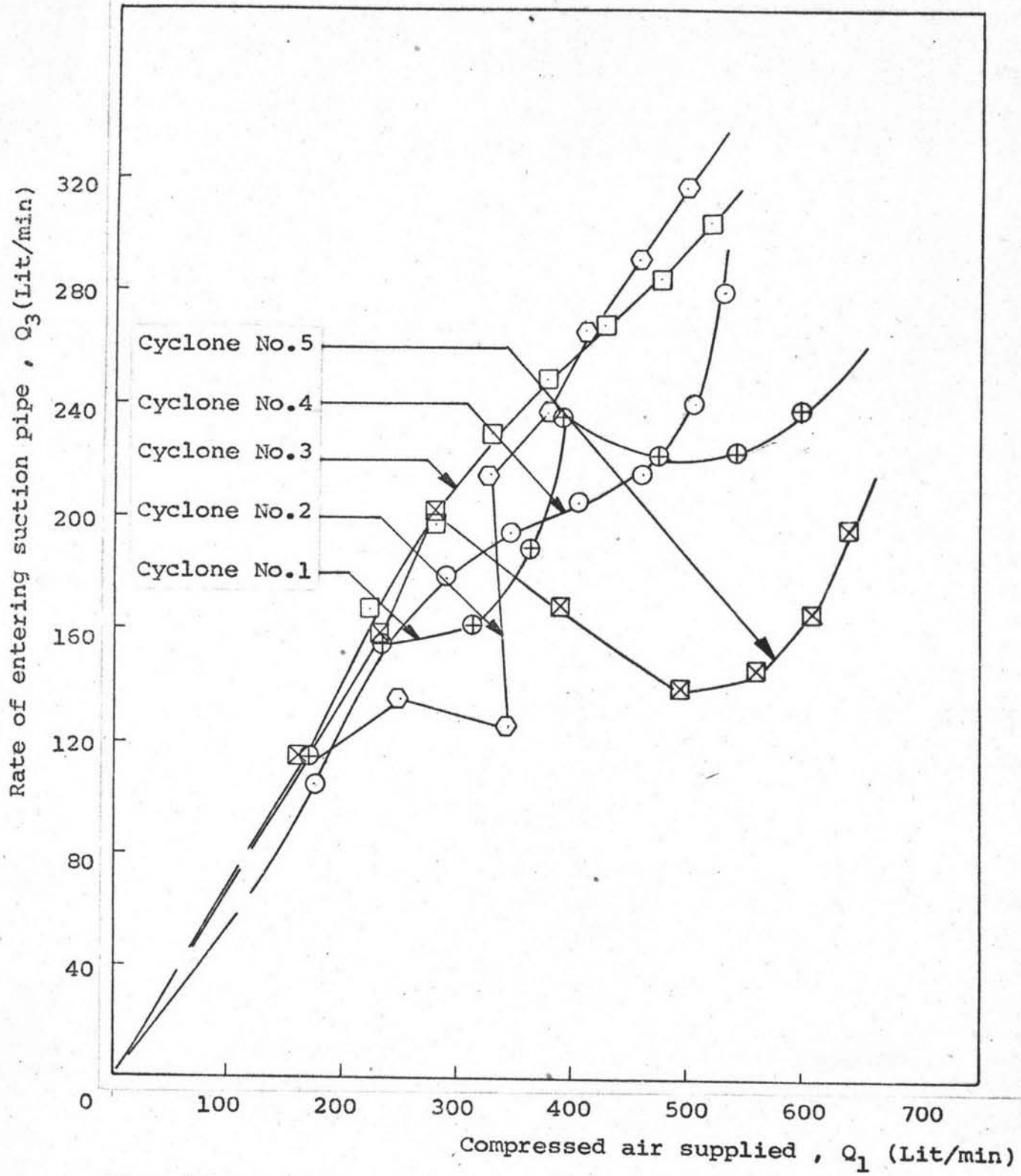

Fig. 4-16 RATE OF SUCTION AIR OF CYCLONE FOR CONSTANT CYCLONE ANGLES AND HEIGHT , H = 7.5 cm

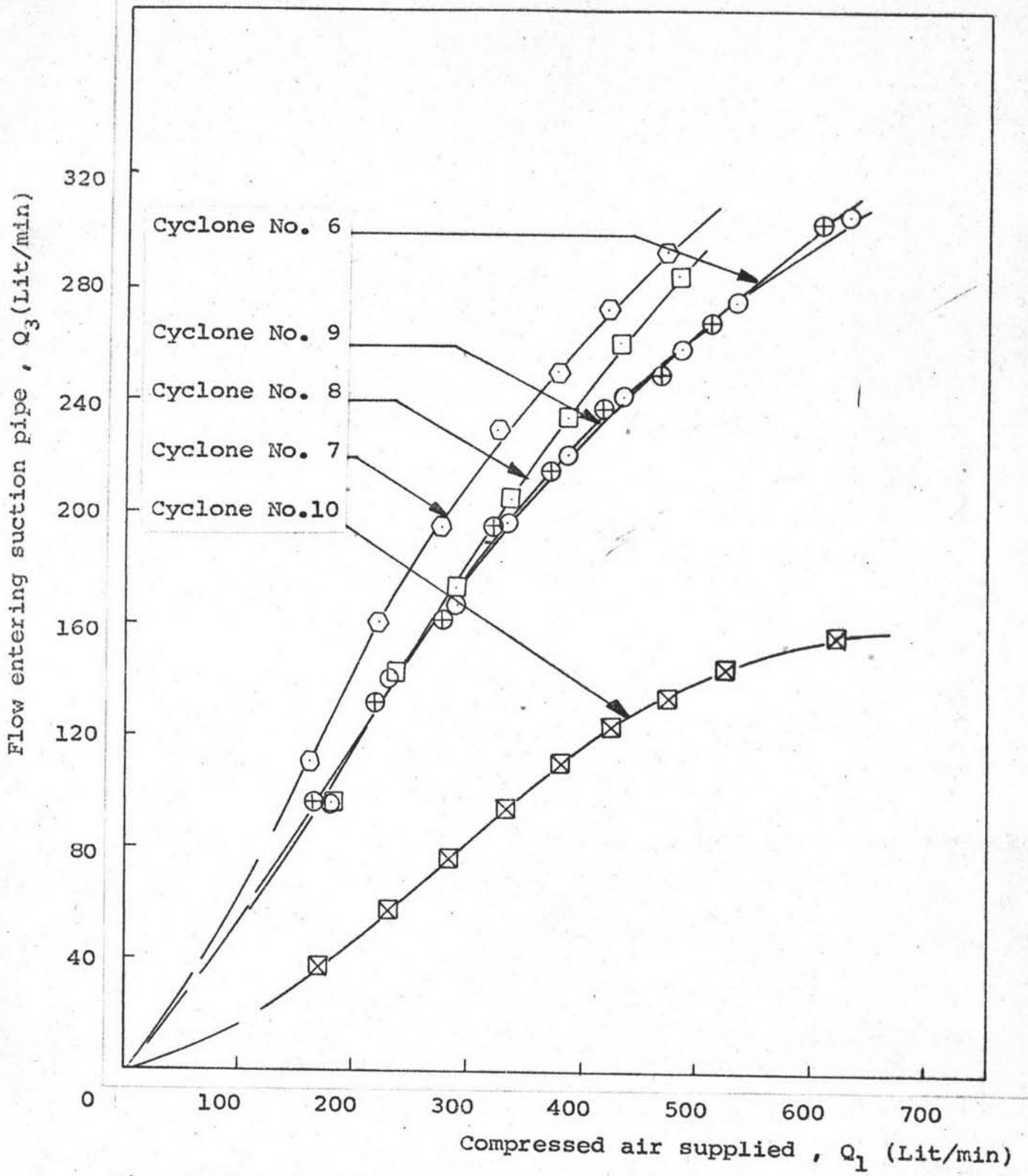

Fig. 4-17 RATE OF SUCTION AIR OF CYCLONE FOR CONSTANT CYCLONE ANGLES AND HEIGHT, H = 15 cm

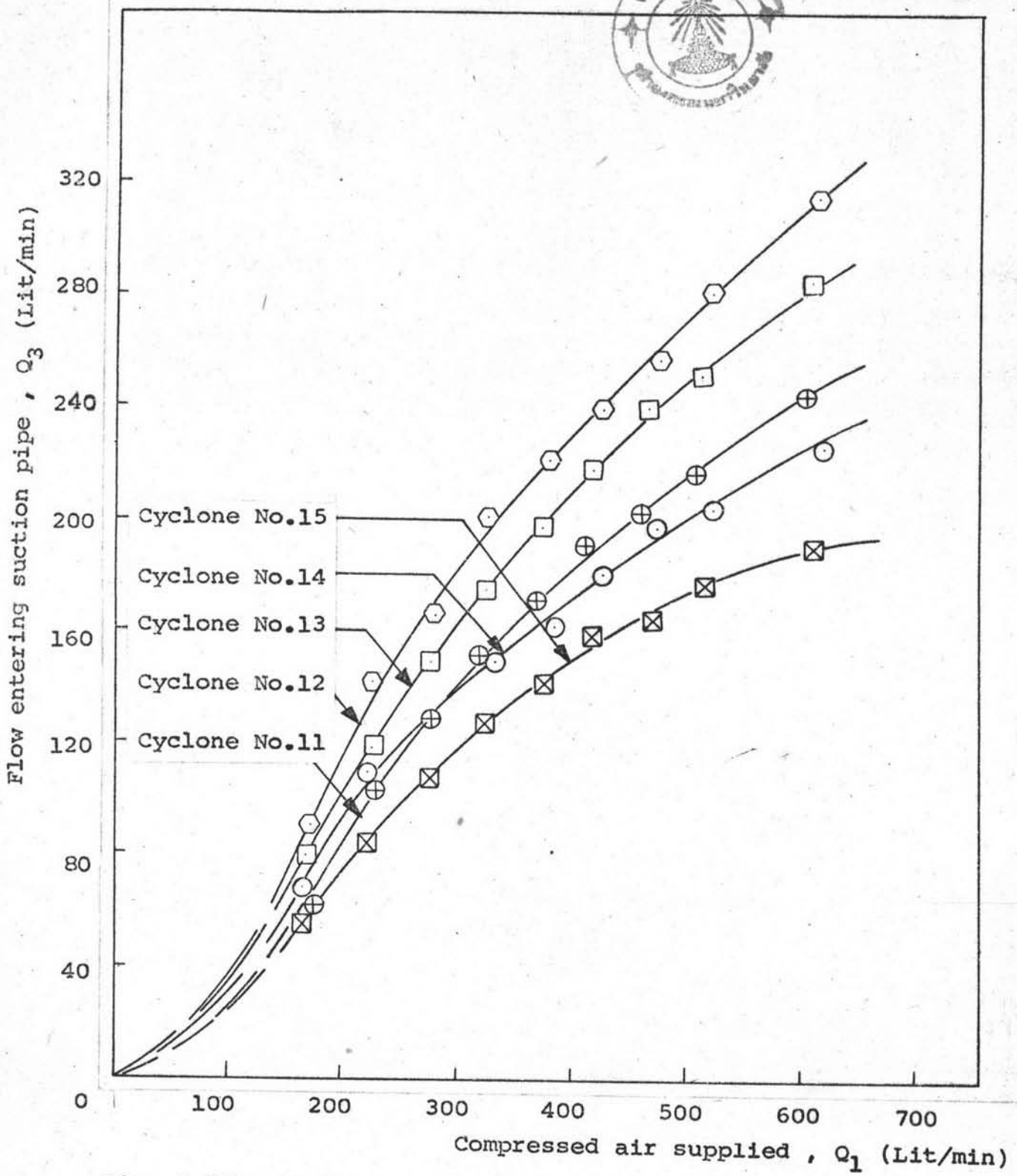

Fig. 4-18 RATE OF SUCTION AIR OF CYCLONE FOR CONSTANT CYCLONE ANGLE AND HEIGHT, H = 30 cm

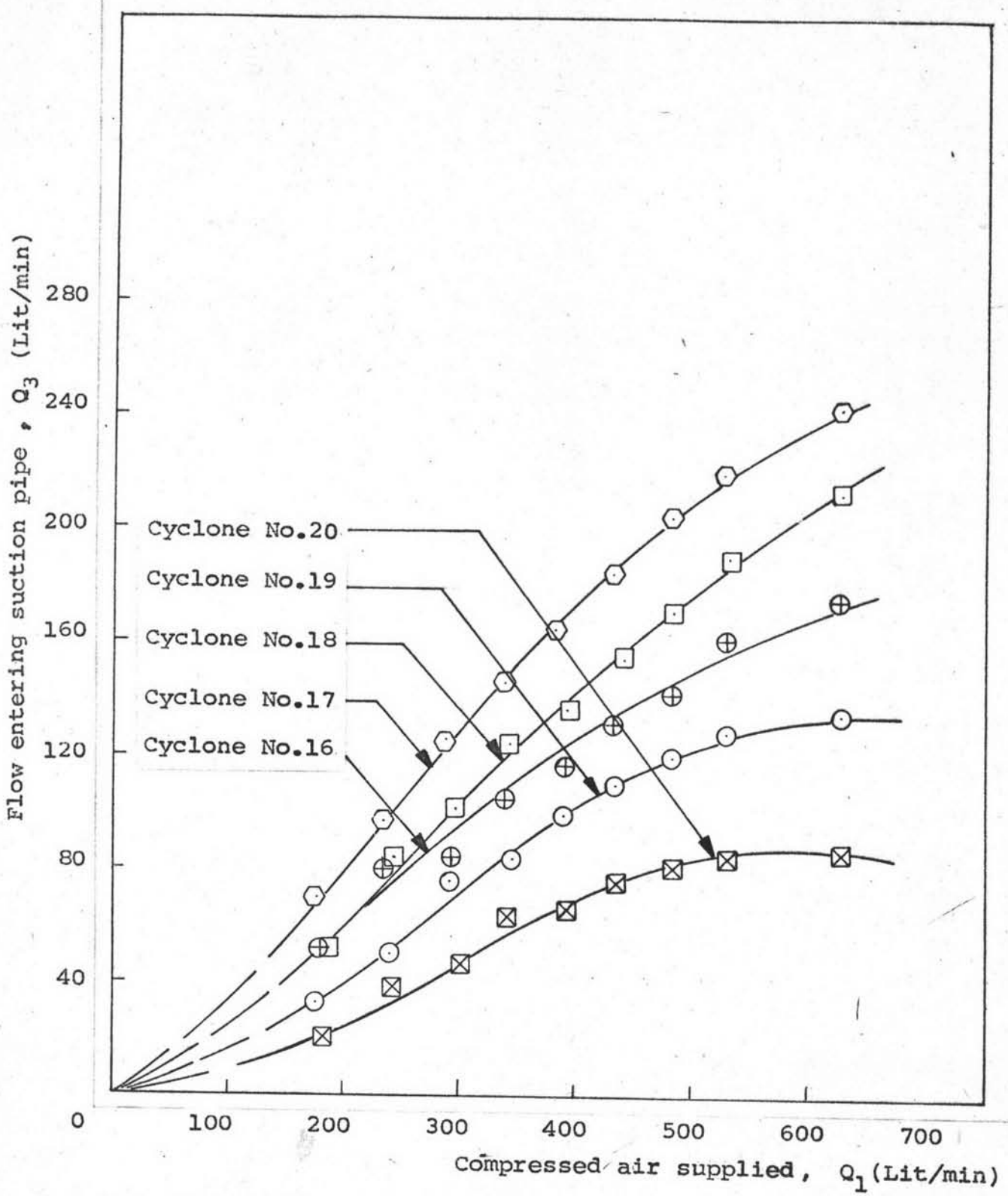

Fig. 4-19 RATE OF SUCTION AIR OF CYCLONE FOR CONSTANT CYCLONE ANGLES AND HEIGHT , H = 45 cm

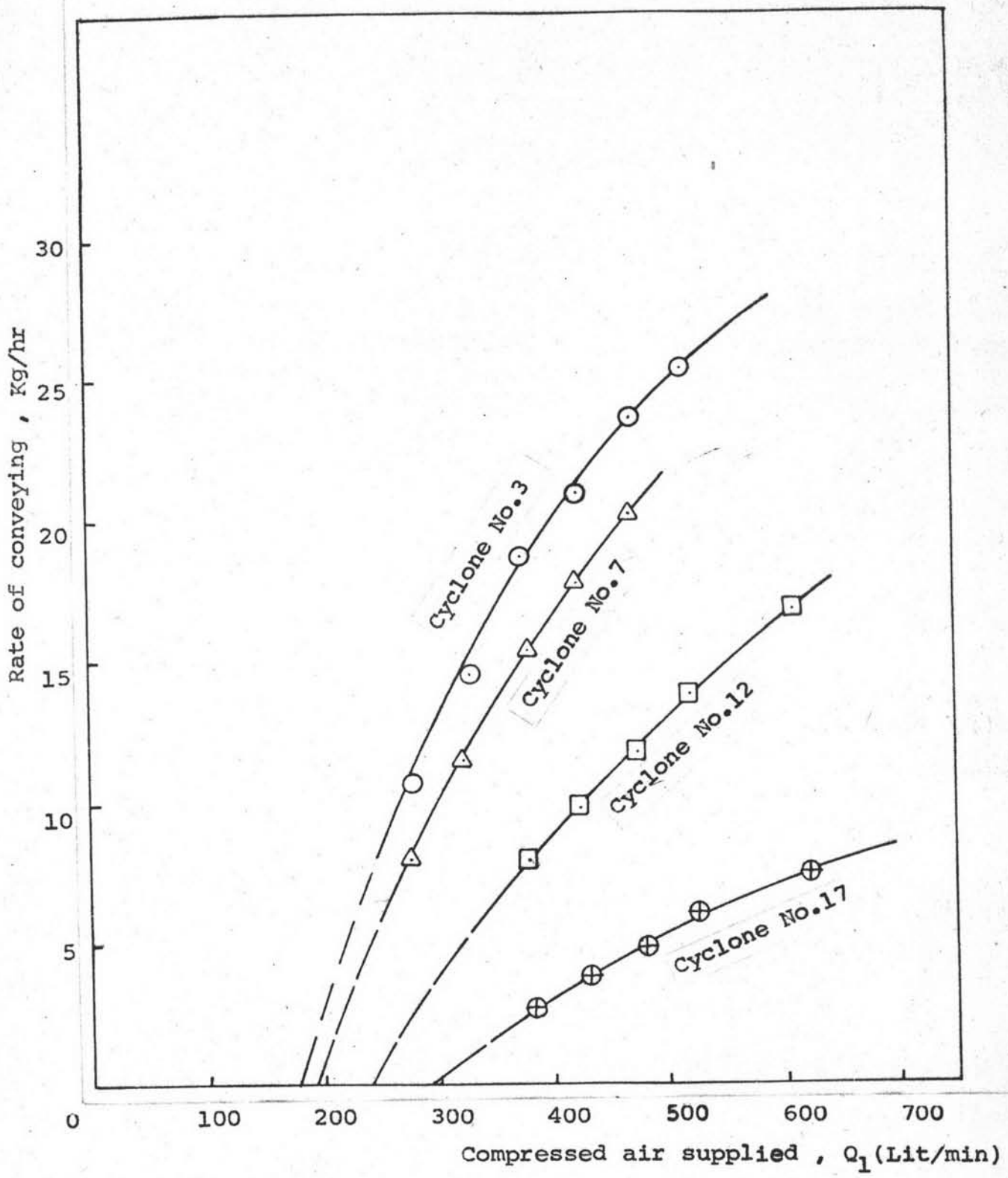

Fig. 4-20 CONVEYING CAPACITY OF CYCLONES

(FOR CONVEYING OF SAND)

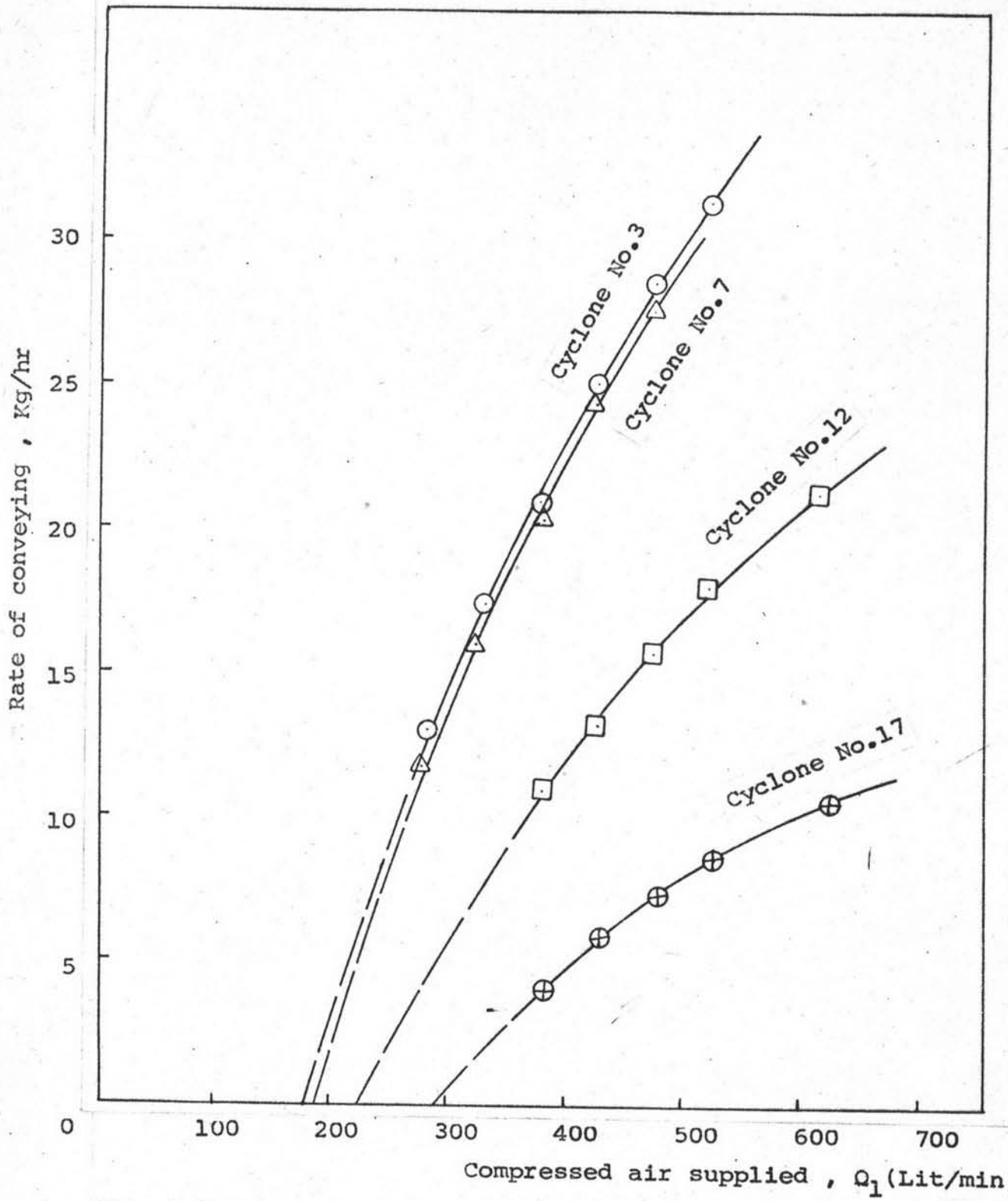

Fig. 4-21 CONVEYING CAPACITY OF CYCLONE

(FOR CONVEYING OF CANE-SUGAR)

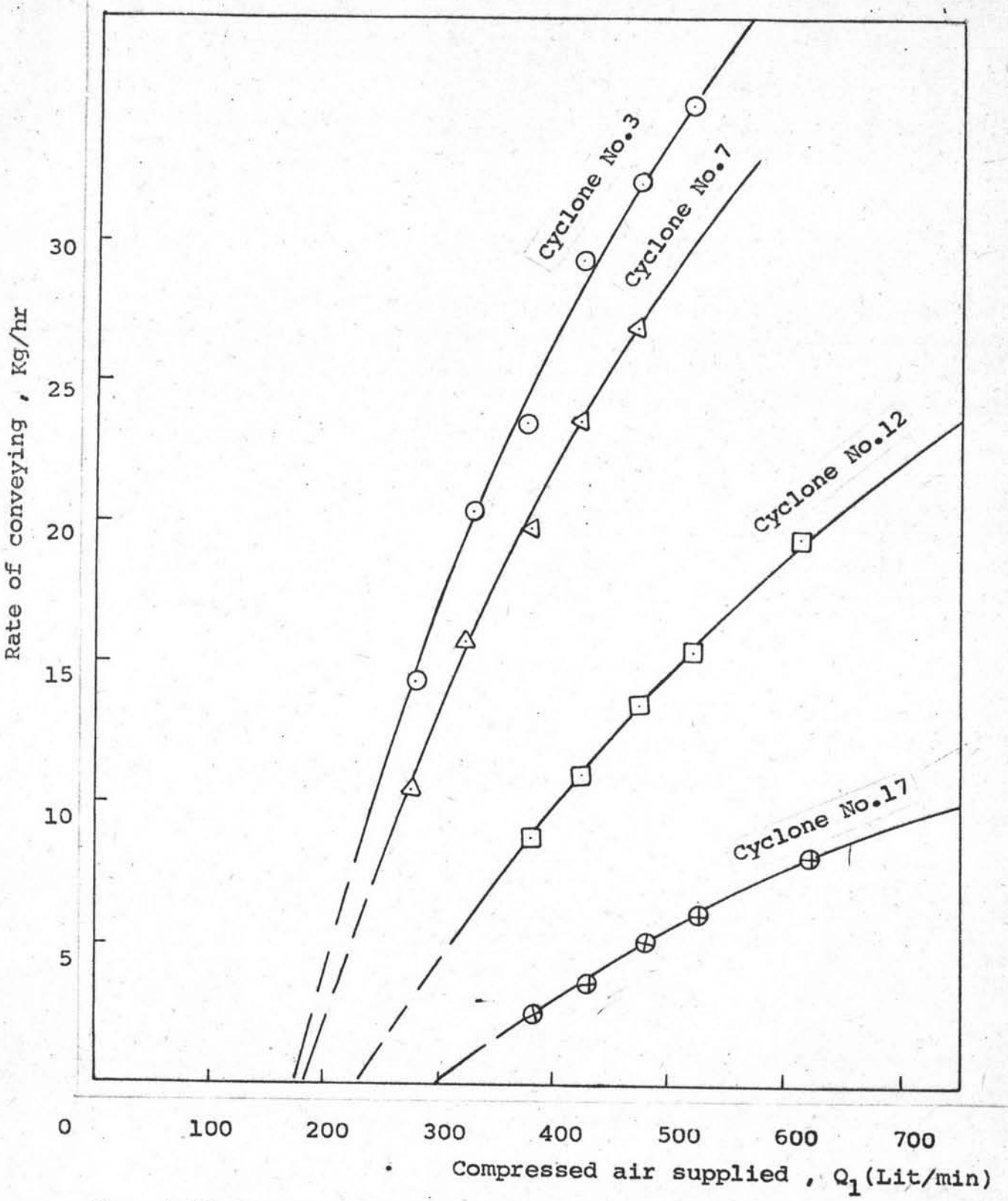

Fig. 4-22 CONVEYING CAPACITY OF CYCLONE

(FOR CONVEYING OF TAPIOCA)