

TABLE 5.—LABORATORY GRINDING TESTS OF NEW ZEALAND AND NORTH AMERICAN WOODS: GRINDING, YIELD, POWER, AND PRODUCTION DATA.
(All quantities oven-dry basis.)

Grinder-run No.	Species	Surface of Stone	Grinding Pressure,*		Temperature of Stock in Pit.	Wood ground.	Yield of Screened Pulp.			Screenings per 100 lb. of Wood.	Duration of Grinding.	Production per Twenty-four Hours.	Power Requirement.		
			In Cylinder.	On Wood.†			From Wood ground.	Per 100 lb. of Wood.	lb.				lb.‡	Daring Run.	Input to Grinder.
1	Spruce	.. Dressed with 8-point straight-cut burr. Stone sharp	lb./sq. in. 40	lb./sq. in. 23	Deg. C. 50	lb. 49.0	lb. 42.1	lb. 86.0	lb.‡ 2,060	Min. 55	Tons. 0.55	KW.H. 22	H.P. § 28	H.P. 51	
2	Insignis pine	.. Stone as left from run 1. Medium sharp	40	23	60	39.7	31.6	79.7	1,990	55	0.41	30	39	94	
3	Spruce	.. Dressed with 8-point straight-cut burr. Stone sharp	30	17	55	54.3	41.8	77.0	1,850	72	0.42	34	34	80	
4	Insignis pine	.. Stone as left from run 3. Medium sharp	30	17	55	45.8	37.2	81.1	2,030	125	0.21	37	21	97	
5	Spruce	.. Dressed with 8-point straight-cut burr. Stone sharp	20	11	55	59.6	41.7	69.8	1,680	155	0.19	50	23	118	
6	Insignis pine	.. Stone as left from run 5 dressed with 3-point straight-cut burr. Stone very sharp	40	23	48	36.9	28.6	77.5	1,940	50	0.41	27	38	93	
7	Insignis pine	.. Stone left from run 6. Sharp.	30	17	55	39.6	34.4	86.8	2,170	55	0.45	30	39	85	
8	Insignis pine	.. Dressed with 8-point straight-cut burr for first part of run; last part of run, 3-point straight-cut superimposed upon 8-point straight-cut	30 to 40	16 to 22	..	..	..	..	..	330	..	..	..	..	
9	Spruce	.. Stone as left from run 8 dressed lightly with 8-point straight-cut burr	30 to 40	16 to 22	..	..	..	..	..	210	..	..	..	..	
10	Tawa	.. Stone as left from run 9 dressed lightly with 10-point spiral-cut burr. Stone dull	30	17	55	64.2	46.7	72.7	2,620	85	0.40	31	26	66	
11	Tawa	.. Stone as left from run 10	40	23	55	64.9	52.4	80.7	2,900	65	0.58	28	31	53	
12	Tawa	.. Dressed lightly with 8-point straight-cut burr. Stone medium sharp	30	17	55	64.2	55.0	85.6	3,080	55	0.72	21	27	38	
13	Insignis pine	.. Stone dressed with 8-point straight-cut burr. Medium sharp	35	19	55	..	..	..	..	..	..	..	..	..	
14	Insignis pine¶	.. Stone as left from run 13. Medium sharp	35	19	55	..	..	..	..	..	..	..	..	..	
15	Tawa	.. Stone as left from run 14. Moderately dull	30	17	..	..	..	..	..	..	..	..	..	..	
16	Insignis pine	.. Stone dressed with 8-point straight-cut burr. Fairly sharp	35	19	..	..	..	..	..	..	..	..	..	..	
17	Insignis pine¶	.. Stone as left from run 16. Sharp	30 and 25	17 and 14	..	..	..	..	..	..	..	..	..	..	
18	Insignis pine**	.. Stone as left from run 17. Sharp	30	17	..	..	..	..	..	..	..	..	..	..	

* The peripheral speed of the stone was 3,000 ft. per minute.
 † The average area of wood against the stone was estimated to be 74 sq. in.
 ‡ The oven-dry weights per cubic foot, green volume, without bark, for insignis pine and tawa were found to be 25 lb. and 36 lb. respectively. The value used for white-spruce was 24 lb. per cubic foot as given in U.S. Department of Agriculture Bulletin No. 1485.
 § The power required by the motor was corrected for the motor efficiency (91 per cent.) and efficiency in the belt transmission (97 per cent.) to obtain the power input to the grinder.
 ¶ Wood contained blue stain. Centre of billets bored out and knots removed.
 || Mixture of blue-stained and uninfected wood. Centre of billets bored out and knots removed.