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Poultry Housing Tips

Best Performing Tunnel Fans - 2007

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TOP 7%

test	manufacturer	model	cone	shutter	cfm (0.05")	cfm/watt (0.05")	cfm (0.10:)	cfm/watt (0.10")	air flow ratio
07206	Acme	BDR54J1	Y	A	27,400	25.4	25,900	22.7	0.81
02207		BDRV54J2-C2	Y	A	27,400	25.5	25,800	22.5	0.79
02209		BDRV54J1-C2	Y	A	27,100	24	25,500	21.1	0.77
02217		BDRV54J2-C3	Y	A	27,100	25.2	25,400	22.2	0.79
04278		DDPGV54J-C	Y	A	26,500	25.2	24,700	21.8	0.76
00245		BDR54J-C	Y	A	26,100	24.2	24,500	21.4	0.79
02210		BDRV54J-C2	Y	A	26,100	25.8	24,400	22.4	0.77
02214		BDRV54J-C3	Y	A	25,900	25.3	24,200	22.2	0.76
04274		DDPSV54J-C	Y	A	25,500	25.4	23,800	22.1	0.77
07204		BDR54J	Y	A	25,100	27.7	23,500	24.5	0.76
98142		DDPS48J-C	Y	A	21,400	23.2	20,300	20.9	0.83
00207		DDPS48J-C	Y	A	20,400	23.9	19,100	21.3	0.77
06141	Aerotech	WF541T1CEJ	Y	A	27,800	25	26,000	22.3	0.77
07390		WF541V1CD	Y	B	27,800	24.6	25,900	21.7	0.77
06139		WF541T1CEP	Y	P	27,400	24.2	25,600	21.7	0.76
06115		WF541T1CJ	Y	A	27,300	23.6	25,400	20.9	0.77
01216	American Coolair	MNBRC52L	Y	A	25,900	24.6	24,300	21.7	0.77
05235		MNBRDD52L	Y	B	25,100	24.2	23,500	21.4	0.78
05234		MNBRDD52L	Y	B	24,900	23.8	23,100	20.9	0.77
07230		NBRID52L-SQ	Y	D	24,600	24.3	23,000	21.3	0.76
05236		MNBRDD52LE	Y	B	24,100	26.1	22,200	22.8	0.76
05233		MNBRDD52LE	Y	B	23,900	25.4	22,100	22.3	0.76
05192	Chore-Time	49511-22	Y	B	26,400	23.9	24,600	21.2	0.76
05186		49519-22	Y	B	26,400	23.6	24,500	20.8	0.76
04336		49451-22	Y	B	21,200	24.8	19,700	21.6	0.76
04326		49515-22	Y	B	21,100	24.4	19,600	21.3	0.77
04343	Hired Hand	6603-0606	Y	A	27,000	23.3	25,300	20.8	0.78
05192p	Pro Terra Systems	A49511-22	Y	B	26,400	23.9	24,600	21.2	0.76
05186p		A49519-22	Y	B	26,400	23.6	24,500	20.8	0.76
04336p		A49451-22	Y	B	21,200	24.8	19,700	21.6	0.76
04326p		A49515-22	Y	B	21,100	24.4	19,600	21.3	0.77
05203	Val-Co	HGS48G340NGA	Y	A	21,900	25.4	20,300	22.1	0.76

Table 1. Alphabetical listing of best performing tunnel fans as tested by BESS Labs (Top 7%)
(A=Aluminum Shutter, G=Galvanized Shutter, P=Plastic Shutter, R=Roll Seal Shutter, B=Butterfly Shutter, D=Door)

When building a new house or retrofitting an older one for tunnel ventilation, fan selection is one of the most, if not the most important decision a producer has to make. A house's fans are essentially the engine of the ventilation system and as a result have a significant effect on a producer's ability to maintain the proper environmental conditions throughout the year. Furthermore, with rising electricity prices selecting the right energy efficient fan can save a

producer thousands of dollars a year. As a result, when selecting fans it is crucial that a producer compares fans not just on initial cost but on fan performance and operating costs as well.

University of Illinois BESS Laboratory "Agricultural Ventilation Fans Performance and Efficiencies" test booklet is the leading source for agricultural fan performance data (an electronic version of the test booklet can be found at www.bess.uiuc.edu.) Along with a fan's air moving capacity at various static pressures BESS Laboratory provides producers information on a fan's energy efficiency rating (cfm/watt) and air flow ratio (an indicator of how well the fan holds up under high static pressures). A detailed explanation of exhaust fan performance factors can be found in the May 2006 issue of *Poultry Housing Tips.*

TOP 16%

test	manufacturer	model	cone	shutter	cfm (0.05")	cfm/watt (0.05")	cfm (0.10")	cfm/watt (0.10")	air flow ratio
02215	Acme	BDRV54J1-C3	Y	A	27,000	23.8	25,000	20.7	0.74
04300		BDRV54J-CB	Y	B	26,200	23.6	24,100	20.3	0.76
98175		DDPS50J1-CR	Y	R	24,900	22.8	23,700	20.6	0.82
98162		DDPS50J-C	Y	A	23,900	22.9	22,700	20.5	0.8
00252		DDPS50J-C	Y	A	23,800	22	22,600	20	0.79
07208		BDR48J2L	Y	A	22,900	22.3	21,900	20.3	0.84
98111		DDPG48J-C	Y	A	22,500	22.2	21,300	20	0.81
06149	Aerotech	WF5415T1CEJ	Y	A	30,300	22.2	28,600	20	0.81
07393		WF5415V1CD	Y	B	29,600	22.4	27,800	20.1	0.8
06113		WF541T1CP	Y	P	27,400	23.3	25,500	20.6	0.76
07183		WF501V1CD	Y	B	24,500	22.4	23,200	20.2	0.8
03148		WF501T1CP	Y	P	23,900	22.5	22,400	20.1	0.75
01093	American Coolair	FGBRE52M	Y	A	28,000	23.3	26,400	20.7	0.8
01209		MNBRC52M	Y	A	27,600	22.5	26,000	20.1	0.81
01232		MNEFC52M	Y	A	27,000	21.6	25,500	20.2	0.75
07221		NEFID52L-SQ	Y	D	25,200	23.9	23,500	20.7	0.73
07154	Canarm	SF52HE	Y	A	25,500	23.1	24,000	20.9	0.74
00066		FGI50W27H61	Y	P	24,100	23.5	22,400	20.5	0.75
04334	Chore-Time	49740-22	Y	B	27,000	23.5	24,900	20.8	0.73
04321		48318-225	Y	P	20,700	23.2	19,200	20.2	0.75
04337		49451-23	Y	B	20,100	26.8	18,700	23.4	0.75
04325		49515-23	Y	B	20,000	26.5	18,600	23.2	0.75
04322		48318-235	Y	P	19,400	25.1	18,000	21.8	0.73
02460	Hired Hand	6603-7401	Y	R	27,900	23.2	26,400	20.7	0.82
02461		6603-7401	Y	A	27,400	22.2	25,900	20	0.82
98197		6603-6010	Y	R	25,700	23.1	24,200	20.4	0.81
05337		6603-6502	Y	B	26,000	24.2	24,000	21	0.73
04354		6603-7021	Y	A	23,400	23	21,500	20.3	0.74
04334p	Pro Terra Systems	A49740-22	Y	B	26,958	23.5	24,915	20.8	0.74
06247p		A50817-22	Y	B	26,800	23.3	24,600	20.2	0.73
04321p		A48318-225	Y	P	20,700	23.2	19,200	20.2	0.75
04337p		A49451-23	Y	B	20,100	26.8	18,700	23.4	0.75
04325p		A49515-23	Y	B	20,000	26.5	18,600	23.2	0.75
04322p		A48318-235	Y	P	19,400	25.1	18,000	21.8	0.73
99075	Pruden Ventilation	PFFG48C	Y	A	20,700	22.8	19,300	20.1	0.77
06064	Schaefer	523CFB1A	Y	B	26,900	23.1	24,800	20.2	0.76
06065		523CFB1E	Y	B	26,600	23	24,700	20.2	0.76
06085		526CFB1	Y	B	26,100	23	24,600	20.5	0.75
05121	Val-Co	HGS54G340MGA	Y	A	28,400	23.3	26,500	20.6	0.76
02228		PM50W340M_A (C or N)	Y	A	25,400	22.8	23,800	20.4	0.76
05200		HGS48G340MGA	Y	A	23,600	22.8	22,200	20.3	0.81
02349		PM48W340M_A (S or G)	Y	A	23,400	22.4	21,900	20	0.77
05141		HGS48G340N_A (N or C)	Y	A	23,200	23	21,600	20.6	0.78

Table 2. Alphabetical listing of best performing tunnel fans as tested by BESS Labs (Top 16%)
(A=Aluminum Shutter, G=Galvanized Shutter, P=Plastic Shutter, R=Roll Seal Shutter, B=Butterfly Shutter, D=Door)

Tables 1 and 2 list the top performing tunnel fans listed in the 2007 “Agricultural Ventilation Fans Performance and Efficiencies” test booklet. The top performing tunnel fans are divided into two groups based on their performance ratings. Table 2 lists those fans that have energy an efficiency rating at 0.10" static pressure of at least 20 cfm/watt and an air flow ratio of at least 0.73. Tunnel fans (48" or larger) that meet these two performance criteria represent the top 16% of all fans tested by the BESS Laboratory. Fans listed in Table 1 meet an even higher performance selection criteria: an energy efficiency rating of at least 20.8 cfm/watt @ 0.10" static pressure and have an air flow ratio of at least 0.76. The fans listed in Table 1 represent the top 7% of all tunnel fans tested by the BESS Laboratory.

Though fan performance is of course very important, it is important to keep in mind that there are other factors to consider when purchasing a fan, such as quality of construction, local dealer reputation, warranty and type of shutter (some types significantly reduce cleaning requirements). Though it can be difficult balancing all the factors when it comes to purchasing fans for a tunnel-ventilated house, in the long run you will find that it is time well spent.

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