Row Blades Tube Guard Wheel Tube Pressure Closing 1, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,	Exap	ta's 2018 NT Seed	ling School at Ja	ason Stans	bury's									
Row Blades Tube Guard Wheel Tube Pressure Down- Row Blades Tube Guard Wheel Tube Pressure Closing Early Late 2018 2017 2016  Row Blades Tube Guard Wheel Tube Pressure Closing Early Late 2018 2017 2016  Row Blades Tube Guard Wheel Tube Pressure Closing Pressure Closing Partial Provided Pressure Closing Partial Provided Pressure Closing Partial Provided Pressure Closing Partial Provided Pressure Closing Provided Pressure Closing Provided Pressure Closing Provided Pressure Closing Pressure Closing Pressure Closing Provided Pressure Closing Pressur														
Baddes   Tube Guard   Wheel   Tube   Pressure   Closing   Pressure						Keeton	Row Unit		2018	2018	<< Avg			3-yr Avg
#I New, 3.5 mm Valion chrome Sid Good +Mojo Max JD 7200 bracket w/ Dawn Curvelines & M.4466 92 89 91 82 70 81 430 New, 3.5 mm Valion chrome Sid Good +Mojo Max JD 7200 bracket w/ Dawn Curvelines & M.4466 92 89 91 82 70 81 430 New, 3.5 mm Valion chrome Sid Good +Mojo Max JD 7200 bracket w/ Dawn Curvelines & M.4466 92 89 91 82 70 81 430 New, 3.5 mm Valion chrome Sid Good +Mojo Max JD 7200 bracket w/ Marin Spader wheels & M.4466 77 88 84 493 91 89 84 89 391 89 84 89 391 89 89 84 89 391 89 89 84 89 391 89 89 891 89 89 891 891				Gauge	Seed	Pressure	Down-		a %	ı %	%	%	%	%
New, 3.5 mm Valion chrome   Std   Good   +Mojo   Max   JD 7200 bracket w JD smooth wheels & DEM spring   67   70   69   64   67   78   78   78   78   78   78   78	Row	Blades	Tube Guard	Wheel	Tube		Pressure	Closing	ı Early ı					
## 1 New, 3.5 mm Valion chrome Std Good +Mojo Max Up 7200 brackets W.D smooth wheels & OEM spring 67 70 69 69 64 67 87 8 New, 3.5 mm Valion chrome Std Good +Mojo Max Up 7200 brackets W.Bama Curvetines & M.4466 79 89 91 62 70 81 83 New, 3.5 mm Valion chrome Std Good +Mojo Max Up 7200 brackets W.Bama Curvetines & M.4466 79 89 84 89 91 89 84 89 91 89 84 89 91 89 84 89 91 89 84 89 91 89 89 89 89 89 89 89 89 89 89 89 89 89								planting*	planting**	Stansbury Stansbur A		Aufdembe	erge	
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## New, 3.5 mm Valion chrome Sid Good Molyo Max JD 7200 bracket My Martin Spader wheels & M.4466 79 89 84 93 91 89 84 New, 3.5 mm Valion chrome Sid Good Molyo Max JD 7200 bracket My Schlagels & OCH Spring (M.4466) 75 85 80 100 80 87 85 80 100 80 87 85 80 100 80 87 85 80 100 80 87 85 80 100 80 87 85 80 100 80 87 87 85 80 100 80 87 87 87 87 87 87 87 87 87 87 87 87 87	#1		Valion chrome		Good		Max		67					67
## New 3.5 mm Valion chrome Std Good +Mojo Max JD 7200 bracket W Schlageis & OEM spring ## New 3.5 mm Valion chrome Std Good +Mojo Max JD 7200 bracket & rims w Furrow Cruisers installed & OEM spring ## New 3.5 mm Valion chrome Std Good +Mojo Max JD 7200 bracket & rims w Furrow Cruisers installed & OEM spring ## 7.6 8.0 8.3 80 81 87 87 88 83 91 81 89 83 91 81 89 83 91 81 88 91 81 88 91 81 81 81 81 81 81 81 81 81 81 81 81 81	#2	New, 3.5 mm	Valion chrome	Std	Good	+Mojo	Max	JD 1700 bracket w/ Dawn Curvetines & M.4466	92	89	91		-	81
##5 New, 3.5 mm Valion chrome Std Good +Mojo Max JD 7200 bracket & SiD bistruburgh & Finger-Till & med spring (M.4466) 75 85 80 100 80 87 MS New, 3.5 mm Valion chrome Std Good +Mojo Max JD 7200 bracket & miss w Furrow Cruisers installed & GOM # New, 3.5 mm Valion chrome Std Good +Mojo Max JD 1700 bracket & miss w Furrow Cruisers installed & GOM # New, 3.5 mm Valion chrome Std Good +Mojo Low (first n JD bracket w May-Wes Star wheels & M.4466 72 89 81 95 92 22 65 7 81 98 New, 3.5 mm Valion chrome Std Good +Mojo Low JD bracket w May-Wes Star wheels & M.4466 89 95 92 93 93 22 79 65 91 New, 3.5 mm Valion chrome Cll+RID Good +Mojo Low JD bracket w May-Wes Star wheels & M.4466 92 92 93 93 22 27 9 65 91 New, 3.5 mm Valion chrome Std Good New Holp Low JD bracket w May-Wes Star wheels & M.4466 92 92 93 93 22 27 9 65 91 New, 3.5 mm Valion chrome Cll+RID Good +Mojo Low JD bracket w May-Wes Star wheels & M.4466 92 92 93 93 22 27 9 65 91 New, 3.5 mm Valion chrome Std Good New Holp Low Was JD bracket w May-Wes Star wheels & M.4466 92 92 93 93 22 27 9 65 91 New, 3.5 mm Valion chrome Std Good New Holp Low Was JD bracket w May-Wes Star wheels & M.4466 92 92 93 93 22 27 9 65 91 New, 3.5 mm Valion chrome Std Good New Holp Low Was JD bracket w May-Wes Star wheels & M.4466 92 92 93 93 22 27 9 65 91 New, 3.5 mm Valion chrome Std Good New Holp Low Was JD bracket w May-Wes Star wheels & M.4466 92 92 93 93 93 22 9 79 65 91 New Holp Low Was JD Was	#3	New, 3.5 mm	Valion chrome		Good	+Mojo	Max	JD 7200 bracket w/ Martin Spader wheels & M.4466	79	89		93		89
## New, 3.5 mm Valion chrome Std Good +Mojo Max JD 7200 bracket & firms w/Furrow Cruisers installed & OEM spring			Valion chrome											75
## New. 3.5 mm   Valion chrome   Stid   Good   +Mojo   Low (first I) D tracket w/ May-Wes Star wheels & M.4466   89   95   92   22   67   61   ## New. 3.5 mm   Valion chrome   CH/RID   Good   +Mojo   Low (first I) D tracket w/ May-Wes Star wheels & M.4466   92   93   93   22   79   65   ## 10 New. 3.5 mm   Valion chrome   CH/RID   Good   +Mojo   Low   JD bracket w/ May-Wes Star wheels & M.4466   92   93   93   22   79   65   ## 10 New. 3.5 mm   Valion chrome   Stid   Good   +Mojo   Low   JD bracket w/ May-Wes Star wheels & M.4466   92   93   93   93   22   79   65   ## 11 New. 3.5 mm   Valion Ultra (ful   Stid   Good   Mojo   Max   JD bracket w/ May-Wes Star wheels & M.4466   95   95   92   93   93   93   93   93   93   93			Valion chrome	Std	Good	+Mojo						100	80	87
#8 New 3.5 mm Valion chrome Std Good +Mojo Low (first nJD bracket w/ May-Wes Star wheels & M.4466 92 93 93 93 22 79 65 17 New 3.5 mm JD, worn out Std worn +Mojo Max JD bracket w/ May-Wes Star wheels & M.4466 92 93 93 93 22 79 65 17 New 3.5 mm JD, worn out Std worn +Mojo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 76 81 79 60 70 69 8711 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 76 81 79 60 70 69 8711 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 76 81 79 60 70 69 8711 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 100 33 100 78 17 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 100 33 100 78 17 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 100 33 100 78 17 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 100 33 100 78 17 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 100 30 100 33 100 78 17 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 100 30 130 78 17 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 100 33 100 78 17 New 3.5 mm Valion Ultra (ft Std Good Nohjo Max JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 100 30 130 100 78 17 New 3.5 mm Valion Ultra (ft Std Good Nohjo Was Advanced Nohjo Was	#6	New, 3.5 mm	Valion chrome	Std	Good	+Mojo	Max	JD 7200 bracket & rims w/ Furrow Cruisers installed & OEM spring		78	76	80	83	80
#9 New, 3.5 mm Valion chrome CHRID Good +Mojo Low JD bracket w/ May-Wes Star wheels & CEM spring (no pressure) 76 81 79 60 70 69 71 New, 3.5 mm Valion Ultra (fu. Std. Good No Mojo Max JD bracket w/ May-Wes Star wheels & CEM spring (no pressure) 76 81 79 60 70 69 71 New, 3.5 mm Valion Ultra (fu. Std. Good No Mojo Max JD bracket w/ May-Wes Star wheels & CEM spring (no pressure) 76 81 79 50 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 44 55 71 71 71 71 71 71 71 71 71 71 71 71 71	#7	New, 3.5 mm	Valion chrome	Std	Good	+Mojo	Max	JD 1700 brkt w/ Exapta Thompson whls + toe-out wedges & med spring (M.4466	72	89	81	98	93	91
#10 New, 3.5 mm JD, worn out Std worn +Mojo Max JD bracket IW May-Wes Star wheels & OEM spring (no pressure) 76 81 79 60 70 69 111 New, 3.5 mm Valion Ultra (ft.) \$15 Good No Mojo Max JD bracket W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 33 100 78 111 New, 3.5 mm Valion Ultra (ft.) \$15 Good May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 33 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 30 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 100 30 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 100 30 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 100 30 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 100 30 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 100 30 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 100 30 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 100 30 100 78 110 New May Described W May-Wes Star wheels & OEM spring (no pressure) 100 100 100 100 100 100 100 100 100 10	#8	New, 3.5 mm	Valion chrome	Std	Good	+Mojo	Low (first r	JD bracket w/ May-Wes Star wheels & M.4466	89	95	92	22	67	61
#11 New, 3.5 mm Valion Ultra (ft. Std Good No Mojo No Mojo Low JD bracket w/ May-Wes Star wheels & M.4466 100 100 100 100 100 100 100 100 100 1	#9	New, 3.5 mm	Valion chrome	CIH/RID	Good	+Mojo	Low	JD bracket w/ May-Wes Star wheels & M.4466	92	93	93	22	79	65
#12 0.5" off dia, 3mm JD, wom out Std-gap wom No Mojo Low JD bracket w/ May-Wes Star wheels & OEM spring (no pressure) 100 100 33 100 78 ***see note ***see note star wheels are prone to bending; at least one row in trunning true (same goes for gauge-whi arms, etc). We didn't do anything with parallel arm bushings either.  Note that getting a uniform stand is only half the battle. The sidewalls must be broken up enough that roots can grow easily, and that isn't shown in this demonstration (would need to take it to yield)  We saw major differences in root growth in the 2016 Seeding School demo (planted very wet); some closing wheels caused severe tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but mellow at planting, and no rain afterwards for 3 wks, we again saw severe tomahawk rooting, especially with smooth OEM closing, Schlagels, Furrow Cruisers  This year, with all the rain after planting, the tomahawk rooting doesn't show up however. (Mellowness at planting, and relatively good soil also helped prevent it)  Damp on surface when planting, but certainly not muddy. Good moisture. Passes planted on July 40 of 15" rain a day later, and 21" on July 28-30. Second plot planted on July 31 (damp), had 0.25" rain 3 days later.  Row #12 performed better than #8 & 9 because soil was damp & very sharp/thin blades cut well; May-Wes wheels on OEM spring may have done some seed-to-soil contact.  **Plants in a given distance that had reached V5 (5th leaf within 1.5" of length of 4th leaf) on 6 Aug (19 July planting)  If ot the counts semi-blind. I can remember #1 is COBM, but otherwise I've forgoten what is what by the time I'm doing counts (& I try not to look at the sheet). Not much subjectivity when measuring leaf lengths anyway.  ***#2016 & 2018 trials were planted very wet, so most of the shallow-planted seeds grew and were ahead of the deeper-planted  Corn Belt studies show corn yields 10 - 45% less when planted at 0.5 - 1" vs 1.5 - 2". Paul Jasa's studies show that 3" is sometimes superio	#10	New, 3.5 mm	JD, worn out	Std	worn	+Mojo	Max	JD bracket w/ May-Wes Star wheels & OEM spring (no pressure)	76	81	79	60	70	69
This is a department of the counts are prone to bending; at least one row shell tracks, etc, so it's not research-grade results. (We would swap configurations between rows & do replications for that, but Aufdemberge 2016 provides this Also, MaxEmerge2 row units are prone to bending; at least one row isn't running true (same goes for gauge-whi arms, etc). We didn't do anything with parallel arm bushings either:  Note that getting a uniform stand is only half the battle. The sidewalls must be broken up enough that roots can grow easily, and that isn't shown in this demonstration (would need to take it to yield)  We saw major differences in root growth in the 2016 Seeding School demo (planted very wet); some closing wheels caused severe tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, and no rain afterwards for 3 wks, we again saw severe tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, the tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, the tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, the tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, the tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, and relatively good soil also helped prevent it)  Damp on surface when planting, but certainly not muddy. Good moisture. Passes planted on July 19 had 0.15' rain a day later, and 2.1" on July 28-30. Second plot planted on July 31 (damp), had 0.25" rain 3 days later.  Row #12 performed better than #8 & 9 because soil was damp & very sharp/thin blades cut well; May-Wes wheels on OEM spring may have done some seed-to-soil contact.  "Plants in a given distance that had reached V5 (6th leaf within 1.5" of length of 4th leaf) on 6 Aug (19 July planting)  "Plants that demerged on 6 Aug, (spike to v1) (31 July planting)	#11	New, 3.5 mm	Valion Ultra (fu	Std	Good	No Mojo	Max	JD bracket w/ May-Wes Star wheels & M.4466	45	57	51	71	44	55
This is a department of the counts are prone to bending; at least one row shell tracks, etc, so it's not research-grade results. (We would swap configurations between rows & do replications for that, but Aufdemberge 2016 provides this Also, MaxEmerge2 row units are prone to bending; at least one row isn't running true (same goes for gauge-whi arms, etc). We didn't do anything with parallel arm bushings either:  Note that getting a uniform stand is only half the battle. The sidewalls must be broken up enough that roots can grow easily, and that isn't shown in this demonstration (would need to take it to yield)  We saw major differences in root growth in the 2016 Seeding School demo (planted very wet); some closing wheels caused severe tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, and no rain afterwards for 3 wks, we again saw severe tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, the tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, the tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, the tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, the tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but meliow at planting, and relatively good soil also helped prevent it)  Damp on surface when planting, but certainly not muddy. Good moisture. Passes planted on July 19 had 0.15' rain a day later, and 2.1" on July 28-30. Second plot planted on July 31 (damp), had 0.25" rain 3 days later.  Row #12 performed better than #8 & 9 because soil was damp & very sharp/thin blades cut well; May-Wes wheels on OEM spring may have done some seed-to-soil contact.  "Plants in a given distance that had reached V5 (6th leaf within 1.5" of length of 4th leaf) on 6 Aug (19 July planting)  "Plants that demerged on 6 Aug, (spike to v1) (31 July planting)	#12	0.5" off dia., 3mm	JD, worn out	Std-gap	worn	No Mojo	Low	JD bracket w/ May-Wes Star wheels & OEM spring (no pressure)	100	100	100	33	100	78
Also, MaxEmerge2 row units are prone to bending; at least one row isn't running true (same goes for gauge-whl arms, etc). We didn't do anything with parallel arm bushings either.  Note that getting a uniform stand is only half the battle. The sidewalls must be broken up enough that roots can grow easily, and that isn't shown in this demonstration (would need to take it to yield)  We saw major differences in root growth in the 2016 Seeding School demo (planted very wet); some closing wheels caused severe tomahawk rooting despite rains a week after planting.  In 2017, slightly damp but mellow at planting, and no rain afterwards for 3 wfs., we again saw severe tomahawk rooting, especially with smooth OEM closing, Schalagels, Furrow Cruisers  This year, with all the rain after planting, the tomahawk rooting doesn't show up however. (Mellowness at planting, and relatively good soil also helped prevent it)  Damp on surface when planting, but certainly not muddy. Good moisture. Passes planted on July 19 had 0.15' rain a day later, and 2.1" on July 28-30. Second plot planted on July 31 (damp), had 0.25" rain 3 days later.  Row #12 performed better than #8 & 9 because soil was damp & very sharp/thin blades cut well; May-Wes wheels on OEM spring may have done some seed-to-soil contact!  **Plants in a given distance that had reached V5 (5th leaf within 1.5" of length of 4th leaf) on 6 Aug (19 July planting)  **Plants that had emerged on 6 Aug, (spike to v1) (31 July planting) (visible without stooping over or scratching straw away)  I do the counts semi-blind. I can remember #1 is OEM, but otherwise I've forgotten what is what by the time I'm doing counts (8.1 try not to look at the sheet). Not much subjectivity when measuring leaf lengths anyway.  ***********************************						_						*	***see not	e
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This year, with all the rain after planting, the tomahawk rooting doesn't show up however. (Mellowness at planting, and relatively good soil also helped prevent it)  Damp on surface when planting, but certainly not muddy. Good moisture. Passes planted on July 19 had 0.15" rain a day later, and 2.1" on July 28 -30. Second plot planted on July 31 (damp), had 0.25" rain 3 days later.  Row #12 performed better than #8 & 9 because soil was damp & very sharp/thin blades cut well; May-Wes wheels on OEM spring may have done some seed-to-soil contact.  **Plants in a given distance that had reached V5 (5th leaf within 1.5" of length of 4th leaf) on 6 Aug (19 July planting)  **Plants that had emerged on 6 Aug. (spike to v1) (31 July planting) (visible without stooping over or scratching straw away)  I do the counts semi-blind. I can remember #1 is OEM, but otherwise I've forgotten what is what by the time I'm doing counts (& I try not to look at the sheet). Not much subjectivity when measuring leaf lengths anyway.  ***********************************		We saw major dif	ferences in root	growth in th	ne 2016	Seeding S	chool demo	(planted very wet); some closing wheels caused severe tomahawk rooting despit	e rains a we	ek after pla	nting.			
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