

### VALLEY DAIRY CROPPING SYSTEMS SUSTAINABILITY COMPARISONS, PART III

Soil test P = 200 ppm. All fields located 100 to 200 feet from stream with no riparian buffer. Manure and P loadings from Part II.

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#### B slope Frederick silt loam (slope grade 7%; slope length 150 feet; row grade 2%, T=4) NO END-OF-SLOPE FILTER STRIP OR DEPOSITIONAL AREA

CROPPING SYSTEM DETAILS					RUSLE2 OUTPUT				P INDEX OUTPUT			
Crop Rotation	Full-width tillage (chisel + disk + cultipack)	NMP strategy & manure type (SL = slurry LT = litter)	P <sub>2</sub> O <sub>5</sub> balance (lb/ac/yr)	Soil Cond. Index (SCI)	Soil loss (t/ac/yr)	Sediment delivery (t/ac/yr)	P Index sediment risk score	P Index soluble risk score	P Index overall risk score	P loss risk rating		
1A	Corn silage / rye silage	Every fa + sp P-based, SL	-90	-1.0	9.3	9.3	131	9	140	VH		
1B	Corn silage / rye silage	Every fa + sp N-based, SL+LT	+191	-0.9	8.0	8.0	113	30	143	VH		
2A	Corn silage / rye silage	Every fall P-based, SL	-90	-0.5	7.5	7.5	106	11	117	VH		
2B	Corn silage / rye silage	Every fall N-based, SL+LT	+191	-0.4	6.0	6.0	85	47	132	VH		
3A	Corn silage / rye silage	1 in 3 yrs, fa P-based, SL	-90	-0.2	5.8	5.8	82	12	94	H		
3B	Corn silage / rye silage	1 in 3 yrs, fa N-based, SL+LT	+191	-0.04	4.3	4.3	61	52	113	VH		
4A	Corn silage / rye silage	- P-based, SL	-90	+0.02	4.4	4.4	67	13	80	H		
4B	Corn silage / rye silage	- N-based, SL+LT	+191	+0.2	3.1	3.1	47	54	101	VH		
5A	Permanent grass hay	- P-based, none	-55	+1.2	0.1	0.1	2	0	2	L		
5B	Permanent grass hay	- N-based, LT	+95	+1.2	0.0	0.0	0	23	23	L		
6A	3x alf/gr hay + 3x corn sil/covr	1 in 6 yrs, fa P-based, SL	-62	+0.7	1.0	1.0	15	6	21	L		
6B	3x alf/gr hay + 3x corn sil/covr	1 in 6 yrs, fa P-based, SL+LT	-14	+0.7	1.0	1.0	15	14	29	L		
7A	3x alf/gr hay + 3x corn sil/covr	- P-based, SL	-62	+0.8	0.6	0.6	9	6	15	L		
7B	3x alf/gr hay + 3x corn sil/covr	- P-based, SL+LT	-14	+0.8	0.6	0.6	9	13	22	L		

**C slope Frederick silt loam (slope grade 14%; slope length 100 feet; row grade 4%, T=4)  
NO END-OF-SLOPE FILTER STRIP OR DEPOSITIONAL AREA**

CROPPING SYSTEM DETAILS				RUSLE2 OUTPUT				P INDEX OUTPUT			
Crop Rotation	Full-width tillage (chisel + disk + cultipack)	NMP strategy & manure type (SL = slurry LT = litter)	P <sub>2</sub> O <sub>5</sub> balance (lb/ac/yr)	Soil Cond. Index (SCI)	Soil loss (t/ac/yr)	Sediment delivery (t/ac/yr)	P Index sediment risk score	P Index soluble risk score	P Index overall risk score	P loss risk rating	
1A	Corn silage / rye silage	Every fa + sp P-based, SL	-90	-1.9	20.3	20.3	287	9	296	VH	
1B	Corn silage / rye silage	Every fa + sp N-based, SL+LT	+191	-1.6	17.4	17.4	246	30	276	VH	
2A	Corn silage / rye silage	Every fall P-based, SL	-90	-1.2	16.3	16.3	230	11	241	VH	
2B	Corn silage / rye silage	Every fall N-based, SL+LT	+191	-0.9	13.0	13.0	183	47	230	VH	
3A	Corn silage / rye silage	1 in 3 yrs, fa P-based, SL	-90	-0.7	12.5	12.5	176	12	188	VH	
3B	Corn silage / rye silage	1 in 3 yrs, fa N-based, SL+LT	+191	-0.4	9.2	9.2	130	51	181	VH	
4A	Corn silage / rye silage	- P-based, SL	-90	-0.4	9.7	9.7	148	13	161	VH	
4B	Corn silage / rye silage	- N-based, SL+LT	+191	-0.1	6.6	6.6	101	54	155	VH	
5A	Permanent grass hay	- P-based, none	-55	+1.2	0.1	0.1	2	0	2	L	
5B	Permanent grass hay	- N-based, LT	+95	+1.2	0.1	0.1	2	23	25	L	
6A	3x alf/gr hay + 3x corn sil/covr	1 in 6 yrs, fa P-based, SL	-62	+0.6	2.1	2.1	32	6	38	L	
6B	3x alf/gr hay + 3x corn sil/covr	1 in 6 yrs, fa P-based, SL+LT	-14	+0.6	2.1	2.1	32	14	46	M	
7A	3x alf/gr hay + 3x corn sil/covr	- P-based, SL	-62	+0.7	1.3	1.3	20	6	26	L	
7B	3x alf/gr hay + 3x corn sil/covr	- P-based, SL+LT	-14	+0.7	1.2	1.2	18	13	31	M	