Assessing the Eligibility (Opportunities)

Step 2 B

Feed Management

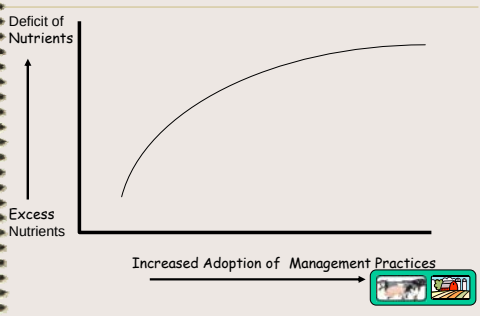
A Key Ingredient in Livestock and Poultry Nutrient Management

Next Step

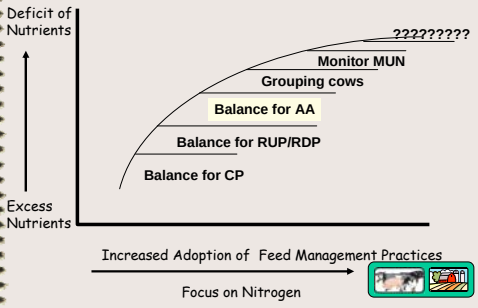
- Use the opportunity and eligibility checklists to determine the relative opportunity for feed management to impact

Whole Farm Nutrient Management or increase net farm income by feeding more efficiently.

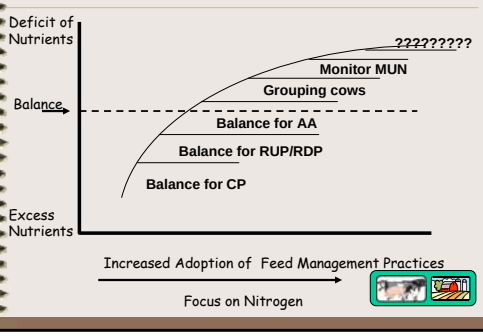
Improvement in Whole Farm Nutrient Balance

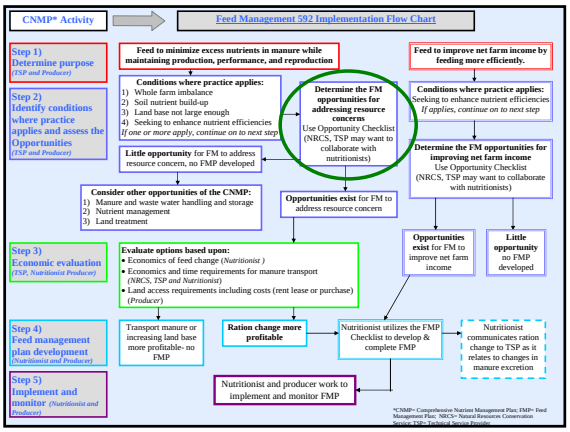


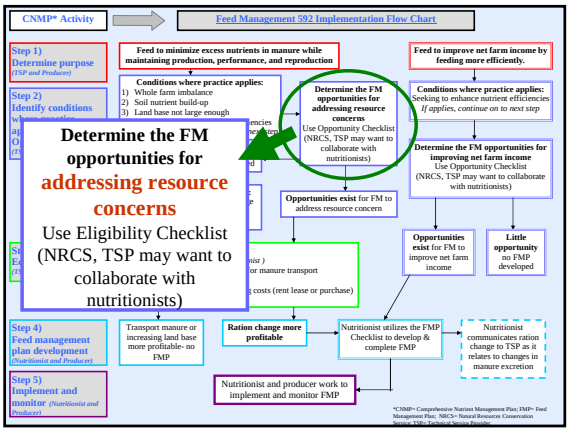
Improvement in Whole Farm Nutrient Balance

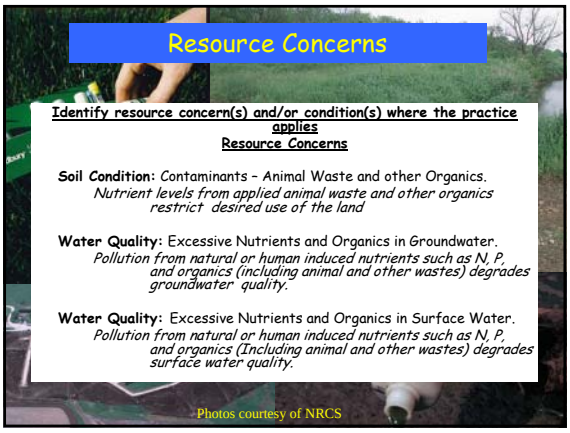


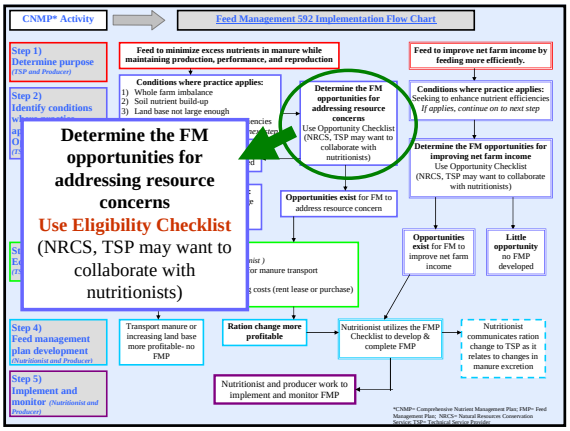
Improvement in Whole Farm Nutrient Balance

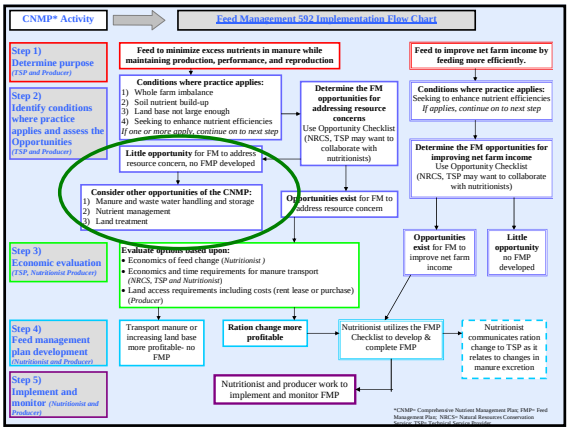




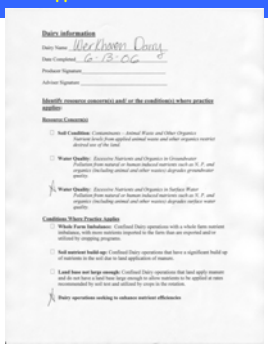








Dairy Opportunity Checklist to determine opportunities for a FMP:



Implementation Tools- Opportunity Checklist

Implementation Tools- Opportunity Checklist

Issue	Little opportunity for improvement	Some opportunity for improvement	Moderate opportunity for improvement	Lots of opportunity for improvement	Benefit to the environment
Diet Composition (for ingredients or diets analyzed for nutrient composition: i.e. CP, P, K, starch, ADF etc.)	Yes, routinely	Only when a new feed or forage is fed	Not regularly analyzed	Not analyzed	N, NH$_3$, P
Crude protein (CP) in diet (DM basis):					
High producing cows *	16-16.9%	17-17.9%	18-18.5%	18.5% or greater	N, NH$_3$
Low producing cows	13-13.9%	14-14.9%	15-15.9%	16% or greater	
Dry cows	11-11.9%	12-12.9%	13-13.9%	14% or greater	
Phosphorus in diet (DM basis):					
High producing cows *	0.38-0.39%	0.40-.41%	0.42-0.43%	0.44% or greater	P
Low producing cows *	0.32-0.34%	0.35-0.36%	0.36-0.37%	.38% or greater	P
Dry cows	0.25%		<0.25%		P
Potassium in Diet (DM basis):	Fed at NRC recommendation (1%)	Fed at 25% above recommended	*Fed at 40% above recommended	Not known	K

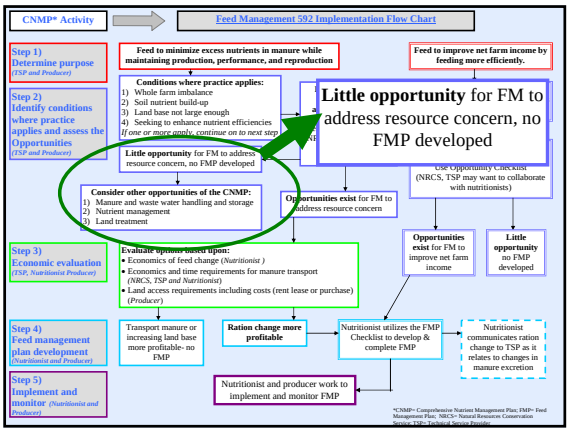
*Holstein cows in mid-lactation and ration is balanced for RDP/RUP (NRC, 2001)

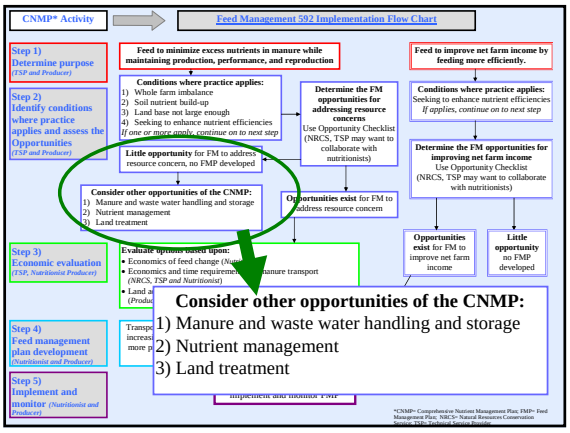
Does producer routinely:	Yes/No
Targeting Nutrient Requirements	
Formulate 3 or more rations to meet nutrient requirements of cattle (high producing, medium producing, low producing lactating)	Yes
Run lab analysis of Crude Protein content of ingredients or ration to verify or determine CP content of feed	Yes
Analyze CP/ RUP/ RDP content of ingredients or ration using values provided by seller or from NRC "Nutrient Composition of Feeds".	Yes
Determine dry matter intake	Yes

Ration Balancing	
Reformulate rations routinely for dry matter content when using silages or other high water content feeds	Yes
Reformulate rations routinely for changes in forage quality (NDF, ADF, CP, P, starch, DM)	Yes
Balance rations using either rumen degradable protein or amino acid content	Yes

Ration Management Practices	
Train or retrain employees in feeding practices at least twice per year?	Yes
Use TMRs	Yes
Evaluate particle size of TMR using Penn State TMR Particle Separator regularly	Yes
Follow manufacturer's/ nutritionist's suggested order of loading feeds in mixer	Yes
Monitor loading and scale accuracy at least annually	Yes
Clean feedbunks a minimum of 3x/ week	Yes
Clean water troughs at least weekly	Yes

Forage Management Practices	
Pack silage tightly, cover quickly, and use a proven silage additive	Yes
Store different quality forages separately to match nutrient level of forages to nutrient requirement of animal	Yes
Analyze all silages for fermentation profile and fiber digestibility	Yes
Utilizes kernel processing equipment	Yes




CNMP* Activity
Feed Management 592 Implementation Flow Chart
Step 1) Determine purpose (TSP and Producer)
Feed to minimize excess nutrients in manure while maintaining production, performance, and reproduction
Feed to improve net farm income by feeding more efficiently.
Step 2) Identify conditions where practice applies and assess the Opportunities (TSP and Producer)
Conditions where practice applies:
1) Whole farm imbalance
2) Soil nutrient build-up
3) Land base not large enough
4) Seeking to enhance nutrient efficiencies
If one or more apply, continue on to next step
Determine the FM opportunities for addressing resource concerns
Use Opportunity Checklist (NRCS, TSP may want to collaborate with nutritionists)
Conditions where practice applies:
Seeking to enhance nutrient efficiencies
If applies, continue on to next step
Little opportunity for FM to address resource concern, no FMP developed
Determine the FM opportunities for improving net farm income
Use Opportunity Checklist (NRCS, TSP may want to collaborate with nutritionists)
Consider other opportunities of the CNMP:
1) Manure and waste water handling and storage
2) Nutrient management
3) Land treatment
Opportunities exist for FM to address resource concern
Opportunities exist for FM to improve net farm income
Little opportunity no FMP developed
Step 3) Economic evaluation (TSP, Nutritionist Producer)
Evaluate options based upon:
• Economics of feed change (Nutritionist)
• Economics and time requirements for manure transport (NRCS, TSP and Nutritionist)
• Land access requirements including costs (rent lease or purchase) (Producer)
Step 4) Feed management plan development (Nutritionist and Producer)
Step 5) Implement and monitor (Nutritionist and Producer)
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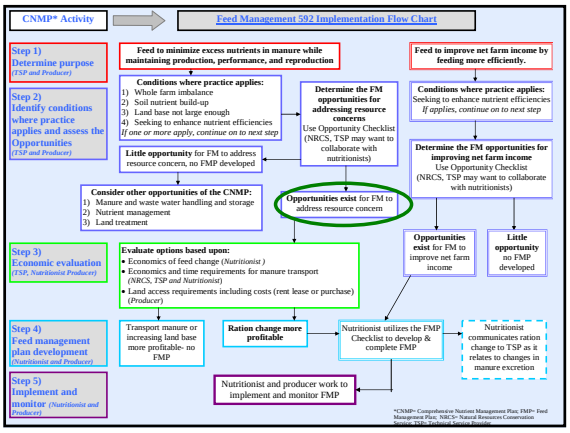
*CNMP= Comprehensive Nutrient Management Plan; FMP= Feed Management Plan; NRCS= Natural Resources Conservation Service; TSP= Technical Service Provider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Step 4) Feed management plan development (Nutritionist and Producer)
Transport manure or increasing land base more profitable- no FMP
Ration change more profitable
Nutritionist utilizes the FMP Checklist to develop & complete FMP
Nutritionist communicates ration change to TSP as it relates to changes in manure excretion
Step 5) Implement and monitor (Nutritionist and Producer)
Nutritionist and producer work to implement and monitor FMP
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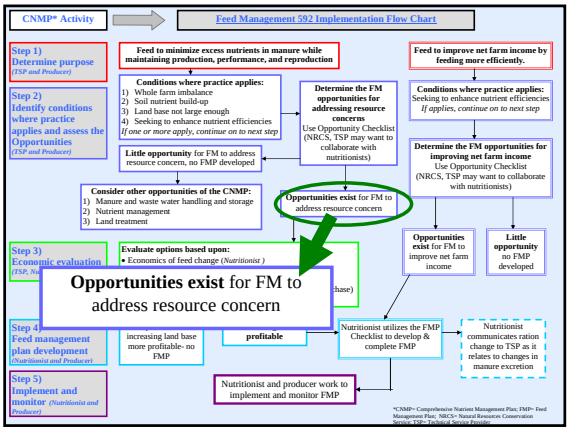
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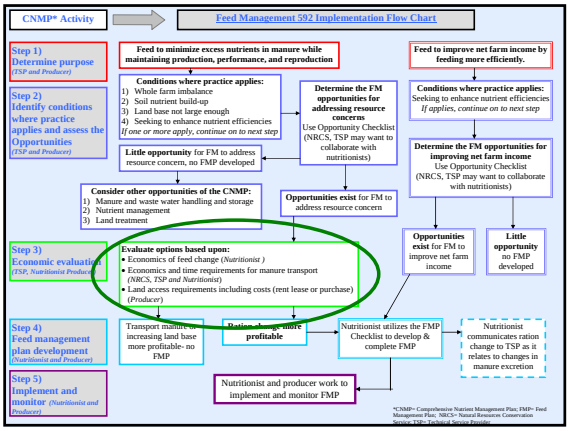
Next Step
• Determine if Feed Change is economical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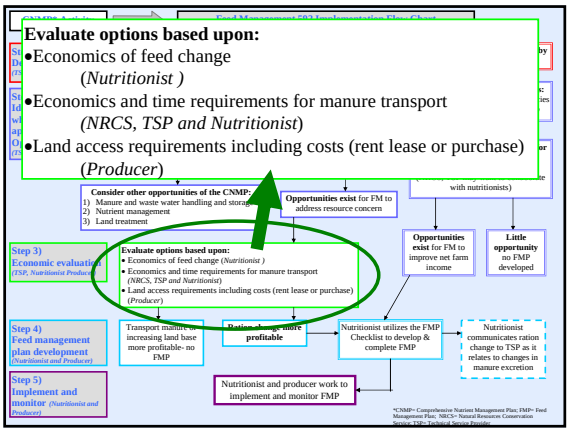
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