

***How Do You Get the Full Benefit of Purina Mills Technology  
for Your Stockers or Yearlings?***

In order to choose the feeding program best suited to your stockers/growers, you need only to determine the quality of your forage base and the level of gain desired.

1. Forage Quality

Grass or hay makes up 80 to 100 percent of your stocker's diet depending on the quality and availability of your forage.

By understanding forage quality and how it changes over time, we can determine if your forage is meeting your stocker's needs and provide the right products at the right time.

2. Level of Gain Desired

A specific daily feeding rate can then be established to achieve the performance goals you set for your stocker or growing cattle.

You can choose from hand-fed [4-Square Brand Stocker/Grower Products](#) or select from the [Controlled Intake Systems](#), including Accuration/Cattle Limiter, Gras-S-Bloc and Sup-R-Lix.

It is also important to feed your cattle a well-balanced [mineral supplement](#). Purina Mills makes it easy by developing many excellent beef mineral products, which are specifically formulated for the mineral deficiencies commonly found in soils and pastures.



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## Forage Quality

**Forage is your greatest resource.** Cattle can survive on a diet consisting exclusively of grass or hay. However, variability of forage quality due to environmental changes (rainfall, soil profile, temperature, etc.) and the changing growth stages of the forages result in forage deficiencies and a lack of consistent nutrition delivered to the animal. Our programs are designed to help you improve animal performance by extracting the most value possible from this resource (weight gain, conception rates, weaning weights) while enhancing forage utilization.

Grass or hay makes up 80 percent to 100 percent of your cow's diet depending on the quality and availability of your forage. By understanding forage quality and how it changes through time, we can effectively know if your forage is meeting her needs and provide the right products at the right time before and after calving to ensure cow performance is adequate for calf growth and timely rebreeding.

***Lush: Very green, high moisture with lots of leaf material.***



All pasture forages go through stages of growth. Forage is very lush early in the growing season, and after each time hay has been cut, provided adequate rainfall and growing conditions exist. Pasture at this stage is all leaf/no stem, and high in quality (protein, energy, and minerals).

***Transitional: Less leaf material with some development of stem and seed heads.***

As forage continues to grow, it goes through a stage of transition. There is less leaf and more stem development. At the same time, protein, energy, and mineral content begin to drop rapidly.



***Mature: Poor quality with mostly seed heads and stems, very little leaf material.***



Forage then proceeds to full maturity. There is a high proportion of stems and significantly less leaf material, with seed heads fully developed. Forage may still be green at this stage and then will proceed to dormancy.



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## Level of Gain

To determine the level of gain performance you desire from 0.5 to 2.0 pounds/head/day, please reference the following chart:



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Product Type	Forage Quality	Gain Per Head Per Day			
		0.5 lb.	1.0 lb.	1.5 lbs.	2.0 lbs.
Accuration/ Cattle Limiters	Lush	Hi-Mag or 12:12 Mineral	Hi-Mag or 12:12 Mineral	Hi-Mag or 12:12 Mineral	1-3 lbs. Accuration/ Cattle Limiter
	Transitional	12:12 Mineral	1-3 lbs. Accuration/ Cattle Limiter	3-4 lbs. Accuration/ Cattle Limiter	4-5 lbs. Accuration/ Cattle Limiter
	Mature	2-3 lbs. Accuration/ Cattle Limiter	4-5 lbs. Accuration/ Cattle Limiter	6-7 lbs. Accuration/ Cattle Limiter	8-12 lbs. Accuration/ Cattle Limiter
Sup-R-Lix	Lush	Hi-Mag or 12:12 Mineral	Hi-Mag or 12:12 Mineral	Hi-Mag or 12:12 Mineral	2-4 lbs. Sup-R-Lix 1
	Transitional	12:12 Mineral	2-4 lbs. Sup-R-Lix 1	4-6 lbs. Sup-R-Lix 1 Sup-R-Lix 2	5-7 lbs. Sup-R-Lix 1 Sup-R-Lix 2
	Mature	2-4 lbs. Sup-R-Lix 1	4-6 lbs. Sup-R-Lix 1	6-8 lbs. Sup-R-Lix 1 Sup-R-Lix 2	Choose another alternative
Gras-S-Bloc	Lush	Hi-Mag or 12:12 Mineral	Hi-Mag or 12:12 Mineral	Hi-Mag or 12:12 Mineral	3-4 lbs. Gras-S-Bloc
	Transitional	12:12 Mineral	3-4 lbs. Gras-S-Bloc	4-6 lbs. Gras-S-Bloc	5-7 lbs. Gras-S-Bloc

	Mature	3-4 lbs. Gras-S-Bloc	5-6 lbs. Gras-S-Bloc	Choose another alternative	Choose another alternative
	Lush	Hi-Mag or 12:12 Mineral	Hi-Mag or 12:12 Mineral	Hi-Mag or 12:12 Mineral	3-4 lbs.4- Square Brand Stocker Supreme
4-Square Brand Stocker/ Grower Supreme	Transitional	12:12 Mineral	Hi-Mag or 12:12 Mineral	4-6 lbs.4- Square Brand Stocker Supreme	5-7 lbs.4- Square Stocker Grower Supreme
	Mature	3-4 lbs.4- Square Brand Stocker Supreme	5-6 lbs.4- Square Brand Stocker Supreme	7-8 lbs.4- Square Brand Stocker Supreme	Choose another alternative



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## 4-Square Brand Stocker/Grower Chow Products

Purina Mills has designed a line of hand-fed range products to address the differences in desired nutrient value and producer preferences. These balanced protein and energy supplements enhance forage digestion, allowing your stockers to get more of their nutritional needs from your homegrown forage.

The following chart lists our line of range cubes and their nutritional specifications.

Stocker/Grower Chow Products						
Designed for Stockers						
4-Square Brand Chow Products	Protein	NPN	Fat	Fiber	Phos	Vit A
Stocker/Grower Supreme 12N	12.0	0.0	2.5	10.0	0.5	10,000
Stocker/Grower Performance 12N	12.0	0.0	2.0	15.0	0.5	7,000
Stocker/Grower Supreme 14N	14.0	0.0	2.5	9.0	0.5	10,000
Stocker/Grower Performance 14N	14.0	0.0	2.0	15.0	0.5	7,000
Stocker Supreme 20N	20.0	0.0	2.5	9.0	0.7	20,000
Stocker Performance 20N	20.0	0.0	2.0	10.0	0.7	20,000
Stocker Supreme 38N	38.0	0.0	2.5	12.0	1.0	20,000
Stocker Performance 38N	38.0	0.0	2.0	15.0	0.9	20,000



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## Controlled Intake Systems Stocker Products

Please select from the following products formulated with **IM Technology™**: [Accuration/Cattle Limiter](#), [Sup-R-Lix](#) and [Gras-S-Bloc](#).

### Accuration/Cattle Limiter

Designed specifically for growing stockers or yearlings. Use in combination with the 4-Square Feeding Program for developing stockers.



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### Controlled Intake Systems Featuring *IM Technology™* Stocker/Grower Products Controlled Intake...Predictable Performance

Accuration®	Protein	NPN	Fat	Fiber	Ca	P	Vit A
Cattle Limiter LW	12.0	1.5	4.0	7.0	0.40-0.90	0.5	3,000
Accuration GS 400	12.0	2.0	5.0	5.0	0.50-1.00	0.5	7,500
Cattle Limiter 1	12.0	2.0	5.0	7.0	0.50-1.00	0.7	3,000
Accuration GS 500	14.0	4.5	6.0	5.0	0.75-1.25	0.6	8,000
Cattle Limiter 2	12.0	4.5	5.0	7.0	0.50-1.00	0.5	3,000
Cattle Limiter 2.5	13.0	4.8	5.0	7.0	0.50-1.00	0.5	5,000
Accuration GS 600	14.0	5.0	7.0	5.0	0.60-1.10	0.7	9,000
Cattle Limiter 3	14.0	5.0	7.0	5.0	0.60-1.10	0.7	9,000
Accuration GS 700	14.0	6.5	8.0	5.0	0.50-1.50	0.8	10,500
Cattle Limiter 4	14.0	6.5	8.0	7.0	0.60-1.10	0.8	10,500

Accuration GS 800	16.0	7.5	9.0	5.0	0.70- 1.70	0.9	12,000
Cattle Limiter 5	16.0	7.5	9.0	5.0	0.70- 1.70	0.9	12,000
Cattle Limiter 6	20.0	9.0	9.0	7.0	1.00- 1.50	10.0	15,000

### Benefits of Accuration/Cattle Limiter Are Proven with Stocker Cattle

Purina Mills compared all our Controlled Intake Systems to our highest-quality hand-fed range cubes in large, multi-year feeding studies.

Trial 1 shows the benefits of **IM Technology™** for stocker cattle utilizing Purina Mills' Controlled Intake Systems. Note that cattle consuming essentially the same amount of supplemental feed per head per day had dramatic differences in performance. Though the Accuration/Cattle Limiter cattle consumed only 0.4 lb. more per day, they gained almost .6 lb. more per day. That great conversion (of Accuration and grass to daily gain) can only be explained by the greater and more efficient use of the available forage.

Trial 1	Accuration/Cattle Limiter	Grain Mix
Average Starting Weight	412	400
Days on Feed	66	66
Average Ending Weight	532	481
Average Gain per Head	120	81
Average Daily Gain	1.82	1.23
Average Daily Feed Consumption	4.4	4.0
Feed Cost per Head	\$28.80	\$11.88
Value of Head	\$120	\$81
Net Return	\$91.20	\$69.12

In Trial 2, similar results were obtained. The Accuration cattle consumed less feed per head per day and still achieved greater gain performance than hand-fed cattle receiving a 30 percent higher level of supplemental intake. The result is more profit per head on the Accuration/Cattle Limiter program.

Trial 2	Accuration/Cattle Limiter	Hand Fed
Average Starting Weight	656	666
Days on Feed	65	65
Average Ending Weight	823	815
Average Daily Gain	2.57	2.28
Average Daily Feed Consumption	6.07	8.00
Cost/Pound of Gain	\$0.196	\$0.193
Value of Gain	\$133.60	\$119.20
Net Return/Head	\$100.87	\$90.44

Accuration also worked effectively against grass and minerals only. In Trial 3, note that with Accuration/Cattle Limiter, average daily gain was higher by 0.4 lb. per head per day, and total return was increased by \$12.41 per head.

Trial 3	Accuration/Cattle Limiter	Mineral
Average Starting Weight	647	617
Days on Feed	59	59
Average Ending Weight	809	754
Average Daily Gain	2.75	2.32
Average Daily Feed Consumption	3.49 lbs.	2.37 ounces
Cost/Pound of Gain (Pasture/Supp.)	\$0.274	\$0.267
Value of Gain	\$135.27	\$114.81
Net Return/Head	\$90.84	\$78.43

Accuration even performs against no supplement on wheat pasture. In Trial 4, we were able to increase stocking rate by 28 percent, increase profit per acre by \$3.03 and increase profit per head by \$2.24. More production and increased net return on fixed land cost.

Trial 4	Accuration/Cattle Limiter	Wheat Pasture Only
Number of Head	340	120
Acres of Pasture	620	300
Average Starting Weight	470	470
Days on Feed	122	122
Average Ending Weight	740	640
Average Daily Gain	2.21	1.39
Average Daily Feed Consumption	4.3	0
Cost/Pound of Gain (Wheat and Accuration)	\$0.49	\$0.50
Profit/Head	\$14.65	\$12.41
Profit/Acre	\$7.95	\$4.92
Beef Produced/Acre	146.5 lbs.	67.3 lbs.

### Sup-R-Lix

Designed specifically for growing stockers or yearlings. Sup-R-Lix, a molasses-based protein supplement, provides a superior balance of all essential nutrients—energy, protein, vitamins and minerals. Please see the following chart to determine the proper Sup-R-Lix for your herd.

### Benefits of Sup-R-Lix Are Proven in Stocker Cattle.

The key point to note in Trials 5 and 6 is the savings you can realize with the far fewer feed deliveries required with Sup-R-Lix. Trial 5 indicates similar average daily gains and cost per pound of gain with Sup-R-Lix-fed cattle that actually weighed 100 lbs. more although their intake on Sup-R-Lix was only 0.3 lb. higher.

Trial 5	Sup-R-Lix	Range Cubes

Number of Head	173	96
Average Starting Weight	549	447
Days on Feed	131	131
Average Ending Weight	857	767
Average Daily Gain	2.42	2.44
Average Daily Feed Consumption	2.13	1.75
Feed Cost/lb. of Gain	\$0.066	\$0.060
Number of Feed Deliveries	16	56

In Trial 6, the Sup-R-Lix intake was 0.7 lb. less per head per day versus the range cubes, and cost per pound of gain was less for Sup-R-Lix.

Trial 6	Sup-R-Lix	Range Cubes
Number of Head	192	192
Average Starting Weight	380	435
Days on Feed	164	164
Average Ending Weight	700	828
Average Daily Gain	1.95	2.39
Average Daily Feed Consumption	2.19	2.85
Feed Cost/lb. of Gain	\$0.082	\$0.096
Number of Feed Deliveries	13	70

#### Gras-S-Bloc

Gras-S-Bloc is the Purina Mills Sup-R-Block product to best fit the needs of your stockers and yearlings on good-to fair-quality forage. Please use the chart below to determine the proper Gras-S-Bloc for your herd.

**Controlled Intake Systems**  
**Featuring *IM Technology*<sup>™</sup>**  
**Stocker/Grower Products**  
**Controlled Intake...Predictable Performance**

Sup-R-Lix®	Protein	NPN	Fat	Fiber	Ca	P	Vit A
Sup-R-Lix 1	16.0	14.0	5.0	0.0	0.75- 1.25	0.8	7,500
Sup-R-Lix 2	24.0	23.0	5.0	0.0	1.75- 2.25	0.8	15,000
Gras-S-Bloc®	Protein	NPN	Fat	Fiber	Ca	P	Vit A
Gras-S-Bloc BVT	14.0	4.0	5.0	4.0	0.75- 1.25	0.5	2,500
Gras-S-Bloc 20	20.0	7.0	5.0	4.0	1.25- 1.75	0.8	15,000



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## Incorporating Minerals in Your Cattle's Nutrition

**Minerals Are Too Important. Skimp somewhere else.** Minerals are as vital to cattle as grass, water or air. They play a part in essentially every aspect of growth and performance, such as reproduction, bone structure, muscle development, milk production, digestion, and metabolism.



Mineral deficiencies can really add up and hurt in the long run, so don't take those chances with your cattle. Have you experienced any of the following situations in your herd?

Low calf weaning weights?

Reduced calf crop?

Small or weak calves?

Cows that milk poorly?

Lame or stiff cattle?

Cows come in heat later?

Death due to grass tetany?

Problems like these can be directly related to the amount and quality of mineral being fed to your cattle.

The following chart helps to clearly show what can happen if cattle get inadequate amounts, or unbalanced amounts, of certain key minerals.

	P	Ca	NaCl	Mg	K	S	Fe	Cu	Co	I	Zn	Mn	Se
Lower Conception Rate		•	•								•	•	
Decreasing Calving Rates		•		•	•		•		•				



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Reduced Milk Production	•	•	•	•	•	•	•	•
Lameness or Stiffness		•		•	•		•	•
Slow Weight Gains	•		•		•	•	•	•
Reduced Weaning Weights	•			•	•	•	•	•
Smaller or Weaker Calves	•	•		•	•	•	•	•
Poor Overall Herd Health	•	•	•		•	•	•	•
Grass Tetany		•		•				
Retained Placenta	•							
Milk Fever		•						
Change in Hair Coat							•	
More Days to First Heat	•					•		•

**Key:** P=Phosphorus, Ca=Calcium, NaCl=Sodium Chloride, Mg=Magnesium, K=Potassium, S=Sulfur, Fe=Iron, Cu= Copper,Co=Cobalt,I=Iodine, Zn=Zinc, Mn=Manganese, Se=Selenium

**Get the Minerals with Special Abilities**

As with anything you feed, the success of your minerals product will depend on the balance of ingredients and the quality of the formulation. And, of course, if cattle eat it. Purina Minerals have what it takes to help cattle

perform better, thanks to our many exceptional abilities:

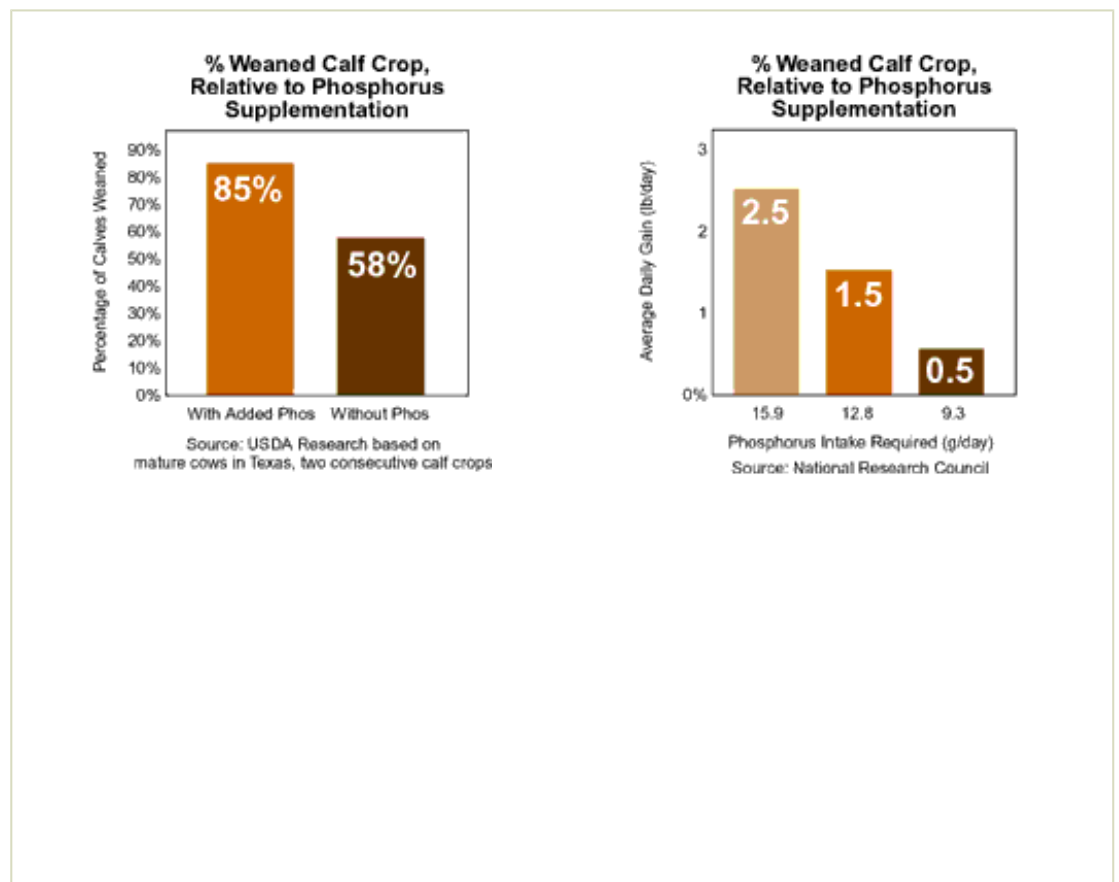
**Bioavailability:** High biological availability of nutrients means the minerals are readily absorbed and utilized by cattle. Purina minerals are formulated with sulfates instead of oxides because the sulfate form of trace minerals is more available. Our high-quality sulfate trace minerals assure excellent bioavailability to make up for the trace mineral deficiencies of your forage.

**Predictability:** By knowing what cattle nutrient requirements are, Purina develops products that accurately meet the mineral deficiencies of different forages. That assures cattle of consistently eating the right amounts of minerals and getting the right balance of nutrients in every mouthful, every day. We're so sure Purina Mills minerals will deliver the proper rates of nutrition, they're guaranteed.

**Palatability:** Part of our confidence in the effectiveness of Purina mineral products comes from knowing cattle will eat them. By using only top-quality ingredients and having higher palatability in our products, the cattle consume the minerals free choice as often as needed.

**Reliability:** Since 1926, Purina Mills has had a commitment to research. At our 1188-acre research facility near Gray Summit, Missouri, as well as with contract facilities, universities, and producers throughout the country, Purina has conducted thousands of research trials concerning animal nutrient requirements, ingredient quality, nutrient availability, and management systems to develop programs that optimize animal performance. In short, you can rely on Purina to provide the research-proven programs and products to meet the needs of your beef cattle operation.

Using the proper Purina Mills' mineral product can yield big results in the performance in your cattle.



**Figure 1** shows the effects of inadequate phosphorus supplementation as it relates to a weaned calf crop. The herd without added phosphorus had dramatically lower reproductive performance: only 58 percent weaned calves compared to 85 percent in the herd that had phosphorus supplementation—roughly a third fewer calves to market.

**Figure 2** shows that higher gains in 500-pound calves require greater amounts of phosphorus. Obviously, phosphorus is a key factor in cattle performance.

### **Tell Us Where Your Cattle Are, We'll Tell You What They Need.**

Feeding cattle minerals is a simple step; however, it's also a complex one because there are so many different metabolic interactions to consider. To get the best results, you should always know which minerals to feed and when, but how can you tell?

As America's leader in cattle nutrition, Purina Mills has developed many excellent beef mineral products which are specifically formulated for the mineral deficiencies commonly found in the soils and pastures of this area.

By knowing exactly what the pastures are like in your area, we can recommend a product that most directly balances the mineral content of whatever the forage type and quality your cattle are eating right now.

There are six main "families" of mineral supplements to address every cattle mineral need:

#### **Purina Mills Cattle Mineral 12:12**

One of our best mineral products, 12:12 is a premium balanced blend with 12% calcium and 12% phosphorus. Its high phosphorus level meets vital needs of range cattle on almost all pasture conditions. Highly palatable and made for year-round feeding, Cattle Mineral 12:12 is formulated for higher consumption when forage is of poorer quality and lower when forage is of better quality. Because phosphorus is the first limiting macro mineral, excluding salt, the 1:1 Ca:P ratio of 12:12 mineral products makes them the cattleman's minerals of choice.

#### **Purina Mills Range Mineral**

Our balanced Range Mineral products contain various ratios of calcium and phosphorus and generally provide enough salt to meet cattle requirements. All have top-quality ingredients with high biological availability and excellent palatability. The higher level of salt is ideal for free-choice feeding and eliminates the need to add salt separately. Consumption of Purina Mills Range Minerals will be higher than 12:12 and still meet cattle needs on pasture all year-round.

#### **Purina Mills High-Magnesium**

This beneficial family of products has the same important features of quality and nutrient balance as our other minerals, plus the added value of higher levels of magnesium. High-Mag minerals provide the essential supplementation of magnesium needed for cattle grazing lush green pastures where magnesium deficiency is a concern. As with all other families of Purina Mills beef mineral products, High-Magnesium is also available with added selenium for cattle on selenium-deficient soils.

#### **Purina Mills Fescue Mineral**

Our Fescue Minerals are formulated specifically for the unique needs of cattle grazing fescue pastures or consuming fescue hay. Vitamin A is fortified at higher levels, and two different levels of magnesium are offered to address seasonal changes in fescue quality. In addition, our most popular Fescue Mineral option contains chlortetracycline.

#### **Purina Mills Livestock Mineral**

One of our most economical products is Purina Mills Livestock Mineral. This high quality, multipurpose nutritional supplement meets the basic balanced mineral requirements of cattle on grass, in a variety of forage conditions. That gives you an extra margin of safety against trace mineral deficiencies, and still provides adequate phosphorus when consumed at desired intake levels. Added salt increases the convenience of free-choice feeding.

#### **Purina Mills Special-Use Family**

Among the many minerals offered by Purina Mills, several are called "Special Use" products because of their unique formulations for certain situations. Those may include minerals that contain feed additives such as Rumensin®, Bovatec®, Gainpro®, or chlortetracycline. The mineral itself is still a high-quality, balanced product, but with the special added ingredients needed to meet a particular requirement.



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