SarTec®

SarTemp® and **SarTemp® SG** offer grain processing benefits which have been verified by four university feeding trials.

This Brochure Includes Information About:

* **SarTemp® Grain Conditioning - Feeding Trials:**
  - **Feeding trial #1 - University of California, El Centro.**
  - **Feeding trial #2 - University of Nebraska, Scottsbluff.**
  - **Feeding trial #3 - University of Nebraska, Scottsbluff.**
  - **Feeding trial #4 - University of California, El Centro.**
  - **Feeding trial #5 - Commercial Feedlot, Texas.**

* **SarTec® Automatic Computerized Control System.**

Yucca extract contain natural surfactants (saponins)

YouTube

On You Tube search for *SarTec Corporation* to learn more about SarTec's RSF program and other products.

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Feeding Trial #1 - University of California, El Centro

Trial Design:

- Seventy-eight crossbred steers were used in a comparative slaughter trial to study grain conditioning with **SarTemp**.
- All steers were implanted with Synovex-S® at the beginning of the trial.
- The basil diet contained Monensin®.

Four Corn Processing Treatments were Compared:

1. Rolled
2. Steam-Flaked
3. **SarTemp**® Conditioned and Rolled
4. **SarTemp**® Conditioned and Steam-Flaked

Grain Conditioning Procedure:

- 7.5% water (w/w) was added to the corn (set time = 2 hours).
- **SarTemp**® was applied to the corn, with the water, at the rate of five fluid ounces per ton of grain.

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Processed Grain Improved Feed Efficiency

Table 1. Steer Performance.

	Dry Rolled Control	Dry Rolled SarTemp	Steam Flaked Control	Steam Flaked SarTemp
Initial Wt. (lb)	499.4	503.8	501.6	506.0
Final Wt. (lb.)	939.4	924.0	913.0	932.8
ADG (lb./day)	3.48	3.34	3.26	3.39
DM Intake (lb./day)	18.48	17.31	16.46	16.79
Feed(lb.)/Gain (lb.)	5.33	5.20	5.05	4.97
Percent Improvement		2.5%		1.6%

Feeding Trial #1 - University of California, El Centro

Results (cont.):

Figure 1. Influence of **SarTemp** Conditioning on the Moisture Content of Rolled and Steam-Flaked Corn.

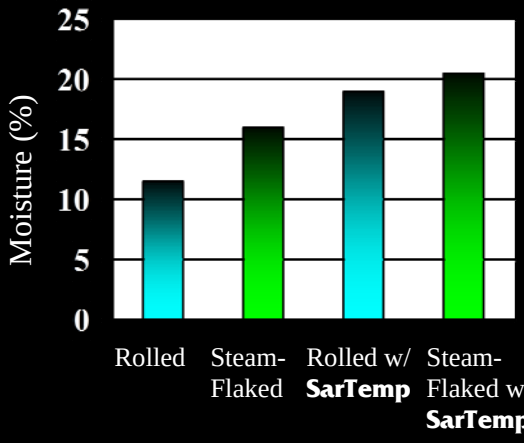
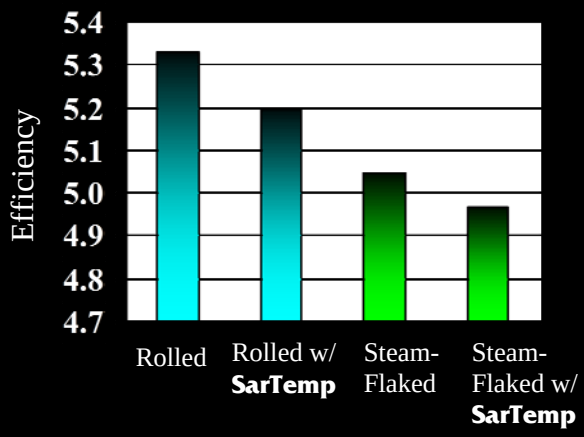


Figure 2. Influence of **SarTemp** Conditioning on Feedlot Performance of Either Rolled or Steam-Flaked Corn.



Metabolism Study - Feeding Trial #1

Design:

Dietary treatment effects on ruminal and total tract digestion were evaluated in a metabolism trial involving four ruminally and intestinally cannulated steers.

Results:

- **SarTemp** conditioning improved ruminal microbial efficiency by **15.8 %.**
- **SarTemp** conditioning improved total tract starch digestion by **3.5 %.**
- The **SarTemp** conditioned corn had a greater intestinal digestibility than the dry corn.

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Feeding Trial #2 - University of Nebraska, Scottsbluff

Design:

- Seventy-eight crossbred steers were randomly assigned to twelve pens.
- All steers were implanted with Synovex-S® at the beginning of the trial.
- The protein supplement contained Rumensin® and Tylan®.

Three Grain Processing Treatments were Compared:

1. Corn - Dry rolled
2. Corn - Conditioned with a non-yucca based grain conditioner
3. Corn - Conditioned with **SarTemp®**

Results:

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Table 2. Performance of Finishing Cattle Fed Corn Processed with **SarTemp** or a non-Yucca Based Grain Conditioner.

SarTemp Usage Rate Oz/Ton =	5.5
Assumed Grain Moisture =	22.00%
Assumed Fat Cattle Price =	$0.61
Assumed Ration Cost/Ton (as fed) =	$130.00

	Dry Roll Control	Dry Roll SarTemp	Dry Roll Non-Yucca	Dry Roll SarTemp
Number of Pens per Treatment	4	4	4	4
Number Steers per Treatment	26	28	26	28
Initial Wt. (lb)	857	864	859	864
Final Wt. (lb.)	1334	1391	1358	1391
Added Value for Gain/Steer		$30.50		$17.08
ADG (lb./day)	3.41	3.80	3.64	3.80
DM Intake (lb./day)	21.50	22.30	21.40	22.30
Efficiency - Feed (lb.)/Gain (lb.)	6.47	5.87	5.91	5.87
Percent Inprovement		10.2%		0.7%
Ration Cost/Ton (Dry Matter)	$166.67	$166.67	$166.67	$166.67
Days on Feed	139	139	139	139
Percent of Grain in Ration	85%	85%	85%	85%
SarTemp Cost/Steer		$2.35		$2.35
NYBGC Cost/Steer			$0.42	
Total Feed Cost/Steer	$249.04	$260.66	$248.30	$260.66
Total Net Added Value for Feed and Gain		$18.88		$4.73

Feeding Trial #3 - University of Nebraska, Scottsbluff

Design:

- Sixty steers, using 3 pens per treatment, were fed a basil diet of 85 % dry rolled corn, 10 % corn silage and 5 % of a 40 % protein supplement, all on a dry basis.
- All steers were implanted with Synovex-S® at the beginning of the trial.
- The protein supplement contained Rumensin® and Tylan®.

Treatment:

SarStart D - a dry yucca-based premix, was added to the mixer wagon at the rate of 0.1 lbs. per head per day.

Results:

Adding the **SarStart D** to the dry corn improved the daily gain by 11.5 % and feed

SarStart® D

Table 3. Steer Performance when Fed **SarStart D**.

SarTemp Usage Rate Oz/Ton =	5.5
Assumed Grain Moisture =	22.00%
Assume Fat Cattle Price =	$0.61
Assumed Ration Cost/Ton (as fed) =	$130.00

	Control	SarStart D
Number of Pens per Treatment	3	3
Number of Steers per Treatment	30	30
Initial Wt. (lb)	974	974
Final Wt. (lb.)	1220	1249
Added Value for Gain/Steer		$17.69
ADG (lb./day)	2.24	2.50
DM Intake (lb./day)	21.40	22.30
Efficiency - Feed (lb.)/Gain (lb.)	9.59	9.01
Percent Inprovement		6.4%
Ration Cost/Ton (Dry Matter)	$166.67	$166.67
Days on Feed	110	110
Percent of Dry Rolled Grain in Ration	85%	85%
SarStart D Cost/Steer		$1.86
Total Feed Cost/Steer	$196.17	$206.28
Total Net Added Value for Feed and Gain/Steer		$7.58

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Feeding Trial #4 - University of California, El Centro

Design:

- Eighty crossbred steers were used in a comparative slaughter trial to study grain conditioning with different levels of **SarTemp**.
- All steers were implanted with Synovex-S® at the beginning of the trial.
- The basil diet contained Rumensin®.

Corn Processing Treatments:

1. Dry Rolled
2. Low Level **SarTemp®** **2.0 oz/ton**
3. High Level **SarTemp®** **5.5 oz/ton**
4. Steam Flaked

Results:

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Table 4. Economic Considerations.

Assumed Grain Moisture =	22.00%
Assumed Fat Cattle Price =	$0.61
Assumed Ration Cost/Ton (as fed) =	$130.00
Steam Flake Cost per Ton =	$7.00

	DRY ROLL	SarTemp LOW LEVEL	SarTemp HIGH LEVEL	STEAM
Number of Pens per Treatment	4	4	4	4
Number of Steers per Treatment	20	20	20	20
Initial Wt. (lb)	811.1	814.9	825.0	821.9
Final Wt. (lb.)	1166.7	1192.8	1229.1	1192.8
ADG (lb./day)	3.26	3.45	3.70	3.39
DM Intake (lb./day)	19.23	19.67	20.17	17.91
Efficiency - Feed (lb.)/Gain (lb.)	5.91	5.72	5.46	5.29
Added Value for Gain/Steer (vs DRC)		$13.69	$29.66	$9.39
Percent Inprovement (vs DRC)		3.3%	8.2%	11.7%
Ration Cost/Ton (Dry Matter)	$166.67	$166.67	$166.67	$166.67
Days on Feed	109	109	109	109
Percent of Grain in Ration	65%	65%	65%	65%
SarTemp Cost/Steer		$0.59	$1.67	
Total Feed Cost/steer	$174.65	$179.24	$184.91	$171.42
Total Net Added Value vs. Dry Rolled/Steer		$9.10	$19.40	$12.63

Feeding Trial #5 - Commercial Feedlot in Texas

Design:

- 1333 crossbred steers were used in a comparative slaughter trial to study grain conditioning with different levels of **SarTemp**.
- All steers were implanted twice during the feeding trial.
- The basil diet contained Rumensin® and Tylan

Corn Processing Treatments:

1. Control - Low Level **SarTemp**® 2.0 oz/ton
2. Test - High Level **SarTemp**® 5.5 oz/ton

Results:

- Cattle fed SarTemp at the high level gained 2.4% faster than those fed at the low level.
- Cattle fed SarTemp at the high level had a 2.2% improvement in feed conversion on a dry matter basis.
- The net added value for cattle fed SarTemp at the high level increased to $9.12 per head, this equates to an eleven-fold return on product cost.

Table 5. Commercial Feedlot Results.

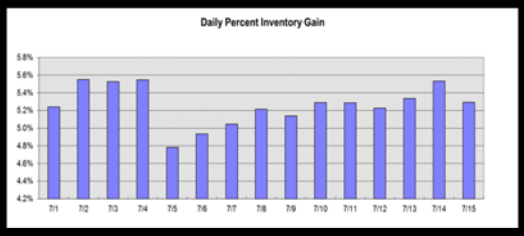
	SarTemp Low Level	SarTemp High Level	Difference
Number of Steers per Treatment	668	665	
ADG (lb./day)	3.36	3.44	0.08
Efficiency - Feed (lb.)/Gain (lb.)	6.58	6.44	-0.14
Total Gain per Head (lb.)	427.4	443.8	16.36
Value of Gain per Head	$299.18	$310.64	$11.45
Carcass Premium per Head	$25.12	$26.65	$1.53
Product Cost per Head	($0.48)	($1.33)	($0.85)
Feed Cost per Head	($182.68)	($185.70)	($3.02)
		Net Added Value	$9.12

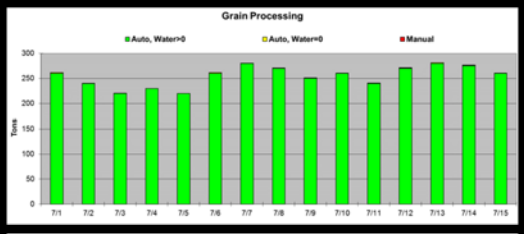
On-Line Quality Control and Monitoring

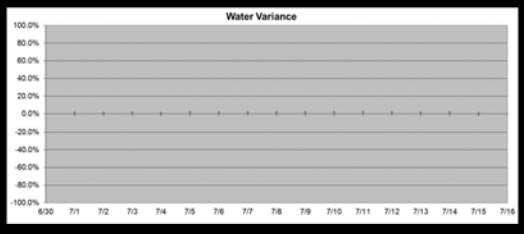
SarTec Automated SarComputer Interrogation (SASI)

On-line quality control allows for **SarTec** personnel to optimize operations from **SarTec®** headquarters and monitor **SarTemp® SG** application rate and **SarMeter** operation. Every day operational information is downloaded from the **SarComputer** via an internet link. This information is used as a control check. Additionally, customized bi-monthly SASI reports depicting grain, water and **SarTemp® SG** usage are distributed and discussed with the customer.

Bi-Monthly SASI Reports Distributed to Customers

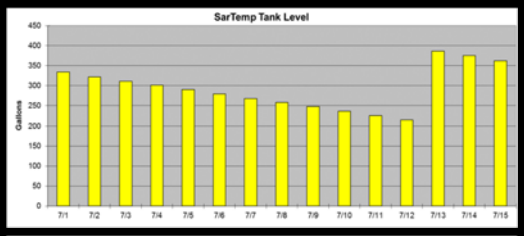


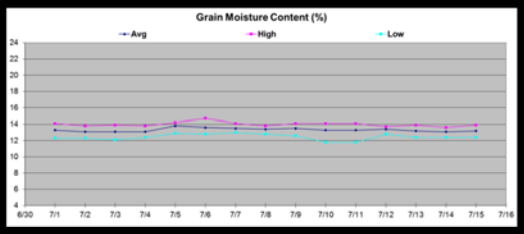




Key Operational Data Charted

- Percent Inventory Gain
- Grain Processed
- Water Variance
- **SarTemp® SG** Usage





SarTec®'s SarComputer represents the industry leading technology in total control of your grain processing needs. Daily on-line monitoring assures optimum performance and constant **SarTemp® SG** delivery.

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