FROM THE GROUND UP

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AGRONOMY NEWS

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TABLE OF CONTENTS

DEVELOPING INDUSTRY AROUND SMALL SCALE AGRICULTURE

I am receiving many questions regarding small scale agricultural operations. The answers are relatively simple in concept: grow crops that are worth a lot more than conventional crops. That is why we turn grass into cows and why we sell potatoes all cleaned and bagged. These "value added" crops, though, are marketed on a global economy which may be difficult to enter. On a much smaller scale, several options are open, but growers should be aware that the amount of work involved may be about the same as the potato grower/processor.

Growers should be aware that market demand may be very limited. For example, local markets for fresh herbs can be very lucrative but require an intense amount of hand labor in harvesting, culling, packaging and delivering. Also, the demand may be satiated with a quarter acre and you may be attempting to enter a market already dominated by a neighbor -- meaning you will have to underprice that existing source to attract new customers.

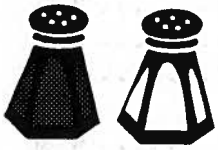
What can a small-scale producer do? I suggest a lot of homework, in this order: 1) define market demand, 2) define fair market value, 3) define production costs, 4) define processing costs, and 5) plan on a one- to two-year gap between getting started and genuinely showing a profit. If you can grow potatoes but can't compete with the "big boys," grow a specialty potato or process them into a potato chip, fry or snackfood. Just be sure to evaluate the market before you launch the whole ten acres into the project. ☛DJohnson

COLORADO CHEMSWEEP SPRING 97 COLLECTION SURVEY

In March 1997, participants in the San Luis Valley and the Northeast were able to dispose of their waste pesticides through participation in "Colorado ChemSweep." The grand total of waste pesticides collected in Colorado was 10,656 lbs. (6,954 liquid lbs. and 3,702 solid lbs.). In one county alone more than 12,000 lbs. of mostly banned chemicals, many "near antique," were collected. In Northeast Colorado there were 6,242 lbs. (4,522 liquid lbs. and 1,720 solid lbs.) picked up from 28 sites in five counties. In the San Luis Valley 3,644 lbs. (2,398 liquid lbs. and 1,246 solid lbs.) were collected from nine sites in three counties. According to participants interviewed, ChemSweep:

"was an excellent way to deal with problems."
"was a good legal, clean option. . ."
"The collectors dove in and got the job done."
"I spent $12.75 to dispose of a bag of DDT with a $1.75 price-tag."
☛McDonald

HOLD THE SALT!
DOES MANURE MAKE YOUR GROUND SALTY?



Manure tends to be high in salts, but many of these salts are actually crop nutrients. Manure application should be made at rates which satisfy crop needs without building up excessive soil salinity. Depth of incorporation plays an important role in preventing salt buildup. The deeper that manure is incorporated, the less that salts will accumulate at the soil surface. Proper irrigation management is also vital to leach salts out of the topsoil and distribute them into deeper depths.

Soil salinity levels greater than 4.0 mmhos/cm will reduce corn yields by about 25%, but levels above 2.5 mmhos/cm will reduce bean yields and yields of other salt sensitive crops, like onions, carrots, and peppers. Cantaloupe and alfalfa are less salt sensitive than corn, requiring salinity levels of about 5.5 mmhos/cm to reduce yields by 25%, and wheat and sorghum are even less salt sensitive with yield decrease occurring at 7 mmhos/cm or greater.

During the summer of 1996, we sampled 41 fields across eastern Colorado which have been receiving beef feedlot manure applications for at least 10 years, and measured soil salinity. Manure application rates ranged from 20-30 tons/A on an annual basis. The average salinity level in the top 8 inches of soil on the manured fields was 1.2 mmhos/cm, only half that required to harm salt-sensitive crops. Only three out of the 41 fields sampled had salinity levels high enough to harm beans (>2.5 mmhos/cm), and each of these three fields were on heavy clay soils. None of the sampled fields had salinity levels that would be considered harmful to corn or more tolerant crops. Therefore, with proper management, beef feedlot manure can be utilized without causing soil salinity problems.

In addition, we collected 156 manure samples from across the state of Colorado in 1996. Electrical conductivity (EC) was measured, and averages are reported in Table 1. Liquid manures (both hog and dairy) and horse and llama manures tended to have lower ECs (below 10 mmhos/cm) than solid beef, sheep, chicken, and dairy manures. Composts (dairy and turkey) had higher ECs than non-composted solid manures. Note the range in manure ECs. The range from minimum to maximum was greater than 20 mmhos/cm for all manure types except solid horse and llama manure and liquid hog manure, which had ranges below 10 mmhos/cm. The wide variation illustrates the need for sampling individual manures to adequately estimate the salt content of that manure prior to land application.

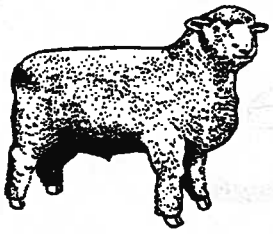
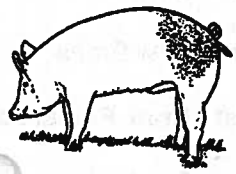


Table 1. Electrical conductivity of manures sampled in Colorado.

Manure Source	Average EC (mmhos/cm)	minimum	maximum	sample number
Beef	28.2	8.4	42.5	20
Horse	6.2	3.3	10.2	18
Sheep	23.4	9.4	42.8	18
Chicken	23.7	16.0	40.7	17
Dairy	18.8	9.0	29.5	17
Llama	5.5	4.1	6.9	2
Hog	34.8	--	--	1
Dairy Compost	24.5	12.8	43.6	16
Turkey Compost	35.8	2.4	42.2	14
Hog Liquid	2.8	0.8	4.3	18
Dairy Liquid	5.9	0.4	28.6	15



If salinity levels (EC readings) in the soil and manure are known, Table 2 can be used to determine what rates of manure application are safe so that crop damage can be avoided. This table assumes that manure is incorporated four inches deep. If manure is incorporated deeper, greater manure application rates can be safely applied. However, maximum application rate should be based upon crop nitrogen need to avoid leaching of excess nitrate to groundwater.

Table 2. Maximum manure application rates to avoid soil salinity levels greater than 2.5 mmhos/cm.

Manure EC (mmhos/cm)	Soil EC= 1 mmho/cm	Soil EC= 1.5 mmhos/cm	Soil EC= 2 mmhos/cm
10	133 tons/acre	89 tons/acre	44 tons/acre
20	57 tons/acre	38 tons/acre	19 tons/acre
30	36 tons/acre	24 tons/acre	12 tons/acre
40	27 tons/acre	18 tons/acre	9 tons/acre

If you apply manure year after year, be sure to monitor soil salinity levels to keep a check on salt accumulation so that crop yields are not limited. ☛Davis

PLANTING INTENTIONS AS A BASIS FOR PLANNING THE 1997 DRY BEAN CROP

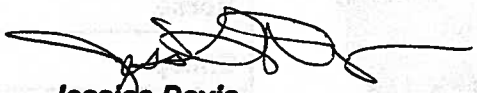
Planting intention reports can be useful for predicting the size and value of the US bean crop at harvest. The USDA National Agricultural Statistics Service reported that planting intentions for dry beans in the US are 6% higher in 1997 than 1996. Colorado is projected to plant 145,000 acres in 1997, the same as in 1996, which was the lowest acreage in the past ten years. In contrast, two important pinto producing states, Idaho and North Dakota, are projected to plant 21 and 12% more acres in 1997 at 115,000 and 650,000 acres, respectively. These figures suggest that the total US pinto bean crop could be slightly larger in 1997, assuming environmental conditions are similar to 1996. However, the favorable growing conditions experienced throughout the dry bean producing regions of the US in 1996 are unlikely to recur in 1997. If demand in 1997 remains similar to 1996, we should see similar or slightly lower prices for the 1997 crop. Alternatively, if production is reduced or export demand increases, prices could go up.

These statistics suggest that the pinto bean crop should be profitable in 1997, and has the potential to be highly profitable if production is low or demand is high. The decision to plant beans should not be based solely on profit potential, but also on the biological and economic diversity beans provide in the crop rotation. Hence, planning the 1997 dry bean crop should include considerations regarding profit potential, utility as a rotation crop with cereals, and diversification of your economic base. ☛Brick

GOOD LUCK, JIM STANELLE!

Jim will be leaving the department on April 30, 1997. After leaving CSU and Colorado Seed Growers, Jim expects to be very busy. He plans to do some international consulting, work on seed plan design, operation and training with an old friend in that business, and participate in seed conditioning clinics. Writing a book on seed conditioning is also a possibility. In the immediate future, Jim and his wife will be moving to Montana for awhile before finally settling down in Wisconsin. They plan on working together on projects, and enjoying each other in a slower, more rewarding lifestyle. Best wishes, Jim, as you pursue your dream.

Sincerely,



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