these incidences." Mader arranged a follow-up meeting in Portland in mid-December with the principal U.S. feed barley exporters to address these green pea commingling concerns.

"This mission opened our eyes to the concerns the Japanese buyers have with foreign matter contamination, particularly green pea contamination," said Keith Schumacher. "We understood they had concerns, but we did not appreciate the buyers' level of urgency. Those of us on the mission now have to communicate that level of urgency to the rest of the industry."

U.S. barley accounted for approximately 8.5 million bushels (187,000 metric tons) of 26.6 million bushels (580,000 tons) of feed barley purchased during the first three SBS tenders this year or 19% market share. However, the fourth and fifth tenders (total 19 bushels) did not include any barley from U.S., primarily due to very competitive pricing offered by the Canadian Wheat Board. Last year, U.S. barley captured 25% share of the SBS feed barley imports.

U.S. hosts first-ever Malt and Malting Barley Buyers Conference

The Idaho Barley Commission helped organize and fund the first-ever U.S. Malt and Malting Barley Buyers Conference on October 30- November 2 in Portland, OR. U.S. industry experts shared their views on world malting and malt trade in the current marketing year and forecasted malt demand through Year 2010. Most of the demand growth for malting barley and malt during the next five years will be in countries with rapidly expanding beer production, including the Far East, particularly China (18% growth), Russia and Eastern Europe (17% growth), South America (17% growth) and Africa (21% growth). The U.S. malt industry currently has excess processing capacity and is well positioned to meet the needs of the expanding Asian and Latin American markets.

World Malting Barley Trade, 000 MT, MY 05-06

EXPORTS		IMPORTS	
Australia	2,200	China	2,200
Canada	400	USA	200
Argentina/Uruguay	300	Mexico	50
EU-25	980	South America	600
Total	3,880	Russia + Croatia	400
		Africa	135
		Turkey	55
		Others	400
		Total	**4,040**

Source: Industry experts at U.S. Malt & Malting Barley Buyers Conference, Oct. 2005

US Barley S&D Projections

(million bushels, USDA, Dec. 9, 2005)

	MY 02/03	MY 03/04	MY 04/05	MY 05/06
Beg. Stocks	92	69	120	128
Production	227	278	280	212
Imports	18	21	12	0
Total Supply	337	368	412	356
Feed	84	84	116	80
Food/Malt	154	145	145	140
Exports	30	19	23	30
Total Use	268	248	284	245
Ending stocks	69	120	128	101
Ave. farm price	$2.72	$2.83	$2.48	$2.35-$2.55

Barley Competitors in MY 2005-06

million metric tones (MMT) – USDA Dec. 9, 2005)

	Production	Exports	Carryover
US	4.6 (-24%)	.3 (-60%)	2.2 (-22%)
EU-25	53.0 (-14%)	3.3 (-13%)	7.9 (-25%)
Can.	12.5 (-5%)	2.0 (+36%)	3.2 (-8%)
Aust.	8.5 (+10%)	5.5 (+23%)	1.3 (-19%)
Rus.	16.0 (-7%)	.8 (-46%)	1.3 (-42%)
Ukraine	9.0 (-19%)	4.0 (+.2%)	1.0 (-18%)

World Barley S&D Projections for MY 05/06, USDA, Dec. 9, 2005

- World barley production is projected to decrease 11.8% to 135.2 MMT. US production fell 24.1% to 4.6 MMT.
- World barley supplies are estimated to decrease by 4.4% to 167.6 MMT. US supplies decreased by 14.9% to 7.4 MMT.
- World barley trade is expected to decrease by 1.4% to 16.9 MMT. US exports are expected to decrease 60% to .300 MMT.
- World barley consumption is pegged to decrease slightly to 142.7 MMT. US usage projected to decrease by 16% to 4.8 MMT.
- World barley carryover stocks are estimated to decrease 23.2% to 24.9 MMT. US carryout is projected to decrease by 22% to 2.2 MMT.

World Coarse Grain S&D Projections for MY 05/06, USDA, Dec. 9, 2005

- World coarse grain production is projected to decrease by 5.4% to 953.6 MMT. The US crop decreased by 7.2% to 296.6 MMT.
- World coarse grain supplies are projected to decrease by 1.5% to 1,126.5 MMT. US supplies increased by 2.0% to 355.3 MMT.
- World coarse grain trade is expected to decrease by .9% to 100.7 MMT. US exports are expected to increase by 12.0% to 53.3 MMT.
- World coarse grain consumption is pegged to increase slightly to 971.6 MMT. US usage is expected to decrease by 1% to 238.1 MMT.
- World coarse grain carryover stocks are estimated to decrease by 10.4% to 154.8 MMT, while US stocks are expected to increase by 12.1% to 65.8 MMT.

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FDA publishes barley health claim

On December 23, the U.S. Food and Drug Administration (FDA) published an interim rule in the Federal Register approving the health claim that soluble dietary fiber from certain barley foods can help reduce cholesterol and the risk of coronary heart disease. FDA will accept public comments for the next 75 days before making this ruling final. Meanwhile, the Idaho Barley Commission and National Barley Foods Council, based in Spokane, WA, will team up on promotional activities to educate consumers on the health benefits of barley in the diet.

Plan to attend... Advanced Grain Marketing Workshops

REGISTRATION IS FREE. You must register by calling the Idaho Barley Commission office at 334-2090.

January 11, 2006, 8:30 a.m.- 5 p.m., Burley Inn, BURLEY

January 12, 2006, 8:30 a.m.- 5 p.m., Shilo Inn, IDAHO FALLS

Topics include:

- 2006 grain market outlook – Kelly Olson, Idaho Barley Commission, Boise
- Best management practices for managing rising energy costs
- Maximizing returns in cash and futures markets – Darrell Holaday, Advanced Market Concepts, Manhattan, KS
- Using technical signals to trade futures contracts, Craig Corbett, barley producer, Grace, ID
- Grain marketing simulation

Featured speakers: Darrell Holaday is President of Advanced Market Concepts, an agricultural marketing consulting firm located in Manhattan, Kansas. Holaday works directly with agricultural producers and food companies in developing and executing marketing plans. He is also involved in economic analysis that includes business and marketing plans for new companies that use agricultural products.

Craig Corbett is operates a dryland farm north of Soda Springs producing barley (feed, seed and malt), wheat (HRW and seed), peas and oats. He will teach you how to "harvest" the market just like he harvests his grain crop to get the maximum return possible.

IDAHO BARLEY R•E•P•O•R•T

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Winter 2006 Vol. 17, No. 1

IBC tackles cost-price squeeze by identifying cost saving measures for Idaho grain producers

A team of experts from the University of Idaho's College of Agricultural and Life Sciences and the Idaho Barley and Wheat Commissions has developed these ***2006 Best Management Practices for Managing Energy and Fertilizer Costs.***

The team is comprised of Dr. Juliet Windes (***coordinator***), UI extension grain specialist, Idaho Falls; Paul Patterson, UI agricultural economist, Idaho Falls; Dr. Bryan Hopkins, extension crops specialist, Idaho Falls; Dr. Jason Ellsworth, soil fertility specialist, Twin Falls; Dr. Brad Brown, extension grain specialist, Parma; Kelly Olson, Administrator, Idaho Barley Commission; and Patricia Dailey, Director of Programs, Idaho Wheat Commission. Other contributors include members of the UI Cereal Topics Team, county extension faculty and malting/brewing companies.

Hard choices face growers in the upcoming crop season as they face hefty energy costs. With the rising costs squeezing ever-decreasing profits, it's a critical time to streamline production practices to maximize fuel and fertilizer efficiency. There are many interconnected areas where we can adjust management practices to better control input costs. We have provided some ideas to consider as you gear up for the next planting season.

- **You can only manage what you measure.**
- **Fertilize for realistic yield goals, not for overly optimistic targets.**
- **Soil testing may be your best investment in 2006; why guess on N, P and K needs when fertilizer prices are spiking higher?**

*Many of the cereal publications referenced in these BMPs will be available at the UI Cereal Agronomy website for South Central and Southeastern Idaho at **www.ag.uidaho.edu/scseidaho/**.*

1. STRAW MANAGEMENT

Current management practices. Straw is currently managed through various levels of soil incorporation. Up to 50 lbs of nitrogen may be added to enable microbial degradation (general rule of thumb is 15-20 lb nitrogen added per ton of straw). Associated management costs would include tillage operations, nitrogen fertilizer costs, spread and incorporation.

Alternative marketing of straw. Consider marketing straw for bedding, feed, or conversion to ethanol. In much of irrigated Idaho, the short term costs associated with straw residue incorporation may be prohibitive in terms of time, equipment and increased fertilizer costs for subsequent crops. UI fertilizer guides suggest that 15 to 20 lb N/acre is needed for each ton of residue incorporated, up to 50 lb N/acre. Avoiding some of those costs in the short term is possible by marketing straw off the farm at no expense to the grower. It is possible for producers to gain $20-40 per acre even when someone else handles the straw removal. Expenses are reduced with no residue handling and it saves the 20 to 40 lb N/A in nitrogen costs otherwise needed to compensate.

Burning stubble. In limited circumstances and where there is no viable market for straw, consider burning grain stubble. This will reduce tillage/residue management field operations and save fuel. Short run cost savings exist, but may be offset by long-term losses. Consideration should also be given to non-market benefits and costs such as reduced organic matter and increased erosion potential. Refer to: "Economic Considerations of Burning Straw and Alternative Uses of Straw," Winter Commodity Schools Proceedings, Volume 28. Awareness of the environmental impacts on air quality should also be a significant factor in the decision to burn straw.

Incorporation of straw immediately after harvest. If soil temperatures are relatively high, decomposition occurs quickly upon incorporation without additional nitrogen. This reduces nitrogen costs but that is offset by the cost of running equipment across the field.

Cut the grain as close to the ground as possible, using a straw chopper on the combine, and a chaff spreader starts to break the straw down at harvest time. For your fall tillage use minimum soil disturbance equipment such as a v-ripper. This not only breaks up the land but helps holds the snow and allows mother nature to begin breaking the straw down. In the spring, use minimum tillage equipment and leave the straw on top.

2. FERTILITY / NITROGEN MANAGEMENT

Fine-tuning current fertilizer practices. In many cases for small grains, we guess on fertilizer needs based on previous experience and the assumption that grains are a minimally profitable rotation crop. Optimum management of nitrogen and fertilizer inputs does not equate to managing for maximum yield. Rather, management for maximum profit requires nitrogen application based on a realistic yield goal adjusted for soil type, residual soil test nitrogen, previous crop (legume), and irrigation water nitrogen credits. Accounting for all sources of available nitrogen (such as residual soil nitrogen, nitrate

continued

in irrigation water, nitrogen mineralized from organic matter, manure and crop residues) may allow you to reduce the amount of additional nitrogen applied.

Soil testing. Many small grain producers do not soil test for N, even though they may soil test for other crops in their rotation. There may not be a need to annually soil test for P, K, S, and possibly other nutrients for small grains, especially when small grains are part of a diverse crop rotation that includes higher value crops that are routinely fertilized with these nutrients. But testing for N availability is essential for optimizing small grains nitrogen fertilization even in diverse rotations because of the variability in residual nitrogen resulting from previous crop management. The cost of soil testing for nitrogen in the overwhelming majority of cases is minimal compared to the potential cost savings (or potential production increase).

Avoid applying nitrogen in the early fall, beyond the minimum needed to establish the crop, to avoid nitrogen leaching, immobilization, and volatilization losses. Recent research in southern ID suggests that any nitrogen applied for purposes of straw decomposition would be more effectively used by the next crop if applied in the late fall or spring. Kimberly USDA-ARS research under field conditions did not support nitrogen applied in early fall for straw decomposition. What was effective for straw decomposition was incorporating residues as early as possible to take advantage of warmer temperatures and longer periods of time for decomposition to occur. Refer to CIS 825, "Wheat Straw Management and Nitrogen Fertilizer Requirements", that summarizes some of this work.

Optimize fertilizer application based on price of fertilizer, expected yield response and price of grain. Optimize nitrogen input for maximum dollar return.

Consider cheaper nitrogen sources. The best source of nitrogen is usually the source that is least costly. Urea is generally the least costly form of dry nitrogen and should be considered for use. The only concern for urea is that the nitrogen can be lost to volatilization if it remains on the surface under warm, windy, and/or humid conditions. Incorporation via mechanical or irrigation means into the soil will prevent this from happening. Application under cool conditions lessens this concern. Application of ammonium sulfate is relatively more costly, but may be warranted if the soil and water tests indicate a need for sulfur in addition to the nitrogen.

If the material is applied with the seed in the seed row, urea is more toxic than other nitrogen sources, thus application with the seed should be limited to 20-25 lb-N/a. Use of fertilizer products such as polymer coated urea or a urease inhibitor with regular urea will help slow conversion of urea into ammonium and reduce the risk of toxicity.

The cheapest source of N may be anhydrous ammonia (gas) or aqua ammonia (liquid), but these forms require incorporation and soil sealing during the application (6-8 in and deeper if soil is dry). For many that have access to these sources, the cost can be significantly less expensive per unit of N than dry urea; however, the costs of increased fuel consumption due to higher horsepower needs for application may offset the cost benefits.

If applying phosphorous (P) to your grain crop, most sources, such as MAP (11-52-0) also contain nitrogen and can be a good choice to supply both. Banding phosphorous has been shown to improve uptake efficiency and, as such, allows less total phosphorous (30-50%) to be applied if soil test levels aren't too low. If soil test levels are low, a broadcast application of phosphorous will be needed as well.

Optimize nitrogen timing. In much of southern Idaho, the most effective dry granular nitrogen application for early planted fall wheat is a topdress in late winter or early spring, in comparison to preplant applications. Any nitrogen applied to soils once temperatures drop below 50 degrees F will probably be used more effectively than earlier applications because less nitrogen is immobilized by microorganisms as well as less loss due to volatilization.

Any nitrogen application that can be tank mixed according to the label with other foliar applications of herbicides is used effectively by small grains, but there is a limit to the amount that can be applied without causing foliar burn. If applying foliar N, urea causes less burn than urea ammonium nitrate (UAN or Solution 32). The nitrogen application rate should be based on a spring soil sample, as there is too much opportunity for loss if sampled before then.

Optimize irrigation and consider fertigation. Be cautious with the first irrigation, as more nitrogen can be lost from the rooting zone from leaching with the first irrigation than any subsequent irrigation, especially if the field was plowed. If you have to irrigate to insure early vegetative growth during tillering, avoid wetting soils to depths extending beyond the existing root system. Limiting the first irrigation to 0.5" or so on coarse textured sandy soils is a good practice. This definitely helps reduce nitrate leaching.

Apply nitrogen through irrigation to reduce trips across the field and avoid physical crop damage. Little nitrogen is needed by young plants, and less by dormant winter crops. Nitrogen can be metered through irrigation and applied to more closely match crop demands. For hard (red) wheat protein enhancement, if nitrogen is limiting, an extra shot (30-40 units) of nitrogen can be applied when most needed for optimum grain protein – late vegetative to early grain fill. Effective irrigation management will also prevent losses from leaching. In addition, optimal nitrogen application rates for irrigated cereals can change drastically when irrigation is less than optimal. Nitrogen rates should be reduced for yield that is likely to be moisture limited. The downside of fertigation is that the cost per unit of nitrogen is likely greater with traditional sources available for injection, however, savings in fuel and other efficiencies may offset this added fertilizer cost.

Don't irrigate any longer during the season than necessary. In soils with good water holding capacity, shutting off the water at soft dough will not affect yield and may improve quality. Shutting off all irrigation at mid-dough stage is recommended as long as the upper two foot soil profile is at or near field capacity.

Plant or production monitoring. Some after-the-season assessments might be in order for fine tuning nitrogen fertilization practices. For wheat, grain protein is a reasonable means for estimating the adequacy of nitrogen provided in the system. For soft whites, protein levels below 10% probably mean nitrogen was inadequate for maximizing returns. If soft wheat protein exceeds 11% the reverse is probably true. For hard red winter wheat protein lower than 11% and DNS protein below 12% nitrogen is probably inadequate for maximum returns.

Use of zone mapping accomplished for other crops such as potatoes to maximize fertility for high production zones and minimize waste in low production areas.

Mapping fields for soil type and productivity is essential to targeting high and low production areas. Fields should be divided into management units based on soil color and topography. A single soil sample is collected from each management unit and rate is determined based on the residual soil N and the yield potential of the soil in this zone. This enables the producer to ensure that nitrogen application is optimized for each area in the field.

Utilization of PCU – Polymer Coated Urea or other nitrogen stabilized with nitrification or urease inhibitors may improve the effectiveness of some applied nitrogen. The cost may not be that much more than urea, and the savings from reduced nitrogen losses may offset the initial higher costs.

OTHER FERTILIZER OPTIONS

Consider cheaper K sources. If fertilizing to provide potassium, KCL (potassium chloride – Muriate) is about a third less expensive than K_2SO_4 (potassium sulfate), and probably is more effective in addressing physiologic leaf spot in small grains. Some soils are low in Cl, and KCl is a more appropriate K source if you don't need the sulfur.

Fertilizing for maintenance versus for crop requirements. Many growers maintain higher than necessary soil test levels for P, K, S and other nutrients than are required for maximum economic returns. To some extent this has caused a considerable reservoir of nutrients to be held in the inorganic and organic fraction, some of which becomes available during the growing season. This might be a good year to draw on this reservoir.

Banding vs. broadcast. Broadcast is the most convenient and quick application method but banded P and K can be more efficient than when broadcasted if salt effects are avoided.

3. OTHER PRODUCTION PRACTICES

Idle poor quality, least productive fields or portions of fields. Focus field operations and inputs on most productive fields or portions of fields. Example: shut-off pivot corners and end guns.

Plant varieties that use fewer inputs (water and/or fertilizer) and yet produce good quality and acceptable yields. Choose disease and insect resistant varieties with a history of good productivity within your area. Market acceptability should also be a consideration.

Reduce tillage operations. For example, direct-seed or single-pass seeding. At $2.00 per gal diesel, conventionally-tilled corn uses fuel to the tune of $14.17 per acre, and no-till corn consumes $9.14 per acre. Without tillage, smaller, more fuel efficient tractors can be used. No-till can conserve moisture and potentially reduce irrigation costs associated with diesel-run pumps. See CTIC Partners – "New Math": Will Fuel and Fertilizer Bills Drive Adoption of Conservation Tillage? **http://www.ctic.purdue.edu/partners/ 112005/feature.asp**.

We urge you to visit the **USDA Natural Resources Conservation Service's (NRCS) Energy Estimator** on their website at **http://ecat.sc.egov.usda.gov.** This Energy Estimator will help producers calculate their diesel fuel costs associated with various types of tillage practices. You plug in a zip code, crop acres and the Estimator will tell you much diesel it will take to raise the crops typically grown your particular area under various tillage scenarios. We also recommend you consult your local soil and water conservation district to see if there are programs available in your area to rent direct seeding drills.

For small grain establishment, furrow irrigated producers have some challenges. Onion producers by statute must bury onions left in the field. Plowing may be necessary following potatoes if volunteer potatoes are an issue. For other low residue crops, plowing may not be necessary. Corn grain residues are a problem and generally require some tillage, but grazing corn stalks where possible can greatly reduce the tillage required, not to mention provide additional income. But following many other crops there is frequently more tillage performed than is justified for small grain establishment, especially under sprinklers where furrows don't need to be reestablished. Following small grains, straw removal could improve the prospects for reduced tillage, especially for subsequent corner bean plantings.

Tractor/vehicle maintenance/tune-ups to ensure that fuel consumption is optimal. Proper maintenance and upkeep will also reduce replacement costs and increase equipment longevity.

Optimize tractor horsepower requirements by operation and implement used.

Park gas guzzling pickups and drive a fuel-efficient vehicle (car) whenever possible.

Renegotiate land rental agreements to better reflect the return to land based on higher input costs. This applies to both crop-share and cash-leases.

Seed treatments. The potential exists to skip seed treatments in areas where excellent rotation practices are employed and there is no documented history of high soil disease pressure. Care must be taken to avoid planting malt barley infected with high levels of smut diseases. Many growers will also spare the expense of buying certified seed and utilize bin-run seed, but risk weed seed contamination.

Scouting. For problem insects such as cereal leaf beetle and fungal diseases such as stripe rust, applying control measures according to published thresholds may also save some costs of preventative treatments.

Broadcast seeding. There are some situations where combining a broadcast fertilizer and seeding operation makes sense. It normally requires a higher seeding rate. For late fall seedings, where small grains aren't emerging until spring anyway, broadcast seeding with the fertilizer application can facilitate a more timely planting, especially if it enables a fall versus spring planting on soils difficult to get onto in the spring. Since the fertilizer is normally incorporated with a shallow tillage operation anyway, this would serve to cover the seed (though seed depth and soil dryness are issues). Timely germination does depend on winter. Fortunately, emergence of plantings from late November through January doesn't vary much, and consequently yields don't differ much either. This could be an option in early fall as well but timely germination and emergence is more dependent on subsequent irrigation because fall showers are not dependable in many areas such as western Idaho. Broadcast seeding is less of an option in spring where spring showers are infrequent and delays in germination and emergence can have appreciable affects on yield and quality. If irrigated right after the shallow tillage, then it is more feasible, but most of Western Idaho doesn't have access to irrigation water until April and our small grains should be well established by then.

Reduce seeding rates. Recommended seeding rates for irrigated spring barley can be as high as 120 lbs per acre. In reality, most barley varieties compensate well at lower seeding rates by increasing the number of tillers produced per plant. In previous research done at Aberdeen, when seeded at optimal planting dates, there were little to no differences in yield of barley planted at 60 lbs/A versus that planted at 120 lbs/A. See the ***Spring Barley Production Guide,*** University of Idaho, BUL 742, pg 17, Table 6 for further guidance. Malting/brewing companies recommend establishing a plant stand of 750,000 plants per acre to optimize both yield and grain quality. Depending on the 1,000 kernel weight and germination percentage of the variety, this may equate to 70-80 lbs of seed per acre. Dryland barley could also be planted at reduced seeding rates.

Weed management. Determine the weed species and density in each field before deciding which herbicide(s) to use for weed control. Using the same herbicide combination for weed control in all your grain may not be necessary. It may be possible to use less expensive herbicides. On the other hand, use the recommended rates for weed control. Using reduced rates (below-labeled rates) may save some money in the short term, but may also lead to bigger weed problems in the long term. One other important aspect is to make sure your sprayer is calibrated accurately. Over-application of herbicides increase costs and increase crop injury potential, which leads to lower yields.

marketing Update

U.S. barley team strengthens ties with largest export customer

The annual U.S. Barley Mission, comprised of U.S. barley producers and traders, met with Japanese government officials and feed industry representatives on November 7-10 in an effort to solidify our relationship with our largest export customers. This mission is organized and sponsored annually by the U.S. Grains Council, a private, non-profit partnership of farmers and agribusinesses committed to building and expanding international markets for U.S. barley, corn, grain sorghum and their products.

The U.S. Grains Council is headquartered in Washington, D.C., and has 10 international offices that oversee programs in nearly 80 countries. Support for the Council comes from its members, like the Idaho Barley Commission, and the U.S. Department of Agriculture.

A majority of Japan's feed barley imports go through their Simultaneous Buy Sell import system (SBS), which was first established in 1999. The team learned that both the most, if not all, feed barley purchases (estimated at about 1.3 million metric tons) will be covered under the SBS import system next year.

According to Ryan LeGrand, trade servicing manager for the U.S. Grains Council, "We learned the feed manufacturers were not happy with the plumpness and color of the barley they received from one of our international competitors this year. Our team took the opportunity to showcase the quality of U.S. barley and the U.S. inspection system which guarantees our customers receive the quality of grain they have specified."

The team also addressed other topics – including the condition of the current crop and declines in U.S. production – during a half-day seminar at the USGC Tokyo office. As part of the seminar, Keith Schumacher from Primeland Cooperatives, Lewiston, ID, gave a presentation on the U.S. and world barley supply and demand. Dan Mader, chairman of the Idaho Barley Commission from Genesee, ID, presented a barley crop and quality report for Idaho. Mader also spoke about new varieties of U.S. barley that are in the research pipeline, including a winter malting barley that could have great potential in the northern Idaho production region.

"We had significant discussions on green pea commingling in U.S. feed barley shipments to Japan – a major concern for some Japanese feed barley customers," said Dan Mader. "The mission members were able to explain to our largest export customer that both U.S. barley producers and U.S. barley grain elevators are aware of the concerns that Japan buyers have and that we are working hard to reduce

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