Barley

Introduction

Barley was considered to be the first ever cereal crop to be domesticated. Along with emmer wheat, low yielding awned wheat, barley was a staple cereal crop of ancient Egypt, dating back to as far as 5000 BC and even earlier than that. At that time the main use of barley was limited to making beer and bread. From eating, the importance of barley even extended to having religious significance in Europe and ritual significance in ancient Greece. It is fourth largest cereal crop after maize, wheat and rice in the world with a share of 7 per cent of the global cereal production. It is a major source of food for large population of cool and semi-arid areas of the world, where wheat and other cereals are less adapted. In European countries, it is used as the only breakfast food, whereas the people of Nepal, Tibet and Bhutan use it as a staple food. Barley is an annual cereal grain crop that is consumed as a major feed for the animals. The rest is used as malt in whiskey or sugar as well as health food. Barley is used for manufacturing of liquors in western countries. It is basically a grass crop that comes from the family of Poaceae and considered to be the fourth most important crop in the world after wheat, maize and rice. The crop resembles white berries and is believed to be excellent for drought-like conditions. Other than playing its part as a major food crop, it is also used in beverages and beers. The Latin name for barley is *Hordeum Vulgare*. It is available in a variety of forms like whole barley, hulled barley, pearled barley as well as barley flakes. It is a rich source of metals like zinc, copper and phosphorous, as well as other nutrients like calcium and iron.

Domestic Scenario

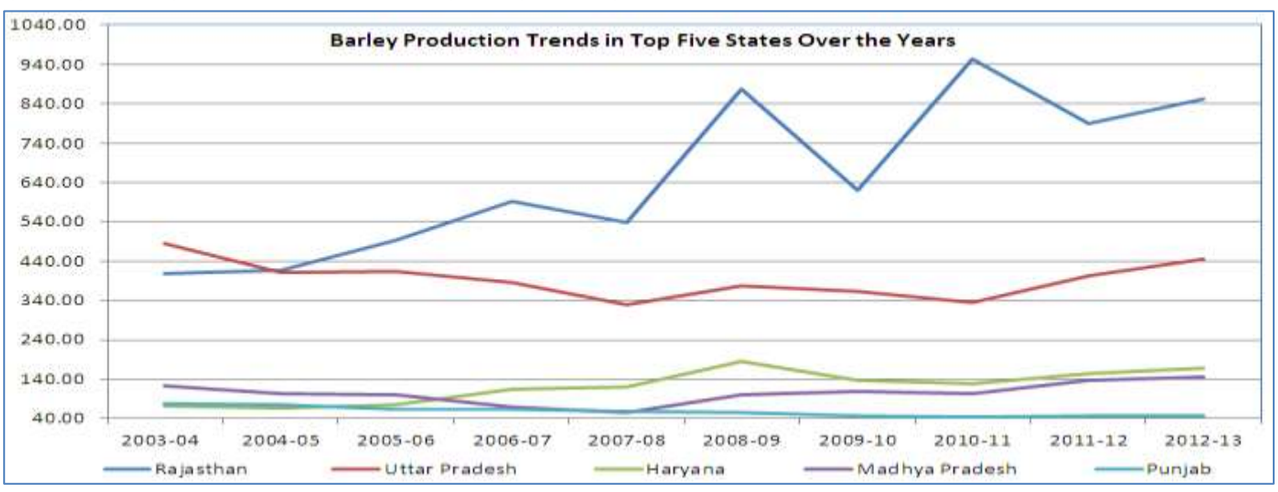
India's Barley production in 2012-13 is estimated at around 17.52 lakh MT, which is marginally increase from 16.18 lakh MT produced in 2011-12. The major barley growing states in India are Rajasthan, Uttar Pradesh, Haryana, Madhya Pradesh, Punjab, Uttrakhand, Himachal Pradesh, Bihar, Jammu and Kashmir and West Bengal. Over 74.10 per cent of the total production for the country was contributed by 2 states. The top barley producing states of the country are Rajasthan (48.65 per cent), Uttar Pradesh (25.45 per cent) followed by Haryana (9.53 per cent) and Madhya Pradesh (8.27 per cent).

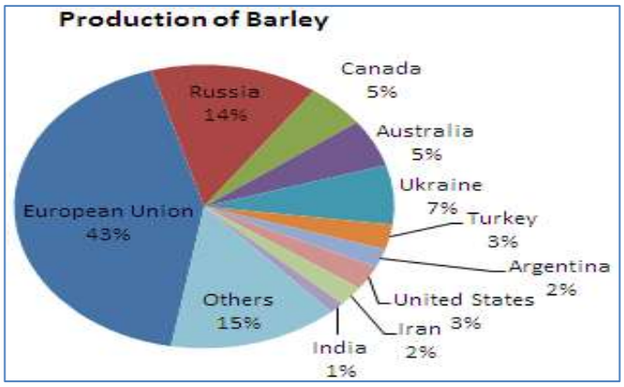
Barley Production in India **('000 MT)**

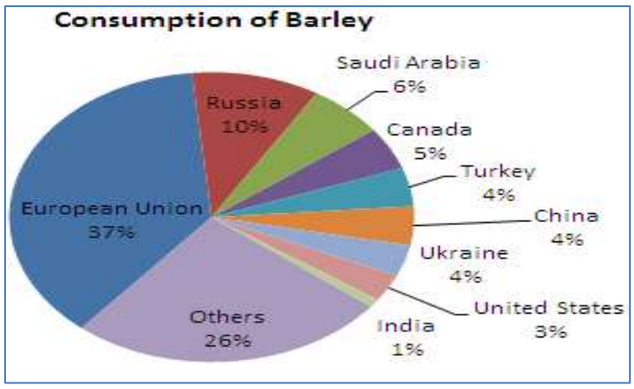
State	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Rajasthan	408.80	417.70	492.10	591.70	539.00	878.40	619.80	954.80	789.15	852.58
Uttar Pradesh	485.40	411.70	413.40	386.00	327.90	376.00	362.00	333.56	404.00	446.00
Haryana	73.00	67.00	76.00	115.00	120.00	185.00	137.00	129.00	153.00	167.00
Madhya Pradesh	123.20	104.10	99.80	69.80	56.30	101.50	110.00	103.00	138.30	144.92
Punjab	77.00	74.00	63.00	64.00	57.00	55.00	47.00	44.00	47.00	47.00
Himachal Pradesh	31.00	42.00	18.40	24.30	25.40	28.70	16.20	27.74	30.39	36.25
Uttrakhand	34.00	33.00	18.00	30.00	26.00	22.00	26.00	30.10	28.00	30.73
Bihar	24.00	18.30	18.80	19.90	17.70	15.90	12.90	25.10	16.69	15.23
Jammu & Kashmir	8.20	10.00	4.00	7.00	8.40	7.80	7.86	8.67	4.20	6.95
West Bengal	4.10	4.00	3.00	2.60	2.70	4.20	2.40	2.80	3.34	3.50
Others	28.90	25.30	14.10	17.60	15.70	14.60	13.50	4.10	4.58	2.29
All India	1297.60	1207.10	1220.60	1327.90	1196.10	1689.10	1354.66	1662.87	1618.65	1752.45

Source: Ministry of Agriculture

Overall India's barley production has increased by about 35.05 per cent over the decade (2003-13). During the above period the maximum growth in production was seen in Haryana (128.76 per cent). The other top three barley growing states with significant growth in production are Rajasthan (108.56 per cent), Madhya Pradesh (17.63 per cent) and Himachal Pradesh (16.94 per cent).







International Scenario

The global barley scenario also expected to affect the prices in a big way. To measure the exact impetus of the global factors, we can have a close watch at the global barley balance over the last 15 years. From the table we can see that the global production over the years have shown gradual improvement by about 5.41 per cent in the last 15 years. Likewise the export and consumption grew by 36.81 and 5.21 per cent respectively. The positive fact about the Barley trade is the growth in the consumption over the years and the consistent increase in the production. If this pattern of consumption (rate of growth) continues in the coming years, the prices are bound to maintain a steady uptrend as the supply is always going to lag behind the demand.

World Barley: Supply and Demand (Million MT/Ha)

Years	Area Harvested	Production	TY Exports	Domestic Consumption	Ending Stocks
2000-01	52.90	133.00	16.30	134.30	22.60
2001-02	55.70	143.40	17.20	136.80	29.20
2002-03	54.80	134.20	16.30	135.80	27.50
2003-04	58.40	142.70	14.80	146.80	23.50
2004-05	57.50	152.10	17.00	142.50	33.10
2005-06	55.30	136.20	17.40	141.00	28.30
2006-07	56.40	137.00	14.60	143.80	21.50
2007-08	55.90	133.00	18.50	133.90	20.60
2008-09	55.20	155.00	18.20	144.00	31.60
2009-10	54.40	151.10	17.30	145.20	37.40
2010-11	47.20	123.10	15.20	136.20	24.30
2011-12	49.40	133.50	21.40	135.20	22.70
2012-13	50.20	129.80	22.10	131.70	20.80
2013-14	50.70	145.40	23.90	141.10	25.10
2014-2015	49.80	140.20	22.30	141.30	24.00

Source: USDA

Country wise Trends in Production, Consumption and Ending Stocks ('000 MT)

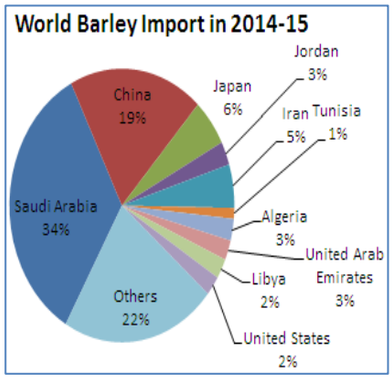
Country	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Production										
European Union	54,902	56,430	57,765	65,759	62,393	53,691	51,883	54,875	59,639	59,927
Russia	15,791	18,155	15,663	23,148	17,881	8,350	16,938	13,952	15,389	20,000
Canada	11,678	9,573	10,910	11,786	9,528	7,627	7,892	8,012	10,237	7,120
Australia	9,483	4,257	7,159	7,996	7,865	7,995	8,221	7,472	9,539	7,600
Ukraine	8,975	11,341	5,981	12,612	11,833	8,484	9,098	6,935	7,561	9,450
Turkey	7,600	7,500	6,000	5,700	6,500	5,900	7,000	5,500	7,300	4,000
Argentina	799	1,330	1,600	2,110	1,356	2,950	4,500	5,000	4,750	3,000
United States	4,613	3,923	4,575	5,205	4,934	3,924	3,370	4,768	4,719	3,849
Iran	2,857	2,956	3,104	1,547	3,446	3,580	2,900	3,400	3,200	3,200
India	1,200	1,220	1,330	1,200	1,690	1,350	1,660	1,620	1,750	1,810
Others	18,330	20,277	18,873	17,947	23,629	19,271	20,060	18,273	21,285	20,243
World	**136,228**	**136,962**	**132,960**	**155,010**	**151,055**	**123,122**	**133,522**	**129,807**	**145,369**	**140,199**
Consumption										
European Union	54,266	55,943	54,450	57,270	56,770	56,610	51,200	51,000	53,500	52,500
Russia	15,500	16,400	15,050	17,100	16,650	9,500	14,300	12,100	12,600	14,400
Saudi Arabia	6,510	7,010	7,430	7,425	7,525	6,325	7,225	8,325	8,425	8,525
Canada	9,636	10,182	7,842	8,949	8,717	7,464	6,916	6,809	7,746	6,700
Turkey	7,300	7,300	6,100	5,700	5,900	6,000	6,750	6,200	6,950	6,050
China	5,400	4,300	3,800	4,300	4,500	4,050	3,800	4,000	6,300	6,100
Ukraine	5,300	6,300	5,000	5,900	5,600	6,000	6,300	5,100	5,100	4,900
United States	4,570	4,596	4,324	5,102	4,589	4,536	4,170	4,638	4,775	4,285
Iran	4,200	3,400	3,600	3,550	3,700	3,900	4,100	4,600	4,500	4,500
India	1,200	1,220	1,000	1,000	1,500	1,350	1,550	1,525	1,200	1,300
Others	26,403	26,889	25,506	27,027	29,446	28,729	29,153	27,913	30,674	31,394
World	**140,285**	**143,540**	**134,102**	**143,323**	**144,897**	**134,464**	**135,464**	**132,210**	**141,770**	**140,654**
Ending Stock										
European Union	8,500	5,838	5,730	10,951	15,552	7,938	6,069	5,071	5,513	6,340
Saudi Arabia	2,720	2,541	2,539	2,338	2,133	1,323	2,814	3,006	4,096	3,586
Canada	3,289	1,491	1,568	2,964	2,502	1,502	1,195	983	1,924	1,069
United States	2,350	1,500	1,485	1,932	2,515	1,945	1,306	1,750	1,791	1,681
Iran	965	921	725	622	1,268	1,348	1,348	1,748	1,348	1,248
Algeria	554	462	333	184	1,247	1,236	1,435	1,194	1,194	1,044
Morocco	481	903	214	114	1,270	984	775	189	976	276
Russia	933	1,387	1,153	3,813	2,395	1,386	848	726	973	2,273
Turkey	650	528	615	793	790	724	910	469	899	344
Ukraine	772	724	710	1,055	1,067	794	1,172	873	883	1,238
Others	7119	5182	5511	6826	6705	5167	4779	4768	5454	4858
World	**28,333**	**21,477**	**20,583**	**31,592**	**37,444**	**24,347**	**22,651**	**20,777**	**25,051**	**23,957**

Source: Foreign Agricultural Service, Official USDA Estimates

From the above table, we can see that the global production over the years have shown gradual improvement. It showed an increase of about 13.87 per cent over the last five years. The top barley producing countries are European Union (42.74 per cent), Russia (14.27 per cent), Canada (5.08 per cent), Australia (5.42 per cent), and Ukraine (6.74 per cent). During this period the maximum growth in production was seen in Russia (139.52 per cent). Likewise the consumption has improved by (4.60 per cent). It was seen in European Union (37.33 per cent), Russia (10.24 per cent), Saudi Arabia (6.06 per cent), Canada (4.76 per cent) and Turkey (4.30 per cent). There has been global ending stock declined marginally by 1.60 per cent. The maximum ending stock contribution was seen in European Union (26.46 per cent), Saudi Arabia (14.97 per cent), Canada (4.46 per cent), United States (7.02 per cent) and Iran (5.21 per cent).

World Barley Trade ('000 MT)

In the international barley trade, a relatively small number of exporting countries must interact with a large number of importing countries. However, because of market segmentation, some of the larger barley importers have had major impacts on world barley prices. The top five importing nations accounts for 66.94 per cent of the total global imports of which 34.22 per cent is done only by Saudi Arabia. The other countries worth mentioning are China (19.25 per cent), Japan (5.56 per cent), Iran (5.13 per cent) and Jordan (2.78 per cent). The major countries involved in the export of barley are explained by the following chart. Because of the high concentration of exports coming from only a few countries, the international barley market is vulnerable to disruptions in supply from major exporting countries, leading to higher world prices. This means that a sudden change in production trade policy in one or more of these countries could have a major impact on world market flows and prices. More barley exports from a larger number of countries will help buffer future trade against some of the causes of instability that have been described. However, world prices are likely to remain unstable, as production shocks occur or trade policies change in the major exporting countries. Climate change could also contribute to the instability in prices, depending on how it affects productivity in barley-producing countries. As per the details top five barley exporting countries contributed 89.10 per cent. The top barley producing countries are European Union (27.90 per cent), Australia (18.74 per cent), Russia (18.32 per cent) and Ukraine (17.49 per cent).



Major Importers of Barley in World **('000 MT)**

Country	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	
Saudi Arabia	5500	8700	8500	9500	8000	
China	1656	2541	2184	4891	4500	
Japan	1359	1257		1356	1294	1300
Jordan	566	622		759	1009	650
Iran	400	1200		1600	900	1200
Tunisia	518	193		547	646	300
Algeria	89	649		259	550	600
United Arab Emirates	334	524		541	550	550
Libya	179	183		573	500	550
United States	207	354		507	408	544
Others	3353	4415		3310	3331	5185
World	**14161**	**20638**		**20136**	**23579**	**23379**

Source: Foreign Agricultural Service, Official USDA Estimates

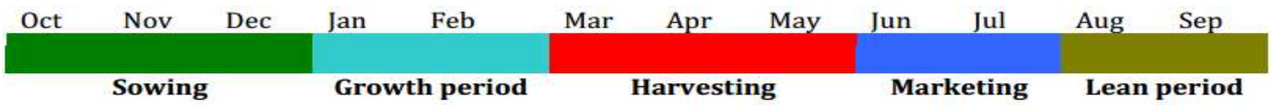
Major Exporters of Barley in World **('000 MT)**

Country	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Australia	4664	5376	4482	6216	4500
European Union	4873	3008	4939	5741	6700
Argentina	1614	3616	3581	2891	1600
Russia	267	3544	2236	2681	4400
Ukraine	2794	2462	2134	2476	4200
Canada	1207	1299	1434	1559	1300
Kazakhstan	233	704	164	500	500
India	11	46	266	441	550
United States	165	193	193	311	218
Serbia	11	9	17	25	25
Others	77	135	161	63	25
World	**15916**	**20392**	**19607**	**22904**	**24018**

Source: Foreign Agricultural Service, Official USDA Estimates

Crop Calendar

Barley is planted as a winter or summer crop in different countries. In the colder regions, barley is planted in April or May as a summer crop; in the warmer regions, barley is planted between mid-September to November. In India, it is mostly cultivated as a Rabi crop. Sowing normally takes place between October and December. Harvesting starts from end-March until mid-April in the northern states, whereas in the central and southern states, harvesting takes place from February to May. The market arrivals start from March onwards. In India, the crop duration of barley is 120-150 days.



Major Uses of Barley

- The end users of Malt and Malt Extracts are as follows:
- Breweries - for beer production
- Distilleries - for the manufacture of premium quality whisky
- Food – Malted Milk Foods, Bakery, Biscuits, Confectionery, Chocolate Powder, Cornflakes, Imitation Coffee, Baby food, etc.
- Pharmaceuticals –Tonics, Health foods, Slim diets
- Others - Pet foods, Medium for bacteria cultivation

Grading System & Types of Barley

Grading System: Barley is divided into three classes based on end use, malting, food and general purpose.

Malting - Only the varieties on the malting barley variety designation list are eligible for the malting grades. Only about 20 percent of malting barley production is actually selected for malting each year. The other 80 percent is used domestically as livestock feed, exported as feed barley or may be selected for food grade.

Food - Food barley can be any variety of barley (hulless or covered) that has been selected for a food market. There is a growing interest from food processors for barley in food products. Some examples of food uses are ready-to-eat breakfast cereals, rice like products (after splitting and polishing), thickeners, health foods, tea, etc.

General purpose - General purpose grades include covered and hulless barley not selected for malting or food. General purpose barley is used primarily for animal feed.

Types of Tradable Barley

Covered - The term covered refers to varieties of barley with the outer hull still attached after harvesting. Covered barley varieties may be two-row or six-row.

Hulless - The term hulless refers to varieties of barley in which the outer hull is loosely adhered to the kernel. The outer hull is so loose, that when this barley is harvested in the field, the outer hull is usually removed. Processors often refer to this type of barley as "naked" barley. Hulless barley varieties may be two-row or six-row.

Variety of Barley

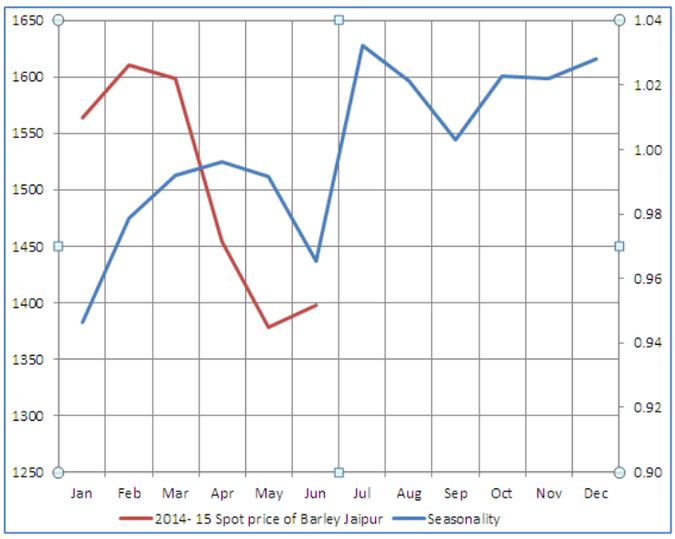
Two-row barley: A head of two-row barley contains two rows of kernels along its length.
Six-row barley: A head of six-row barley contain six rows of kernels along its length, in two groups of three kernels each.

Important Factors Driving Barley Prices

- World barley production in 2014-15 is forecast at 137.9 Million MT according to the IGC, 5 per cent lower than last season's four-year high. Smaller crops are expected in Canada, the US, Turkey, Argentina, Morocco and Australia, but output in the CIS will rise. Aggregate production in the CIS is estimated 19 per cent above the previous year, at 34.2 Million MT. The climb followed increases of almost one-quarter in Russia and Ukraine to 19.0 Million MT and 9.4 Million MT respectively.
- World consumption is forecast to fall by 3 per cent in 2014-15 to 137 Million MT, as attractively priced alternatives, including corn and wheat, replace some barley in livestock rations, said the IGC. Global feed use is expected to decline by 4 per cent to 90.3 Million MT.
- Global trade in 2014-15 (Jul-Jun, excluding malt) is still expected to fall to 22.2 Million MT, mostly due of anticipated lower feed demand. Trade in feed barley is placed at 18.0 Million MT, reflecting reduced requirements in North Africa and Saudi Arabia.
- Owing to slightly higher consumption demand, the forecast of global barley stocks at the end of 2014-15 is fractionally down to 26.8 Million MT, according to the IGC, however, amongst the major exporters, inventories are seen climbing to 15.2 Million MT with the y-o-y gain largely in Russia and the EU.
- Ukraine's barley harvest is set to fall sharply in 2015 however, according to agency UkrAgroConsult. According to a "pessimistic" scenario, Ukraine may loss 245,000 hectares of crops due to emergence failure and some 100,000 ha due to winterkill. With the five-year average yield equaling 2.43 Million MT / ha, losses will total more than 1 Million MT.
- In the EU, total consumption is expected to fall to 48.6 Million MT, including a drop for feed, to 35.9 Million MT, according to IGC estimations. The forecast of EU exports was raised to 6.4 Million MT also on higher demand from the US and China. While Ukraine's shipments were raised to 3.7 Million MT, the highest for in five years.
- In Australia, harvesting has made good progress in eastern states owing to warm and mostly dry weather. In the west, rainfall interrupted progress and concerns were raised about malting barley quality. Because of earlier dry conditions, notably in South Australia and Victoria, yields are expected to be below average and production is forecast at 7.4 Million MT, down 22 per cent y-o-y and the lowest in seven years, said the IGC report.
- The USDA identifies Canada and Australia as China's two main malt suppliers and expects malting barley acres to increase in Australia and decline in Canada. The 2014–15 production of barley in Canada is expected to drop 30 per cent to 7.1 Million MT, according to Agriculture and Agri-Food Canada's (AAFC). Area seeded in Canada for barley is expected to decline by 458,000 hectares from about 2.8 Million in 2013–14 to an expected 2.4 Million in 2014–15. Area harvested is expected to fall 518,000 hectares from about 2.6 Million to 2.1 Million. Statistics Canada is also forecasting a 16 per cent drop in barley exports for 2014-15, partly because of smaller acres and reduced malting barley supply caused by quality problems.
- Meanwhile, the recently announced China-Australia free trade agreement puts Canadian barley at a disadvantage in one of the world's most promising markets, according to the Barley Council of Canada. The trade deal, which was announced in November, removes tariffs on an array of agricultural products entering China, including meat, live animals and wine.
- China is Canada's third largest export market for barley after the US and Japan, but Canadian exports are dwarfed by several other countries, including Australia, which is the world's largest exporter. Demand for barley is growing in China, according to the USDA. Consumption is expected to increase to 6.1 Million MT in 2014 from 3.8 Million MT in 2011, and most of that will be filled by imports. The USDA also expects significant long-term growth in China, which is already the largest importer of malting barley.
- The forecast for China consumption has been raised by 0.5 Million MT owing to heavier than anticipated imports and a further diversification by feed users away from corn. Total barley imports by China are tentatively expected to reach 3.7 Million MT.
- Indian barley production and consumption in 2014-15 is forecast at 1.7 Million MT and 1.75 Million MT respectively.

Price Trend Analysis

The following graphs depicts the price seasonality and prices of Barley at Jaipur. Looking at the seasonal trend barely prices tend to remain range bound on the lower side during the months of June -September as it is the lean season for the industrial demand. The prices then tend to improve gradually (sometimes sharply) during October - January amid the progressing Rabi plantings and rising global demand. In 2013-14, the Indian barley prices have followed seasonal trend between January & August 2014 as the prospects of significant decline in global barely production has led to consolidation of prices in India. The significant decline in the ending stock is expected to apply pressure on the prices and a significant upsurge in the prices could be noticed in the coming months.



Price Expectations

Technical Recommendation:

The market is expected to find strong support at the levels of 980 on the downside and has good potential of testing 1440 and 1750 on the higher side in the coming 4-5 months. Thus, as per my analysis of Barley fundamentals, the prices would experience a bull run from levels of 1050 or even from levels before it.

Price Expectation

Commodity	Units	Minimum Support Price	Current Market (06.03.2015)	Market View	Technical Projections		
					Support	T1	T2
Barley	Rs. / Qtl	1150	1165	↑	980	1440	1750