Acquisition of Monsanto by Bayer AG

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Combination Division

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About the Combination

**Consolidation of Bayer and Monsanto** – Last amongst the three mega mergers in agricultural input market (Dow/Dupont & Syngenta/ChinaChem)

**Market affected by the combination** - Broader Crop Sciences segmented

- Non-selective Herbicides
- Herbicide tolerant trait/technology platforms
- Agricultural (broad acre) crops’ seeds
- Vegetable seeds
- Seed treatment
- Portfolio effect
- Digital platforms for supply of agricultural inputs
Crop Protection Products

Overlaps

<table>
<thead>
<tr>
<th>Segment/sub-segment</th>
<th>Countries outside India</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bayer</td>
<td>Monsanto</td>
</tr>
<tr>
<td>Selective Herbicides</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Corn/Maize</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Sunflower</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Soybean</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Oilseed Rape</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Rice</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Non-Selective Herbicides</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Insecticides</td>
<td>●</td>
<td>x</td>
</tr>
<tr>
<td>Fungicides</td>
<td>●</td>
<td>x</td>
</tr>
<tr>
<td>Seed dressing</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Plant growth regulators</td>
<td>●</td>
<td>x</td>
</tr>
<tr>
<td>Biologics</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
Non-selective Herbicides (NSH)

<table>
<thead>
<tr>
<th>Name of the party</th>
<th>AI</th>
<th>Brand</th>
<th>Patent / Off-patent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayer</td>
<td>Glufosinate Ammonium</td>
<td>Basta</td>
<td>Off-patent</td>
</tr>
<tr>
<td>Monsanto</td>
<td>Glyphosate</td>
<td>Roundup</td>
<td>Off-patent</td>
</tr>
</tbody>
</table>

**Relevant Market**

- Selective herbicides are different from non-selective herbicides
- Three different AIs - Bayer contended that these products are not substitutes
- However, the Commission noted that
  - Bayer markets its product in direct competition to Monsanto’s product
  - Market investigation indicated that the products of the Parties are largely substitutable
- Irrespective of timing of application, all NSH form part of one market
Non-selective Herbicides (NSH)

- Monsanto - largest player with a market share of [25-30]% in 2015
- Bayer had marginal presence (with market share of [0-5]%) – entry in 2014 only
- Distinction between capabilities of Integrated R&D players and those of generic players
- Apart from the parties, only Syngenta was an Integrated R&D player
- Both Parties have ongoing R&D activities as well as pipeline NSH products or their mixtures
- Substantial entry barriers - Upfront R&D costs, regulatory knowhow, pan India distribution network, IPR, etc.
- Market share data includes non-integrated players resulting in understatement of the market power of the Parties
- Combination was likely to eliminate an important competitive constraint resulting in harm to future innovation efforts.
Non-selective Herbicides (NSH)

Remedy

• Divest Bayer’s entire worldwide Glufosinate Ammonium herbicide portfolio comprising of
  ➢ all products sold under the Basta brand(s),
  ➢ Manufacturing and packaging facilities,
  ➢ intellectual property, supplier contracts and customer information,
  ➢ all R&D projects including all pipeline products, etc.
• Definitive agreement with BASF
• Complete elimination of the overlap between the Parties
Herbicide tolerant traits

- Traits provide a specific property/feature to the seed/plant
- Herbicide tolerant traits confer tolerance/resistance to crops to withstand application of specific non-selective herbicides.

<table>
<thead>
<tr>
<th>Party</th>
<th>Herbicide tolerant traits</th>
<th>Tolerant to Herbicide</th>
<th>Global availability for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayer</td>
<td>Liberty Link</td>
<td>Glufosinate Ammonium</td>
<td>Cotton, Soybean, Corn, Canola</td>
</tr>
<tr>
<td>Bayer</td>
<td>Glytol</td>
<td>Glyphosate</td>
<td>Cotton</td>
</tr>
<tr>
<td>Monsanto</td>
<td>Roundup Ready</td>
<td>Glyphosate</td>
<td>Cotton, Soybean, Corn, Canola</td>
</tr>
</tbody>
</table>

- Currently marketed HT traits are genetically modified (GM) wherein a foreign gene is inserted to achieve desired results.
- Parties were also developing non-GM HT traits for different crops
- **Relevant Market**: Licensing of herbicide tolerant trait for seeds in India
Herbicide tolerant trait/trait stacks

• Bayer’s contention - Presently the respective HT traits are not commercially available in India.

• Both Bayer and Monsanto were in process of seeking regulatory approval

• After approvals, the parties would be direct competitors

• Absent the Combination, both Bayer and Monsanto would have incentive to introduce their respective HT traits/trait stacks in India

• Bayer and Monsanto are leading innovators in developing NSH as well as corresponding HT traits/trait stacks.

• R&D in traits is characterised by high barriers to entry - time and cost intensive

• The Combination would have eliminated threat to Monsanto from Bayer’s innovation activities.
Herbicide tolerant trait/trait stacks

Remedy

• Bayer to divest its HT trait / trait stacks (a.) LibertyLink for Corn, Cotton, Canola and Soyabean; and (b) Glytol for Cotton (including R&D activities)

• Definitive agreement with BASF

• Complete elimination of the overlap between the Parties
Agricultural Seeds & Traits

• Seed industry - two-stage industry
  
  ❖ Development of new variety for each crop via breeding (development of parental lines which are crossed to create hybrids)
  
  ❖ Commercial production and commercialisation of those hybrids (also called multiplication)

Relevant Markets: Factors

• Different stages of Seed Industry

• Different players in upstream and downstream

• Different types of crops

• Difference between hybrids and OPVs

• Exchange/licensing of parental lines (including traits) to diversify germplasm portfolios
Conclusion

- Upstream - Trading of varieties i.e. licensing / exchanging of parental lines or hybrids for a specific agricultural crop seed
- Downstream - Commercialisation of a specific agricultural crop seed

**Distinction** between seed companies based on different capabilities in the value chain for seeds

<table>
<thead>
<tr>
<th><strong>Primary Seed Companies</strong></th>
<th><strong>Secondary Seed Companies</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Present in entire value chain (from R&amp;D of new traits to actual production and marketing of seeds)</td>
<td>Present only in production and/or marketing of seeds only</td>
</tr>
<tr>
<td>Significant breeding capability</td>
<td>No breeding programmes or small breeding programs</td>
</tr>
<tr>
<td>Pan-India distribution network</td>
<td>Lack pan-India distribution network</td>
</tr>
</tbody>
</table>
Cotton

• Bt. cotton - the only genetically modified (GM) seed available in India, which provide inherent resistance to lepidopteran pest

• Monsanto – Active in both
  ✓ upstream market (for licensing of Bt. cotton trait); and
  ✓ downstream market (for commercialization of Bt. cotton seed) through MHPL and Mahyco (26% strategic stake).

• Bayer – Commercial presence in the downstream market and a potential entrant in the upstream market.
Cotton

Upstream market for licensing of Bt. trait for cotton seed

• Monsanto licensed its two gene Bt. Trait to various seed companies

• Monsanto had a strong position in Bt. Trait (IR trait) with more than 95% market share

• Other competitors have single gene trait which is less effective against pests

• Competitors like JK Agri Seeds, Nath Seeds, etc. also licenses from Monsanto

• Monsanto also has Bollgard III i.e. three gene Bt cotton technology – regulatory approvals being sought (both HT and IR)

• Bayer – the other significant potential competitor with both 2 gene and 3 gene trait package (IR and HT) for Cotton

• Significant entry barriers – Cost and time intensive

• Elimination of an important potential competitor from the market
Cotton

**Downstream market for commercialization of Bt. cotton seed**

- Both Monsanto and Bayer were directly operating in downstream market
- Monsanto also had 26% equity stake in another downstream player (*i.e.* Mahyco)
- Monsanto had terminated licensing agreements of few important sub-licensees, which affected their ability to operate in the market

**Pending antitrust investigations**

- Multiple cases under investigation against Monsanto in relation to abuse of dominant position and anti-competitive agreements (for *e.g.* unfair & discriminatory conditions, excessive pricing, leveraging, *etc.*)
- Going forward, termination of licensing agreement could change the market dynamics
Input foreclosure

• The downstream seed companies absolutely dependant on the upstream trait provider *i.e.* Monsanto

• Monsanto had the capability and incentive of excluding competitors in the downstream

• Reinforcing the ability and incentive of combined entity to foreclose the market

• Termination of licensing agreement of many of the major downstream player would also have resulted in significant detrimental effect in the market

• Regulatory approval for GM crop is a time consuming process with time period of 7-9 years. Potential competitor Dow, Metahelix may not be able to enter soon.

• *The Commission concluded that the Parties would be in a strong position to foreclose the upstream market*
Rice

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<tr>
<td>Upstream market for licensing of parental lines or hybrids for rice seeds</td>
<td>●</td>
<td>X</td>
</tr>
<tr>
<td>Downstream market for commercialization of hybrid rice seeds</td>
<td>●</td>
<td>●</td>
</tr>
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- Bayer claims to be the world leader in the development of hybrid rice seed varieties and has ongoing R&D activities for rice seeds
- Bayer [40-45]% and Monsanto (through Mahyco) [0-5]%
- Mahyco to enhance its focus for rice seeds and plans to increase its presence in the same
- Competitors: DuPont [15-20]% and Metahelix [0-5]%; Syngenta [5-10]%
- Significant entry barriers – R&D, regulatory approvals
Corn

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- Market investigation revealed that Bayer and Monsanto have important overlapping gene stacks for corn seed which compete with each other
- Consolidation of two major players in terms of strength of seed traits and trait stacks
**Millets**

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<td>●</td>
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- India is considered to be the largest producer of Pearl Millet in the world
- Bayer [20-25]% and Monsanto (through Mahyco) [5-10]%
- [20-25]% market share assigned to “others” – secondary seed companies
Significance of Parties in R&D

- Respondents placed Monsanto at the first position in terms of its strength of trait and trait stack portfolios and gave second or third position to Bayer
- Overlapping R&D activities in seeds and traits
- Apart from R&D in GM traits, Parties had strong position in R&D activities related to non-GM traits
- Consolidation of two major players in terms of strength of their traits / trait stacks (both GM and non-GM)
- Monsanto and Bayer had significant germplasm bank and genome libraries
- Negatively impacting the innovation and development of new GM as well as non-GM traits and licensing of the same
Remedy

• Divestment of Bayer’s global *broad acre crop seeds and traits business*, including
  
   tangible and intangible assets (including intellectual property rights);
  
   R&D facilities and the pipeline products under development;
  
   personnel, including Key Personnel engaged;
  
   all sites and locations (either owned or leased), *etc.*

• Divestment of Monsanto’s 26% stake in Mahyco
Vegetable Seeds

• Out of total 22 vegetable seeds sold by the Parties in India, overlap in 16 vegetable seeds.

• Distinction between upstream market and downstream market - not significant for vegetable seeds

• Hybrids were considered to be different then OPVs

• Distinction between primary seed companies and secondary seed companies – still valid for vegetable seeds

• Robust distribution network is required to ensure maximum reach

• AAEC in market for 10 vegetable seeds: Cabbage, Cucumber, Bitter Gourd, Bottle Gourd, Okra, Onion, Hot Pepper, Tomato, Water Melon and Ridge Gourd
Vegetable Seeds

Remedy

• Divestment of Bayer’s global *vegetable seeds* business, including
  - tangible and intangible assets (including intellectual property rights);
  - R&D facilities and the pipeline products under development;
  - personnel, including Key Personnel engaged;
  - all sites and locations (either owned or leased), *etc.*

• Divestment of Monsanto’s 26% stake in Mahyco

• Remedy completely eliminated the overlap between the Parties
Seed Treatment Products

*Only Bayer is present, therefore no horizontal overlaps*

**Issue of vertical foreclosure**

- Market share of Bayer for seed treatment insecticides for rice, cotton and corn between [55-65]%
- Proportion of cost of seed treatment products in the overall seed cost is not significant
- Proportion of area under cultivation for which treated seeds are used is very low
- Bayer would have the ability but not the incentive to foreclose supply of seed treatment products to its downstream suppliers
- Such strategy was also not likely to have any anti-competitive effect in the market.
Portfolio / conglomerate effect

- Complementary product offerings of the Parties
- Creation of the largest integrated agricultural company with significant market power across value chains in agrochemicals and seeds segments
- Market investigation revealed probability of bundling of portfolios of crop protection products, seeds and traits
- Leveraging dominant position in one market to enter another by means of bundling or other exclusionary practices
- Significant time and capital required by new players to successfully enter the multiple industry segments simultaneously
Portfolio / conglomerate effect

- Greater accessibility for complementary products resulting from combined distribution channels
- Non-exclusive agreement with distributors indicating dependence of competitors on same distributors for their business
- Combined Entity may incentivise the distributors to give preference to its products over the competitors
- Portfolio of products likely to be more attractive option than a set made up of the brands of a number of smaller competitors
- Less incentive to out license due to significant genetic databank
Digital Platforms

• Digital farming is a term for agronomic decision-making tools for farmers based on data and advanced analytics

• Software that processes localised agronomic data – Algorithms - Recommendations for seeding, crop protection and/or fertiliser usage at field level – *Precision Farming*

• More efficient agronomic decisions – optimisation of agricultural inputs – increased productivity

• Both Bayer and Monsanto had digital platforms

• One-stop-shop platform of the combined entity would lead to enhancement of its market power

• Digital platform would be an important enabler for integrating businesses in neighbouring or complementary markets

• Entry barriers for existing market participants who may not have access to the required field data
Other Remedies

• Broad Licensing Policy on a Fair, Reasonable and Non-Discriminatory Basis (for 7 years)
  ✓ Trait Licensing Policy of GM & non-GM traits
  ✓ Non-Selective Herbicide / Active Ingredient Licensing Policy
  ✓ Access to Digital Platforms
    o existing Indian agro-climatic data
    o connect to the commercialized Digital Farming Platform(s) for supplying/selling agricultural inputs

• Commitment not to Bundle any of its Products

• Commitment on Maintaining Non-Exclusive Distribution Channels
Thank You