



## IFPRI BRIEF TEMPLATE

Check One:  **Project**                       **Review**                       **Collaboration**  
 **Workshop**                       **Other**

<b>Descriptive Title</b>	Co-milling of materials
<b>Working Title<sup>1</sup></b>	Co-milling
<b>Technical Area<sup>2</sup></b>	SR
<b>Date</b>	25 June 2019
<b>Short Description</b>	<ol style="list-style-type: none"> <li>1. Comparison of co-milling of products with singular milling followed by blending.</li> <li>2. Materials which exhibit resistance to size reduction, whether being hard or soft or very tough or for special mechanochemical effects, may be better milled by cooperative action in a mixture state.</li> </ol>
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Identify potential functionality improvement by co-milling: such as mixing, powder flow, milling dynamics, mechanofusion and mill performance</li> <li>2. Investigate the impact of milling parameters on PSD and milling energy requirement of co-milled products vs singular milled products</li> <li>3. What interactions occur between co-milled products and does this lead to behaviours (such as mechanofusion) that are different than what would happen if the same products were milled separately and then simply mixed.</li> <li>4. Conditions/criteria that could lead to preferential co-milling over milling product separately. grinding of one product over another</li> </ol>
<b>Scope</b>	<p>In scope:</p> <ul style="list-style-type: none"> <li>• Ball mill and spiral jet mill.</li> <li>• Mixtures of organic, inorganic, fibrous (vegetable based)</li> </ul> <p>Out of scope:</p> <ul style="list-style-type: none"> <li>• Simple mixing evaluation or models that could overlap with previous work done on powder mixing or segregation</li> </ul>

<b>Recommended Contractors (2 or 3)</b>		
<b>Name</b>	<b>Institution</b>	<b>Email Address</b>
Aubrey Mainza	Cape Town	aubrey.mainza@uct.ac.za
Luis Marcelo Tavares	Federal University of Rio de Janeiro	tavares@metalmat.ufrj.br

<sup>1</sup> Title used in meeting agendas and file archives

<sup>2</sup> One or more from the following list: W = wet systems; D = dry systems; F = particle formation; SR = size reduction; M = modeling; SE = systems engineering

Priscilla J Hill	Mississippi State University	phill@che.msstate.edu

<b>Submitted By:</b>	
<b>Name</b>	<b>Organization</b>
Kyle Sala	Keurig Dr Pepper
Jason Lang	Ecolab
Scott Limestoll	Lincoln Electric
Gary Liu	DuPont
Jarrold Hart	Imerys
Chuck Compson	Almatis
Mark Snyder	Almatis
Rohit Kumar	Alkermes
Brian Levy Polis	FMC
Lisa Taylor	Pfizer
Pieter Vonk	DSM
Filip Francqui	GranuTool