WHAT IS CLAIMED IS:

1. A synergistic herbicidal mixture comprising an herbicidally effective amount of (a) penoxsulam and (b) glyphosate.

2. The synergistic herbicidal mixture of Claim 1 in which glyphosate is an agriculturally acceptable salt.

3. The synergistic herbicidal mixture of Claim 1 in which the weight ratio of glyphosate to penoxsulam is from 3:2 to 896:1.

4. An herbicidal composition comprising an herbicidally effective amount of the synergistic herbicidal mixture of Claim 1 and an agriculturally acceptable adjuvant and/or carrier.

5. A method of controlling undesirable vegetation which comprises contacting the vegetation or the locus thereof with an herbicidally effective amount of the synergistic herbicidal mixture of Claim 1.

6. A method of Claim 5 for controlling undesirable vegetation in crops, especially vines, pastures, rangelands, IVM, aquatics and turf, which comprises contacting the vegetation or the locus thereof with an herbicidally effective amount of the synergistic herbicidal mixture of Claim 1.

What is claimed is:

1. A synergistic herbicidal mixture comprising an herbicidally effective amount of (a) penoxsulam and (b) glyphosate, wherein the weight ratio of glyphosate to penoxsulam is from 5.3:1 to 210:1.3.

2. The synergistic herbicidal mixture of claim 1 in which glyphosate is an agriculturally acceptable salt.

3. An herbicidal composition comprising an herbicidally effective amount of the synergistic herbicidal mixture of claim 1 and an agriculturally acceptable adjuvant and/or carrier.

4. A method of controlling undesirable vegetation which comprises contacting the vegetation or the locus thereof with an herbicidally effective amount of the synergistic herbicidal mixture of claim 1.

5. The method of claim 4 wherein the undesirable vegetation is in vines, pasture, rangeland, industrial vegetation management, aquatics or turf.

6. The method of claim 4 wherein the undesirable vegetation is in a glyphosate tolerant crop.